Topock Project Executive Abstract

Document Title: *Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* Submitting Agency: California Department of Toxic Substances Control (DTSC) Final Document? ☒ Yes ☐ No	Date of Document: March 13, 2015 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E
Priority Status: ☐ **HIGH** ☐ **MED** ☒ **LOW** Is this time critical? ☐ Yes ☒ No Type of Document: ☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other / Explain:	Action Required: ☒ Information Only ☐ Review & Comment Return to: _____ _____ By Date:_____ ☐ Other / Explain:
What does this information pertain to? ☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) ☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) ☐ Corrective Measures Study (CMS)/Feasibility Study (FS) ☐ Corrective Measures Implementation (CMI)/Remedial Action ☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) ☒ Interim Measures ☐ Other / Explain:	Is this a Regulatory Requirement? ☒ Yes ☐ No If no, why is the document needed?
What is the consequence of NOT doing this item? What is the consequence of DOING this item? Report is required to be in compliance with DTSC requirements.	Other Justification/s: ☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

This combined quarterly and annual report documents the monitoring activities and performance evaluation of the Interim Measure (IM) hydraulic containment system under the IM Performance Monitoring Program and the Groundwater Monitoring Program and Surface Water Monitoring Program for the Topock Project. Hydraulic and chemical monitoring data were collected and used to evaluate IM hydraulic containment system performance based on a set of standards approved by DTSC. Key items included in this report are: (1) measured groundwater elevations and hydraulic gradient data at compliance well pairs that indicate the direction of groundwater flow is away from the Colorado River and toward the pumping centers onsite; (2) hexavalent chromium data for monitoring wells; (3) pumping rates and volumes from the IM extraction system; and (4) Groundwater Monitoring Program and Surface Water Monitoring Program activities and results.

Based on the data and evaluation presented in this report, the IM performance standard has been met for the Fourth Quarter 2014 and annual reporting period. On July 23, 2010, DTSC approved a revised reporting schedule for this report; this was done at the request of DTSC to minimize the time between data collection and report submittal. As a result, the fourth quarter includes only the months of November and December 2014. The average pumping rate for the IM extraction system over Fourth Quarter 2014 was 132.7 gallons per minute, and an estimated 85.5 pounds (38.8 kilograms) of chromium were removed. To date, the IM extraction system has removed 8,150 pounds (3,700 kilograms) of chromium.

Written by: PG&E

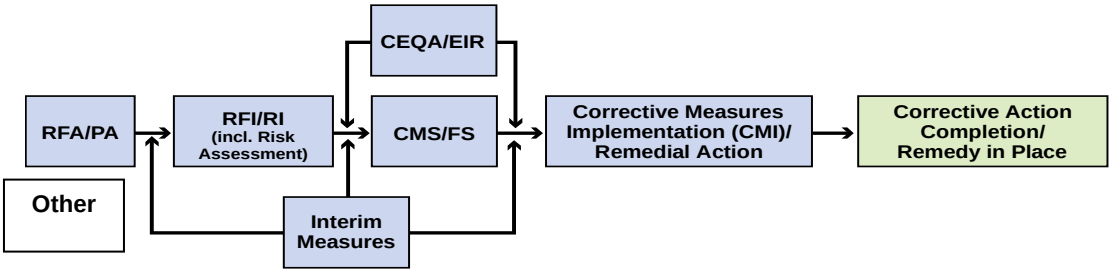
Recommendations:
This report presents recommendations for changes in the PMP-GMP for 2014 onward.

How is this information related to the Final Remedy or Regulatory Requirements:
This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.

Other requirements of this information?
None.

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).



Legend
RFA/PA – RCRA Facility Assessment/Preliminary Assessment
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9

Pacific Gas and Electric Company

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March 13, 2015

Mr. Aaron Yue
Project Manager
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Subject: *Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (Document ID: PGE20150313A)

Dear Mr. Yue:

Enclosed is the *Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California,* for Pacific Gas and Electric Company's Interim Measures (IMs) Performance Monitoring Program and the Groundwater Monitoring Program and Surface Water Monitoring Program for the Topock project. This report presents the fourth quarter (November through December 2014) performance monitoring results for the IMs hydraulic containment system and provides the annual performance evaluation for the 2014 reporting period (January through December 2014). This report also presents groundwater and surface water monitoring activities, results, and analyses related to the Groundwater and Surface Water Monitoring programs during the 2014 reporting period.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in the California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC) IM directive, dated February 14, 2005, and updates and modifications approved by DTSC in letters or emails dated October 12, 2007; July 14, 2008; July 17, 2008; March 3, 2010; April 28, 2010; July 23, 2010; and June 27, 2014.

Please contact me at (805) 234-2257 if you have any questions on the combined monitoring report.

Sincerely,

Yvonne Meeks
Topock Project Manager

Enclosure

cc: Chris Guerre/DTSC
Karen Baker/DTSC
Pam Innis/DOI
Susan Young/CA-SLC
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Final Report

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Document ID: PGE20150313A

Prepared for

California Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

March 13, 2015

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Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station,
Needles, California

Prepared for

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On behalf of

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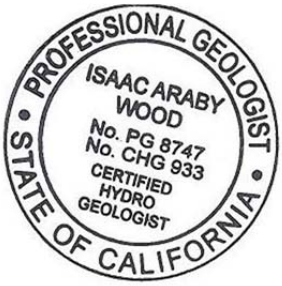
March 13, 2015

This report was prepared under the supervision of a
California Professional Geologist



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Contents

Section **Page**

Acronyms and Abbreviations ix

1.0 Introduction 1-1
1.1 Site-wide Groundwater and Surface Water Monitoring Program 1-1
1.1.1 Groundwater Monitoring Program and Surface Water Monitoring Program Networks 1-2
1.1.2 Changes to the Groundwater Monitoring Sampling Method in 2014 1-2
1.1.3 Additional Baseline Data Collection in Support of Future Groundwater Remedy 1-2
1.2 Interim Measure Performance Monitoring Program 1-3
1.2.1 Performance Monitoring Program Monitoring Networks 1-3

2.0 Fourth Quarter 2014 Monitoring Activities 2-1
2.1 Groundwater Monitoring Program 2-1
2.1.1 Monthly 2-1
2.1.2 Quarterly/Annually 2-1
2.1.3 Well Maintenance 2-1
2.1.4 Well Sampling Method Trial at Well Clusters MW-38 and MW-40 2-1
2.2 Surface Water Monitoring Program 2-2
2.3 Performance Monitoring Program 2-2

3.0 Results for Site-wide Groundwater Monitoring and Surface Water Sampling 3-1
3.1 Groundwater Results for Cr(VI) and Chromium 3-1
3.1.1 Fourth Quarter Groundwater Results for Cr(VI) and Chromium 3-1
3.1.2 Annual Evaluation of Groundwater Results for Cr(VI) and Chromium 3-1
3.2 Other Groundwater Monitoring Results 3-3
3.2.1 Contaminants of Potential Concern and In Situ Byproducts 3-4
3.2.2 Arsenic Sampling in Monitoring Wells 3-4
3.2.3 Title 22 Metals 3-4
3.2.4 Laboratory Specific Conductance Results 3-5
3.2.5 Water Level Monitoring 3-5
3.2.6 Field Parameter Data 3-5
3.2.7 Additional Water Quality Characterization 3-5
3.2.8 Trial Results at MW-38 Cluster and MW-40 Cluster 3-5
3.3 Surface Water Results for Cr(VI) and Chromium 3-6
3.4 Data Validation and Completeness 3-6
3.5 Summary of 2014 Grounding Monitoring Program and Surface Water Monitoring Program Results 3-7

4.0 Fourth Quarter Interim Measures Performance Monitoring Program Evaluation 4-1
4.1 Water Quality Results for Performance Monitoring Program Floodplain Wells 4-1
4.2 Cr(VI) Distribution and Trends in Performance Monitoring Program Wells 4-1
4.3 Performance Monitoring Program Contingency Plan Cr(VI) Monitoring 4-1
4.4 Extraction Systems Operations 4-1
4.5 Hydraulic Gradient and River Levels during Quarterly Period 4-2
4.6 Projected River Levels during Next Quarter 4-3
4.7 Quarterly Performance Monitoring Program Evaluation Summary 4-4

5.0 Annual Performance Monitoring Program Evaluation 5-1

5.1 Extraction System Operations for Annual Reporting Period 5-1
5.1.1 Extraction Facilities and Operations 5-1
5.1.2 Extracted Groundwater Quality and Trends 5-1
5.2 Capture Zone Analysis for Annual Reporting Period 5-2
5.2.1 Monthly Average Gradients 5-2
5.2.2 Annual Average Gradients 5-2
5.2.3 Analysis and Evaluation of Capture Zone 5-2
5.3 Evaluation of Groundwater Quality Trend 5-3
5.3.1 Cr(VI) Distribution and Trends 5-3
5.3.2 Groundwater Geochemistry in Interim Measures Extraction Area 5-4
5.4 Conclusions and Status of Interim Measures Operations 5-5
5.4.1 Performance Evaluation 5-5
5.4.2 Status of Operations and Monitoring 5-5

6.0 Upcoming Operation and Monitoring Events 6-1
6.1 Groundwater Monitoring Program 6-1
6.1.1 Quarterly Monitoring 6-1
6.1.2 Monthly Monitoring 6-1
6.2 Surface Water Monitoring Program 6-1
6.3 Performance Monitoring Program 6-1
6.3.1 Extraction 6-1
6.3.2 Transducer Download 6-1

7.0 Recommendations 7-1
7.1 Recommended Modifications to the Performance Monitoring Program 7-1
7.2 Recommended Modifications to Groundwater Monitoring Program Sampling Frequency and Analytical List 7-1
7.2.1 Groundwater Monitoring Program Sampling Frequency Modifications 7-1
7.2.2 Groundwater Monitoring Program Analytical Plan Modifications 7-1
7.3 Initial Results for Implementation of Alternative Groundwater Sampling Methods 7-2
7.3.1 Field Groundwater Sampling Method Trial at MW-38 and MW-40 Well Clusters 7-2
7.3.2 Initial Results for Site-wide Micropurge Groundwater Sampling Method 7-3
7.3.3 Sampling Method Trial Recommendations 7-3

8.0 References 8-1

Tables

1-1 Topock Monitoring Reporting Schedule
3-1 Groundwater Sampling Results, September 2013 through December 2014
3-2a Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014
3-2b Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Statistics, Fourth Quarter 2014
3-3 Title 22 Metals Results, January 2014 through December 2014
3-4 Surface Water Sampling Results, January 2014 through December 2014
3-5 COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, January 2014 through December 2014
4-1 Pumping Rate and Extracted Volume for IM System, Fourth Quarter 2014 and Annual 2014
4-2 Average Hydraulic Gradients Measured at Well Pairs, Fourth Quarter 2014
4-3 Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
5-1 Summary of Pumping Rate and Extracted Volume for 2014 Reporting Period
5-2 Analytical Results for Extraction Wells, January 2014 through December 2014

5-3 Calculated Hydraulic Gradients for Well Pairs by Month for 2014 Reporting Period
7-1 Proposed Groundwater Monitoring Program Analytical Suite Modifications

Figures

1-1 Locations of IM-3 Facilities and Monitoring Locations
1-2 Monitoring Locations and Sampling Frequency for GMP
1-3 Monitoring Locations and Sampling Frequency for RMP
1-4 Locations of Wells and Cross Sections Used for IM Performance Monitoring
3-1a Cr(VI) Sampling Results, Shallow Wells in Alluvial Aquifer and Bedrock, Fourth Quarter 2014
3-1b Cr(VI) Sampling Results, Mid-depth Wells in Alluvial Aquifer and Bedrock, Fourth Quarter 2014
3-1c Cr(VI) Sampling Results, Deep Wells in Alluvial Aquifer and Bedrock, Fourth Quarter 2014
3-2a Molybdenum Sampling Results, Fourth Quarter 2014
3-2b Nitrate Sampling Results, Fourth Quarter 2014
3-2c Selenium Sampling Results, Fourth Quarter 2014
3-2d Arsenic Sampling Results, Fourth Quarter 2014
3-2e Manganese Sampling Results, Fourth Quarter 2014
3-3 Groundwater Elevation Map Shallow Zone of the Alluvial Aquifer (Water Table), November 3, 2014
4-1 Maximum Cr(VI) Concentrations in Alluvial Aquifer and Bedrock, Fourth Quarter 2014
4-2 Cr(VI) Concentrations, Floodplain Cross-section B, Fourth Quarter 2014
4-3a Average Groundwater Elevations in Shallow Wells and River Elevations, Fourth Quarter 2014
4-3b Average Groundwater Elevations in Mid-depth Wells, Fourth Quarter 2014
4-3c Average Groundwater Elevations in Deep Wells, Fourth Quarter 2014
4-4 Average Groundwater Elevations for Wells in Floodplain Cross-section A, Fourth Quarter 2014
4-5 Past and Predicted Future River Levels at Topock Compressor Station
5-1 Monthly Combined Pumping Volumes and Percent Uptime, 2014 Reporting Period
5-2 Cr(VI) and Total Dissolved Solids Concentrations in Extraction Wells TW-3D and PE-1, 2014 Reporting Period
5-3 Measured Hydraulic Gradients, River Elevation, and Pumping Rate, 2014 Reporting Period
5-4a Average Groundwater Elevations in Shallow Wells and River Elevations, 2014 Reporting Period
5-4b Average Groundwater Elevations in Mid-depth Wells, 2014 Reporting Period
5-4c Average Groundwater Elevations in Deep Wells, 2014 Reporting Period
5-5 Average Groundwater Elevations for Wells in Floodplain Cross-section A, 2014 Reporting Period
5-6 Magnitude and Direction of Hydraulic Gradients in Lower Depth Interval During 2014 Annual Period
5-7 Cr(VI) Concentration Trends in Selected Performance Monitoring Wells, April 2005 through December 2014
5-8 Distribution of Cr(VI), Geochemical Indicator Parameters, and In Situ Byproducts in Floodplain Wells
5-9 Distribution of Cr(VI), Geochemical Indicator Parameters, and In Situ Byproducts in Floodplain Wells, Cross-section A, Fourth Quarter 2014
5-10 Average Stable Isotopes of Oxygen and Deuterium, January 2014 through December 2014

Appendices

A Well Inspections and Construction Information
B Lab Reports, November through December 2014 (Provided on CD-ROM Only with Hard Copy Submittal)
C Chromium, Molybdenum, Nitrate, and Selenium Trend Graphs
D Other Groundwater Monitoring Results
E Hydraulic Data for Interim Measures Reporting Period
F Groundwater Monitoring Data for Groundwater Monitoring Program and Performance Monitoring Program
G Interim Measures Extraction System Operations Log, Fourth Quarter 2014

Acronyms and Abbreviations

δ^2H	deuterium
$\delta^{18}O$	oxygen-18, stable isotope of oxygen
µg/L	micrograms per liter
CMP	Compliance Monitoring Program
Cr(VI)	hexavalent chromium
COPC	contaminants of potential concern
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
ft/ft	foot or feet per foot
GMP	Groundwater Monitoring Program
gpm	gallons per minute
IM	interim measure
IMCP	Interim Measures Contingency Plan
IM-3	Interim Measures Number 3
MCL	maximum contaminant level
mg/L	milligrams per liter
ORP	oxidation-reduction potential
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
RPD	relative percent difference
T22	Title 22
TDS	total dissolved solids
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
UTL	upper tolerance limit

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is implementing Interim Measures (IMs) to address chromium concentrations in groundwater at the Topock Compressor Station. The Topock Compressor Station is located in eastern San Bernardino County, 15 miles southeast of the city of Needles, California, as shown on Figure 1-1 (figures are located at the end of this report). This report presents the monitoring data from three PG&E monitoring programs:

- Site-wide Groundwater Monitoring Program (GMP)
- Site-wide Surface Water Monitoring Program (RMP)
- Interim Measures No. 3 (IM-3) Performance Monitoring Program (PMP)

This report presents the monitoring data from PG&E's GMP, RMP, and PMP collected from November 1, 2014, through December 31, 2014 (hereafter referred to as Fourth Quarter 2014). In addition, this report serves as an annual report and provides a summary of groundwater and surface water monitoring results for samples collected from January 1, 2014 through December 31, 2014 (hereafter referred to as the annual reporting period) under the Topock GMP and RMP. The data collected as part of the GMP and RMP are presented in Section 3.0. The data collected for the current quarter (November through December) as part of the PMP are presented in Section 4.0. An evaluation of data collected under the PMP for the annual reporting period are presented in Section 5.0. Further. Section 6.0 provides upcoming monitoring events. Section 7.0 of this report provides recommended changes to future monitoring activities for the GMP and PMP. Section 8.0 presents a list of references used while preparing this report.

This combined GMP (including RMP) and PMP reporting format was approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in May 2009 (DTSC, 2009a). On July 23, 2010, DTSC approved a new sampling event timing and reporting schedule for the PMP, GMP, and RMP programs (DTSC, 2010a). Table 1-1 presents the current sampling and reporting schedule (tables are located at the end of this report).

1.1 Site-wide Groundwater and Surface Water Monitoring Program

The Topock GMP and RMP were initiated as part of a Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act facility investigation/remedial investigation groundwater investigation. These programs are being regulated under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency [USEPA] ID No. CAT080011729).

Groundwater monitoring data collected between July 1997 and October 2007 are presented and summarized in the *Revised Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2–Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*, dated February 11, 2009 (CH2M HILL, 2009a). Select groundwater and surface water monitoring data from November 2007 through September 2008 are presented in the *Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum–Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California,* dated June 29, 2009 (CH2M HILL, 2009b).

In compliance with the requirements for Groundwater and Surface Water Monitoring Program directive of April 2005 (DTSC, 2005a), this document presents the Fourth Quarter 2014 and annual GMP and RMP report for the IM monitoring activities from November 1, 2014 through December 31, 2014.

1.1.1 Groundwater Monitoring Program and Surface Water Monitoring Program Networks

Figure 1-2 shows the current locations and sampling frequencies of the monitoring wells in the GMP. Table A-1 in Appendix A summarizes the well construction and sampling methods for wells in the GMP and other monitoring wells at the site. The complete GMP includes over 100 wells that monitor groundwater in the Alluvial Aquifer and the bedrock and consist of the following:

- One hundred twenty-nine monitoring wells in California (including two normally dry wells)
- Eight monitoring wells in Arizona
- Two water supply wells
- Two active IM-3 extraction wells
- Five test wells

Sampling frequencies for the GMP wells were updated beginning in Third Quarter 2014, following the DTSC direction given June 27, 2014 (DTSC, 2014). Figure 1-2 shows the sampling frequencies, with the sampling purge method indicated by the font of the well identification labels. These changes include sampling all three Arizona monitoring well locations semiannually, at DTSC's direction; previously one location was sampled annually since 2010. Sampling frequencies for the Arizona monitoring wells were previously updated following the April 23, 2010 approval from the Arizona Department of Environmental Quality (Arizona Department of Environmental Quality, 2010) and the April 28, 2010 directive from DTSC (DTSC, 2010b). Modifications to GMP analytical plans are included in this report; DTSC requested an updated sampling plan for non-chromium water quality analyses with the June 27, 2014 response to sampling program modifications.

Figure 1-3 shows the locations and sampling frequencies of the RMP. The RMP consists of the following:

- Ten river channel surface water monitoring locations
- Four shoreline surface water monitoring locations
- Two other surface water monitoring locations

1.1.2 Changes to the Groundwater Monitoring Sampling Method in 2014

On June 27, 2014, the DTSC approved PG&E's request to switch from the traditionally used three-volume purge sampling method at Topock to using a micropurge (or minimal drawdown) sampling method (DTSC, 2014). Approval was limited to wells screened in alluvial/fluvial sediments with saturated screen lengths of 20 feet or less. Sample collection using the micropurge method at wells meeting the above criteria was initiated during the Third Quarter 2014 sampling event and continued through the annual sampling event in Fourth Quarter 2014. As presented in this report, the sample results from the new micropurge sampling method are generally comparable to the previously used three-volume purge sampling method with a few exceptions, as expected. Because there are only one or two sample results available using the micropurge method for comparison to the previous three-volume sampling method, a detailed comparison of the two methods cannot be completed at this time. Additional samples will be needed to assess whether there are significant differences in sample results using the new micropurge method compared to the previous three-volume purge method.

1.1.3 Additional Baseline Data Collection in Support of Future Groundwater Remedy

Additional samples, not requested by DTSC, were again collected from select surface and groundwater sample locations as part of the baseline sampling in support of the groundwater remedy. Samples were analyzed for the following analytes: chloride, sulfate, bromide, calcium, magnesium, potassium, sodium, boron, alkalinity, total dissolved solids (TDS), and stable isotopes oxygen 18 ($\delta^{18}O$) and deuterium ($\delta^{2}H$).

1.2 Interim Measure Performance Monitoring Program

In compliance with the requirements for IM monitoring and reporting outlined in the DTSC IM performance directive of February 2005 and in subsequent directives from the DTSC in 2007 (DTSC, 2005b, 2007a-c), this document presents the Fourth Quarter 2014 PMP evaluation for the IM monitoring activities from November 1, 2014 through December 31, 2014.

The Topock project IM consists of groundwater extraction for hydraulic control of the chromium plume boundaries in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems are collectively referred to as IM-3. Currently, the IM-3 facilities include a groundwater extraction system (four extraction wells: TW-2D, TW-3D, TW-2S, and PE-1), conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Figure 1-1 shows the location of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC, 2005c). As defined by DTSC, the performance standard for this IM is to "establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that hexavalent chromium [Cr(VI)] concentrations at or greater than 20 micrograms per liter [µg/L] in the floodplain are contained for removal and treatment" (DTSC, 2005c). A draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California* (CH2M HILL, 2005a) was submitted to DTSC on April 15, 2005 (herein referred to as the PMP).

The February 2005 DTSC directive also defined the monitoring and reporting requirements for the IM (DTSC, 2005b). In October 2007, DTSC modified the reporting requirements for the PMP (DTSC, 2007a) to discontinue monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and modifications to the PMP were approved by DTSC in letters dated October 12, 2007; July 14, 2008; July 17, 2008 (DTSC, 2007a, 2008a-b); July 23, 2010, and June 27, 2014 (DTSC, 2007a, 2008a-b, 2010a, 2014).

1.2.1 Performance Monitoring Program Monitoring Networks

Figure 1-4 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. With approval from DTSC, the list of wells included in the PMP was modified beginning August 1, 2008. The performance monitoring wells that were in service/active during this reporting period are defined as:

- Floodplain Wells (monitoring wells on the Colorado River floodplain)
- Intermediate Wells (monitoring wells located immediately north, west, and southwest of the floodplain)
- Interior Wells (monitoring wells located upgradient of IM pumping)

Groundwater monitoring wells installed on the Arizona side of the Colorado River are not formally part of the PMP, but some of these wells have been used to collect groundwater elevation data for evaluating the hydraulic gradient on the Arizona side of the river.

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench. In addition, extraction well PE-1 is on the floodplain approximately 450 feet east of extraction well TW-3D, as shown on Figure 1-4. Currently, extraction wells TW-3D and PE-1 operate full time.

The wells screened in the unconsolidated alluvial fan and fluvial deposits, which comprise the Alluvial Aquifer, have been separated into three depth intervals to present groundwater quality and groundwater level data. The depth intervals of the Alluvial Aquifer in the floodplain area—designated upper (shallow wells), middle (mid-depth wells), and lower (deep wells)—are based on grouping the monitoring wells screened at common elevations. These divisions do not correspond to any lithostratigraphic layers within the aquifer. The floodplain aquifer is considered to be hydraulically undivided. The subdivision of the aquifer into three depth intervals is an appropriate construct for presenting and evaluating groundwater quality

data in the floodplain. The three-interval concept is also useful for presenting and evaluating lateral gradients while minimizing effects of vertical gradients and observing the influence of pumping from partially penetrating wells.

2.0 Fourth Quarter 2014 Monitoring Activities

This section provides a summary of the monitoring and sampling activities completed during Fourth Quarter 2014.

2.1 Groundwater Monitoring Program

2.1.1 Monthly

Groundwater was sampled from the active IM extraction wells (PE-1 and TW-3D) in November and December 2014 and was analyzed for Cr(VI), chromium, TDS, and pH.

2.1.2 Quarterly/Annually

The Fourth Quarter 2014 GMP groundwater monitoring event was primarily conducted between November 3, 2014 and December 23, 2014, with two wells (TW-2S and PGE-8) sampled in January 2015 due to field logistical issues, and consisted of sampling:

- One hundred thirty-nine groundwater monitoring wells
- Two active IM extraction wells

Samples from these wells were submitted for laboratory analysis of Cr(VI), chromium, and specific conductance. Additional field-measured parameters consisted of oxidation-reduction potential (ORP) and pH.

In addition, groundwater samples were collected at selected GMP wells during the Fourth Quarter 2014 sampling event for analysis of:

- California Code of Regulations Title 22 metals analyses, which includes arsenic at six alluvial wells (MW-10, MW-12, MW-26, MW-44-115, MW-50-200, and MW-51).
- Arsenic from a subset of wells screened in fluvial sediments, as directed by DTSC in the Corrective Measures Study review comment No. 186 (DTSC, 2009b).
- Arsenic from bedrock monitoring wells.
- Contaminants of potential concern (COPCs), including molybdenum, nitrate/nitrite as nitrogen (referred to as nitrate hereafter), selenium, and potential in situ byproducts (manganese, iron, and arsenic) from a subset of wells (DTSC, 2010c, 2011, 2014).
- As part of baseline sampling in support of the groundwater remedy, select monitoring wells were analyzed for additional non-routine parameters during the Fourth Quarter 2014 monitoring event. Sample analysis included chloride, sulfate, bromide, calcium, magnesium, potassium, sodium, boron, alkalinity, TDS, and stable isotopes $\delta^{18}O$ and $\delta^{2}H$.

2.1.3 Well Maintenance

PG&E performs quarterly inspections and takes corrective actions as necessary to ensure that the monitoring wells are in good working condition (DTSC, 2013; CH2M HILL, 2005a-b). Table A-2 in Appendix A summarizes the quarterly inspection log, field observations, and mitigation actions, if any, for well maintenance.

2.1.4 Well Sampling Method Trial at Well Clusters MW-38 and MW-40

In conformance with the June 27, 2014 direction email from DTSC, PG&E conducted trial sampling at MW-38S, MW-38D, MW-40S, and MW-40D. At MW-38S and MW-38D both micropurge and three volume purge samples are being collected for comparison. At MW-40S and MW-40D, both HydraSleeve and three-volume purge samples are being collected for comparison.

2.2 Surface Water Monitoring Program

Quarterly surface water sampling was conducted on November 19 and 20, 2014 from the RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH. Samples were also analyzed for COPCs (molybdenum, nitrate, and selenium); in situ byproducts (manganese, iron, and arsenic); and geochemical indicator parameters (barium and total suspended solids) to develop baseline concentrations for future remedy performance evaluations.

2.3 Performance Monitoring Program

Groundwater samples for the PMP were collected during the GMP sampling event. In addition, PMP pressure transducers, which monitor hydraulic gradients of the Alluvial Aquifer, were downloaded in the first week of every month (November and December). The transducers in the key monitoring wells (MW-27-085, MW-31-125, MW-33-150, MW-34-100, and MW-45-095a; Figure 1-4) are also downloaded via a cellular telemetry system.

3.0 Results for Site-wide Groundwater Monitoring and Surface Water Sampling

This section presents the analytical results for groundwater and surface water monitoring conducted during Fourth Quarter 2014. In addition, this section summarizes the site-wide groundwater and surface water sample results for the 2014 annual reporting period.

As presented in Section 1.2, the groundwater sampling well purging method was switched from the three-volume method to the micropurge sampling method at six wells in Third Quarter 2014. In Fourth Quarter 2014, 98 wells (excluding slant wells and open boreholes[1]) were sampled using the micropurge sampling method. Sample results from purging with the traditional three-volume purge method are indicated in Tables 3-1 and 3-2a with a "3V" in the sample method column, and sample results from purging with the new micropurge method are indicated with a "MP" in the sample method column. There are insufficient data (two samples or fewer) to evaluate whether there are any significant differences between these two purge methods at this time. However, these initial micropurge results generally appear to be comparable to the sample results obtained from the previous three-volume purge sampling method; therefore, only limited discussion of the results for both methods are discussed in the chromium results section. A more thorough evaluation of the comparability of samples obtained using these two sampling methods will be conducted in the 2015 annual report.

3.1 Groundwater Results for Cr(VI) and Chromium

3.1.1 Fourth Quarter Groundwater Results for Cr(VI) and Chromium

Table 3-1 presents the September 2013 through December 2014 groundwater sample results, including Cr(VI), chromium, specific conductance, field-measured ORP, and field-measured pH. During Fourth Quarter 2014, the maximum detected Cr(VI) concentration was 30,000 micrograms per liter (µg/L) at well MW-68-180. The laboratory reports for samples analyzed during Fourth Quarter 2014 are provided in Appendix B.

Figures 3-1a through 3-1c present the Cr(VI) results for wells monitoring the shallow (upper-depth interval), mid-depth (middle-depth interval), and deep (lower-depth interval) wells of the Alluvial Aquifer and bedrock, respectively, from the Fourth Quarter 2014 sampling event. Figures 3-1a through 3-1c also show the approximate outlines of Cr(VI) concentration contours greater than 32 µg/L for the Alluvial Aquifer and bedrock. The value of 32 µg/L is based on the calculated natural background upper tolerance limit (UTL) for Cr(VI) in groundwater from the background study (CH2M HILL, 2009a).

3.1.2 Annual Evaluation of Groundwater Results for Cr(VI) and Chromium

Table 3-1 presents the results for Cr(VI), chromium, specific conductance, field-measured ORP, and field-measured pH in groundwater samples collected from September 2013 to December 2014. Cr(VI) concentration trend graphs for GMP monitoring wells are presented in Appendix C, Figures C-1 through C-19. Sample results for three-volume and micropurge sampling methods are shown with different symbols on the trend graphs for visual comparison. This section presents observed results for wells that are not evaluated for the PMP.

As noted previously, micropurge sample collection was initiated in Third Quarter 2014 and continued through Fourth Quarter 2014. There are insufficient data (two samples or fewer) to estimate differences between the two sampling methods at this time. As a preliminary screening tool for comparing the recent micropurge results to previous three-volume purge results, the relative percent difference (RPD) was

[1] The following wells were previously being sampled via micropurge methods: slant wells MW-52S, MW-52M, MW-52D, MW-53M, MW-53D, MW-56S, MW-56M, MW-56D, since installation; and bedrock wells MW-58BR, and MW-64BR as approved by DTSC in 2014. This total also does not include the trial micropurge samples collected from MW-38S and MW-38D.

calculated using the Fourth Quarter 2014 sample results and the previous minimum and maximum results reported for these wells using the three-volume purge sampling method. Samples with an RPD of more than 20 percent from the previous minimum or maximum Cr(VI) result are discussed below. The Topock Quality Assurance Project Plan uses a similar criterion of 20-percent RPD for evaluating the agreement of laboratory results from field duplicate samples (CH2M HILL, 2012a). The trends of Fourth Quarter 2014 wells with sample results showing RPD changes of more than 20 percent from historical data were further evaluated to assess whether these changes may be due to changing sampling methods or whether there are other possible explanations. The results of the 20-percent RPD analysis are summarized as follows:

- Results for all wells, including those sampled using micropurge sampling methods, were below or within 20 percent of their maximum historical value, with the exception of three wells (MW-42-30, MW-42-55, and MW-49-135) with low concentrations ranging from 0.35 to 2.3 µg/L.
- The micropurge-sampled monitoring wells reporting the lowest Cr(VI) concentrations in their history in December 2014 were MW-10, MW-24B, MW-25, MW-37D, and MW-67-260. The concentrations in these wells were at least 20 percent lower than the previous historical low for each well.

The concentrations at MW-10 (Figure C-1), MW-25 (Figure C-3), and MW-37D (Figure C-8) were trending downwards before micropurge sample collection in Fourth Quarter 2014, so the sample method may not be the primary reason the low results were reported for these locations. MW-24B is located in the vicinity of the upland in situ pilot test where MW-24A showed complete Cr(VI) treatment, so it is likely that treated groundwater has moved to the vicinity of this well (ARCADIS, 2014). Concentrations at MW-67-260 were previously steady at approximately 2,000 µg/L since sample collection began in June 2011 using three-volume purge methods (Figure C-16). The December 2014 result of 740 µg/L is the lowest Cr(VI) result to date for this well.

Other micropurge-sampled wells showing noticeably low Cr(VI) results in Fourth Quarter 2014 that were within 20 percent of historical ranges include MW-33-150 (Figure C-5) and MW-35-135 (Figure C-6). Additional data will need to be collected to evaluate whether these results are related to using the micropurge sampling method.

A review of the GMP Cr(VI) concentration trend plots (Figures C-1 through C-19 and Table 3-1) reveals the following observed Cr(VI) trends since IM groundwater extraction began in 2004:

- Concentrations have been declining at MW-14 since 2010.
- Concentrations have been stable since 2010 at MW-18 (following a decline between 2007 and 2010).
- Concentrations at the shallow alluvial well MW-25 have steadily decreased, with the lowest concentration to date reported in December 2014 (Figure C-3).
- Concentrations at MW-26 and the MW-31 cluster initially decreased but generally have been stable since 2009.
- Overall concentrations have decreased in MW-37D (Figure C-8).
- Concentrations are stabilizing in MW-40D since fourth quarter 2010 (after an upward trend from 2004 through 2010) (Figure C-9).
- Concentrations in well MW-50-095 continue to slowly decline.
- Concentrations in well MW-50-200 are generally decreasing since reaching a maximum concentration of over 12,000 µg/L in 2007.
- Concentrations at bedrock well MW-62-110 have been fluctuating but overall are increasing (Figure C-14).
- Concentrations at the MW-65 cluster have been stable or decreasing since 2013 (Figure C-15).

- Cr(VI) concentrations at MW-66-165 and MW-66BR-270 have been stable since well cluster installation in 2011, while concentrations at MW-66-230 increased between 2011 and 2013 and have been fluctuating since that time (Figure C-16).
- Concentrations at the MW-67 cluster increased in 2011 during initial sampling events but generally have been stable since January 2012 (Figure C-16). The December 2014 concentration in MW-67-260 was the lowest concentration to date for this well cluster.
- Concentrations at MW-68-180 fluctuate seasonally, (high in fall/winter and low in spring) and have recently been the highest of any well at the site (Figure C-16).
- Concentrations at MW-68-240 have been generally stable since 2012 (Figure C-16). Concentrations at MW-68BR-280 have been nondetect since the well was installed.
- Concentrations at bedrock well MW-69-195 were increasing from 2011 through early 2013 but have generally been stable since 2013 (Figure C-17).
- Concentrations at bedrock wells MW-70-105 and MW-70-225 were fluctuating but stable since 2013.
- Analytical results for seven of the eight Arizona wells were nondetect for Cr(VI) and chromium, with low concentrations reported for MW-55-120 at 7.5 µg/L and 7.2 µg/L, respectively. The MW-55-120 results are consistent with regional background concentrations for the Arizona wells in this area. Naturally occurring chromium concentrations as high as 19.2 µg/L have been reported for the HNWR-1 supply well on the Arizona side of the Colorado River (CH2M HILL, 2014a), and in the vicinity of MW-55-120; naturally occurring chromium concentrations over 14 µg/L have been reported for well Topock-2 (CH2M HILL, 2008). The current chromium concentration at MW-55-120 (7.2 µg/L) is well below the federal drinking water standard (maximum contaminant level [MCL]) of 100 µg/L and Arizona's Aquifer Water Quality Standard of 50 µg/L. Chromium concentrations at MW-55-120 slowly increased from September 2008 (1.17 µg/L) through November 2013 (7.39 µg/L), but it appears that concentrations are beginning to stabilize in recent monitoring events. From December 2009 through December 2014, chromium concentrations ranged from 6.09 µg/L to 7.59 µg/L. A possible explanation for the apparent increasing chromium and Cr(VI) trends at MW-55-120 is that geochemical conditions near the well screen have slowly returned to equilibrium conditions with the aquifer since initial well installation disturbance.
- The Park Moabi water production wells, Park Moabi-3 and Park Moabi-4, had detections of 9.2 and 18.0 µg/L for Cr(VI) and 8.6 and 16.0 µg/L for chromium, respectively, in December 2014. Although the Cr(VI) detection for Park Moabi-4 was above the California MCL of 10 µg/L, it is well below the regional background concentration of 32 µg/L and is consistent with previous results. The chromium detections were also well below the California drinking water standard of 50 µg/L for chromium (California Code of Regulations Title 22, Division 4, Chapter 15) and consistent with regional background concentrations and previous results. The chromium results are from filtered analyses, and an unfiltered sample set will be collected from PM-03 and PM-04 and reported with the First Quarter 2015 GMP. The wellheads at PM-03 and PM-04 were modified in December 2014 to accommodate the Park's addition of a chlorination system. Water from a new sample tap was highly oxidized and no sample was analyzed since that tap was downstream of the new chlorination system. At the December 23 sampling visit, a second sample tap at each well was verified to be upstream of the chlorine addition and used for sampling, however the sample collected was submitted for Method SW6020a instead of EPA 200.8 (unfiltered drinking water analysis).

3.2 Other Groundwater Monitoring Results

Table 3-2a presents the COPCs (molybdenum, nitrate, and selenium), in situ byproducts (arsenic and manganese), and other analytes sampling results for groundwater monitoring well samples collected in 2014. The Fourth Quarter 2014 data presented in Table 3-2a are summarized in Table 3-2b.

3.2.1 Contaminants of Potential Concern and In Situ Byproducts

Figures 3-2a through 3-2e present the molybdenum, nitrate (as N), selenium, arsenic, and manganese results for Fourth Quarter 2014, respectively. Results were compared to the background UTLs calculated and reported in the *Revised Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2* (CH2M HILL, 2009a), and MCLs where available. Background UTLs were only calculated for regional alluvial wells during the background study, so these background UTLs may not be appropriate for bedrock wells. Concentration trend graphs for molybdenum, nitrate (as N), and selenium are presented in Appendix C. The sample results for three-volume and micropurge sampling methods are differentiated on these trend graphs for comparison but are not discussed in the following subsections.

Molybdenum. The concentrations and distribution of dissolved molybdenum for Fourth Quarter 2014 are shown on Figure 3-2a. Results for 43 of the 110 wells sampled for molybdenum were above the calculated background UTL for molybdenum (36.3 µg/L). Molybdenum has no California or federal MCL. The maximum molybdenum result was collected from MW-33-040 with a result of 370 µg/L, which is above the typical range of molybdenum for this well.

Nitrate as Nitrogen. Nitrate samples were analyzed using USEPA Method 353.2, except for TW-3D and PE-1, which were analyzed using USEPA Method 300.0. USEPA Method 353.2 reports a combination of nitrate and nitrite as Nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as Nitrogen is expected to be negligible; therefore, sample results for USEPA Method 353.2 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as Nitrogen. The concentrations and distribution of nitrate as Nitrogen for Fourth Quarter 2014 are shown on Figure 3-2b.

Results for 19 of the 86 wells sampled were above the calculated background UTL of 5.03 milligrams per liter (mg/L) for nitrate. Results for 12 of these 19 wells exceeded the MCL of 10.0 µg/L. The maximum concentration of nitrate was 51 mg/L at MW-67-185. .

Selenium. The concentrations and distribution of selenium for Fourth Quarter 2014 are shown on Figure 3-2c. Results for 18 of 110 wells sampled were above the calculated background UTL for selenium of 10.3 µg/L, including six nondetections with reporting limits above 10.3. Three wells (MW-26, MW-67-185, and MW-67-225) exceeded the MCL of 50 µg/L for selenium. The maximum result was from MW-67-185, at 250 µg/L.

In Situ Byproducts. The distribution of arsenic from Fourth Quarter 2014 is shown on Figure 3-2d and is discussed further in Section 3.2.2. The distribution of manganese from Fourth Quarter 2014 is shown on Figure 3-2e.

Results for in situ byproduct sampling and geochemical indicator parameters are presented in Tables 3-2a-b and in Table D-1 in Appendix D. An evaluation of in situ byproduct sample results for floodplain wells with additional geochemical parameters collected for PMP performance monitoring is presented in Section 5.3.2.

3.2.2 Arsenic Sampling in Monitoring Wells

Eighty-three fluvial/alluvial and 23 bedrock wells were sampled for arsenic in Fourth Quarter 2014. The results are summarized in Table 3-2b and depicted on Figure 3-2d. Highlights of these results are:

- Ten of the 83 fluvial/alluvial samples had arsenic concentrations greater than the California MCL of 10 µg/L. The maximum concentration was detected in MW-12 at 40.0 µg/L.
- Three of the 23 bedrock samples had arsenic concentrations slightly above the California MCL of 10 µg/L: MW-57-185 at 12.0 µg/L, MW-72-80 at 12.0, and MW-72BR-200 at 16.0 µg/L.

3.2.3 Title 22 Metals

Table 3-3 presents the Title 22 metals results for the GMP monitoring wells (MW-10, MW-12, MW-22, MW-26, MW-44-115, MW-50-200, and MW-51) sampled during Fourth Quarter 2014 or previous 2014 monitoring events. The concentrations of Title 22 metals detected in these monitoring wells remained

generally stable overall during the 2014 monitoring period. The dissolved concentrations of the trace metals detected—other than chromium, arsenic, and selenium—are below the respective federal and California MCL drinking water standards.

3.2.4 Laboratory Specific Conductance Results

In conformance with DTSC's directive in 2007 (DTSC, 2007c), PG&E has continued to collect samples for laboratory analysis of specific conductance. Laboratory specific conductance results for the 2014 reporting period are presented in Table 3-1. The salient trend in specific conductance results is a correlation of lower specific conductance over time at floodplain wells that also show an increasing river water isotopic signature. This is interpreted to indicate that IM-3 pumping is drawing river water into the floodplain groundwater (see Section 5.3.2). For wells adjacent to the Colorado River, a greater influence of river water can be seen during the summer months when there are high river levels.

3.2.5 Water Level Monitoring

Table D-2 in Appendix D presents the manual water level measurements collected during the 2014 reporting period. Table D-2 also lists salinity data for the wells where water levels were measured. Groundwater salinity during Fourth Quarter 2014 ranged from 0.06 percent (MW-27-20 and MW-27-60) to 3.0 percent (well MW-32-020)—a range that is consistent with results of prior monitoring. Due to the variation in groundwater salinity at the site, the groundwater elevations measured in the monitoring wells have been adjusted (normalized) to an equivalent freshwater head (Fetter, 1994).

Beginning in June 2005, at DTSC's direction (DTSC, 2005c), a site-wide water level data set has been collected quarterly as part of the GMP to prepare a groundwater elevation contour map for the shallow zone (upper-depth interval) of the Alluvial Aquifer. That requirement was changed to annually in the September 28, 2007, letter from DTSC (DTSC, 2007c).

Figure 3-3 presents the groundwater elevation contours for the shallow-depth interval of the Alluvial Aquifer. A site-wide water level survey was conducted on November 3, 2014, involving the manual collection of groundwater level data at 26 shallow wells within approximately a 1-hour period. Because groundwater levels at the site fluctuate continuously in response to changes in the river stage, these groundwater elevation contours reflect transient conditions at the time of measurement and may not be representative of the average groundwater flow directions.

3.2.6 Field Parameter Data

A field water-quality meter and flow-through cell were used to measure parameters during well purging and groundwater sampling (CH2M HILL, 2005b). Water quality field measurements were also recorded during surface water sampling. Table D-3 summarizes the field water quality data collected (specific conductance, temperature, pH, ORP, and dissolved oxygen) from January 2014 through December 2014.

3.2.7 Additional Water Quality Characterization

Additional analytes including selected anions, cations, and dissolved metals, and $\delta^{18}O$ and $\delta^{2}H$, were collected from selected wells to assist in future remedy performance evaluation. These data are presented in Table D-4.

3.2.8 Trial Results at MW-38 Cluster and MW-40 Cluster

As stated previously, in conformance with the June 27, 2014 direction email from DTSC, PG&E conducted trial sampling at MW-38S, MW-38D, MW-40S, and MW-40D. At MW-38S and MW-38D, both micropurge and three-volume purge samples were collected for comparison. At MW-40S and MW-40D, both HydraSleeve and three-volume purge samples were collected for comparison. These data are presented in Table D-5 and are discussed in Section 7. The comparison study is expected to continue through 2015 to develop enough data points to make recommendations for the preferred sampling method(s) at these wells.

3.3 Surface Water Results for Cr(VI) and Chromium

Table 3-4 presents results of Cr(VI), chromium, specific conductance, and lab pH from the Fourth Quarter 2014 surface water monitoring event and the 2014 reporting period. During the 2014 reporting period, Cr(VI) and chromium were not detected above reporting limits at in-channel, shoreline, or other surface water monitoring locations. Table 3-5 presents results for the COPCs (molybdenum, nitrate as Nitrogen, and selenium), in situ byproducts (manganese, iron, and arsenic), and other geochemical indicator parameters.

3.4 Data Validation and Completeness

Laboratory (lab) analytical data from the Fourth Quarter 2014 sampling events were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements.

The following bullets summarize the notable analytical qualifications in data reported this quarter:

- Forty-two Cr(VI) (USEPA Method 218.6) results exhibited a matrix interference issue that required a dilution to achieve satisfactory matrix spike recovery, resulting in an elevated reporting limit. No flags were applied.
- Eight samples were associated with matrix spike recoveries that were outside the control limits and were qualified: MW-12 for dissolved iron, dissolved copper, and dissolved manganese; MW-20-130 (and the associated field duplicate) for dissolved manganese; MW-34-100 (and the associated field duplicate) for dissolved manganese and for Nitrate/Nitrite; MW-51 for dissolved iron; R63 for total iron; and TW-03D for dissolved manganese. (Iron and sodium were analyzed by USEPA Method SW6010B; copper and manganese were analyzed by USEPA Methods SW6020A and EPA200.8; and Nitrate/Nitrite were analyzed by Standard Methods SM4500-NO3F). The associated sample results were qualified as estimated and flagged “J”.
- The serial dilution for sample MW-68-240 for dissolved sodium had recoveries outside the control limits. The associated sample result was qualified as estimated and flagged “J”.
- Two field duplicate pairs had a RPD greater than the upper control limit of 20 percent for dissolved manganese (Method USEPA 6020), and one field duplicate pair had a RPD greater than the upper control limit for Cr(VI) (Method USEPA 218.6). The results were qualified as estimated and flagged “J”.
- Based on the March 2007 USEPA ruling and reaffirmed in the May 2012 USEPA ruling, pH has a 15-minute holding time. As a result, all samples analyzed in a certified lab by Method SM4500-HB (pH) are analyzed outside the USEPA-recommended holding time. Therefore, the pH results for the Fourth Quarter 2014 sampling events analyzed in a certified lab were qualified as estimated and flagged “J”.
- One alkalinity (Method SM2320B) sample was analyzed outside the USEPA-recommended holding time; the results were qualified and flagged “J”.
- One sample of a field duplicate pair for alkalinity (Method SM2320B) did not match historical data (nondetect at a laboratory reporting limit of 5 mg/L compared to a historical value of approximately 35 mg/L) and had a RPD greater than the upper control limit (139 percent compared to 20 percent). The nondetect may have been caused by a lab or field error but was not identified in time to re-analyze. The result was qualified as rejected and flagged “R”.

No other significant analytical deficiencies were identified in the Fourth Quarter 2014 data. Additional details are provided in the data validation reports, which are kept in the project file and are available upon request.

In addition, PG&E identified no “suspect” detections of Cr(VI) in surface water samples or any other “suspect” samples requiring reanalysis at the laboratory; therefore, in conformance with the agencies’

April 4, 2014 direction letter, no notifications were made to DTSC and the United States Department of the Interior.

3.5 Summary of 2014 Grounding Monitoring Program and Surface Water Monitoring Program Results

During 2014, quarterly (including semiannual and biennial events, hereafter referred as “quarterly”) events occurred in February-March, April-May, September-October, and November-December, with selected samples collected outside of these periods due to field logistical issues. Quarterly events in April-May and September-October were timed to occur before and after Southwestern willow flycatcher nesting season to minimize biological impacts to potential nesting habitat from the field activities during these larger-scale sampling events.

Key observations and data trends for this quarter and previous periods include the following:

- Chromium concentrations in many GMP monitoring wells near the floodplain and active extraction wells are stable or declining, with fluctuating concentrations present at some locations.
- Concentrations in several of the East Ravine/Topock Compressor Station wells are generally fluctuating or stable with a few exceptions. Concentrations at bedrock well MW-62-110 have been fluctuating but overall are increasing. Concentrations at MW-68-180 fluctuate seasonally, (high in fall/winter and low in spring) and have recently been the highest of any well at the site (Figure C-16).
- During the 2014 reporting period, Cr(VI) and chromium were not detected above reporting limits at any in-channel, shoreline, or other surface water monitoring locations.
- The COPCs carried forward from the RCRA Facility Investigation Volume 2, Addendum and Corrective Measures Study/Feasibility Study (molybdenum, selenium, and nitrate) continue to be detected in a subset of monitoring wells above their background UTLs (CH2M HILL, 2009a-c).
- Arsenic concentrations in 13 of the 106 fluvial/alluvial and bedrock well samples exceeded the California MCL (10 µg/L).

4.0 Fourth Quarter Interim Measures Performance Monitoring Program Evaluation

This section presents the quarterly PMP evaluation summary.

4.1 Water Quality Results for Performance Monitoring Program Floodplain Wells

Table F-1 in Appendix F presents the results of general chemistry and stable isotope analyses for 15 PMP monitoring wells and two river stations during sampling events from March 2005 through December 2014. In July 2008, DTSC approved modifications to the PMP general chemistry and stable isotope monitoring program (DTSC, 2008b). With those modifications, nine monitoring wells and one river station are now sampled for IM chemical performance monitoring. Figure 1-4 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Water samples from the selected performance monitoring locations are analyzed for general chemistry parameters, including TDS, chloride, sulfate, nitrate, bromide, calcium, potassium, magnesium, sodium, boron, alkalinity, δ^2H, and δ^{18}O to monitor the effects of IM pumping on groundwater chemistry. Section 5.3.2.2 of this report provides an evaluation of the general chemistry groundwater data for the floodplain area.

4.2 Cr(VI) Distribution and Trends in Performance Monitoring Program Wells

The Fourth Quarter 2014 distribution of Cr(VI) in the upper (shallow wells), middle (mid-depth wells), and lower (deep wells) intervals of the Alluvial Aquifer is shown in plan view and cross-section view on Figure 4-1.[2] Figure 4-2 presents the Fourth Quarter 2014 Cr(VI) results for Cross-section B, oriented parallel to the Colorado River. The location of Cross-section B is shown on Figure 1-4.

Appendix C includes Cr(VI) concentration trend graphs for selected monitoring well clusters through December 2014. Sample results for the 2014 reporting period are presented in Table 3-1. An evaluation of chromium trends in PMP wells is presented in the annual performance evaluation in Section 5.3.

4.3 Performance Monitoring Program Contingency Plan Cr(VI) Monitoring

The Topock Interim Measures Contingency Plan (IMCP) was developed to detect and control any possible migration of the Cr(VI) plume toward the Colorado River. Currently, the IMCP consists of 24 wells. Appendix C includes Cr(VI) concentration trend graphs for the IMCP wells. The IMCP well Cr(VI) results in the fourth quarter and throughout 2014 were all below their trigger levels.

4.4 Extraction Systems Operations

Pumping data for the IM-3 groundwater extraction system for the Fourth Quarter 2014 reporting period of November 1 through December 31 are presented in Table 4-1. From November 1, 2014 through December 31, 2014, the volume of groundwater extracted and treated by the IM-3 system was 11,653,156 gallons. An

[2] On Figures 4-1 and 4-2, the Cr(VI) concentrations are color-coded based on the groundwater background Cr(VI) concentration, which is 32 µg/L (CH2M HILL, 2009a). The 20 µg/L and 50 µg/L Cr(VI) concentration contours presented on Figures 4-1 and 4-2 are shown in accordance with DTSC's 2005 IM directive and are not based on the background Cr(VI) concentration for groundwater.

estimated 85.5 pounds (38.8 kilograms) of chromium were removed from the aquifer between October 1, 2014 and December 31, 2014.[3]

During Fourth Quarter 2014, extraction wells TW-3D and PE-1 operated at a combined pumping rate of 132.7 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates were 132.1 gpm (November 2014) and 133.2 gpm (December 2014) during the reporting period. Extraction well TW-2D was operated briefly during December 2014. The operational run-time percentage for the IM extraction system was 98.1 percent during this reporting period. The operations log for the extraction system during Fourth Quarter 2014, including planned and unplanned downtime, is included in Appendix G.

The concentrate (that is, saline water) from the reverse osmosis system was shipped offsite as a nonhazardous waste and was transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Four containers of solids from the IM-3 facility were disposed of at the U.S. Ecology Chemical Waste Management facility in Beatty, Nevada during Fourth Quarter 2014. Daily IM-3 inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

4.5 Hydraulic Gradient and River Levels during Quarterly Period

During the reporting period, water levels were recorded at intervals of 30 minutes with pressure transducers in 56 wells (excluding five Arizona locations) and two river monitoring stations (I-3 and RRB). The data are typically continuous, with only short interruptions for sampling or maintenance. The locations of the wells monitored are shown on Figure 1-4.

Daily average groundwater and river elevations calculated from the pressure transducer data for the Fourth Quarter 2014 reporting period are summarized in Table E-1 in Appendix E. Groundwater elevations (or hydraulic heads) are adjusted for temperature and salinity differences between wells (that is, adjusted to a common freshwater equivalent), as described in the PMP. Groundwater elevation hydrographs for the PMP wells during the Fourth Quarter 2014 reporting period are included in Appendix E. The elevation of the Colorado River measured at the I-3 gauge station (location shown on Figure 1-4) is also shown on the hydrographs in Appendix E.

Average Fourth Quarter 2014 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view on Figures 4-3a through 4-3c. Average groundwater elevations for wells on floodplain Cross-section A are presented and contoured on Figure 4-4. Several monitoring wells are significantly deeper than other wells in the lower depth interval. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells. Consequently, some wells with screen intervals significantly deeper than most of the lower-interval wells exhibit water levels that are not contoured in the plan view on Figure 4-3c.

For the Fourth Quarter 2014 reporting period, transducer data were recorded in wells located on the Arizona side of the Colorado River. The quarterly average groundwater elevations for wells MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are presented on Figure 4-3c, if available, and are used for contouring, where appropriate. With the exception of well MW-55-45, the wells in the MW-54 and MW-55 clusters are screened in the deep interval of the Alluvial Aquifer. Well MW-55-45 is screened over the boundary between the shallow and middle intervals.

[3] On July 23, 2010, DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from October 1, 2014 through December 31, 2014; this IM-3 sample collection period is in line with previous reports prior to combining the GMP with the PMP reports. The PMP/GMP reporting schedule uses July through October as third quarter and November through December as fourth quarter due to sampling event timing; these reporting periods differ from IM-3.

Deep-zone water levels shown on Figure 4-3c indicate that potentiometric levels in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This means that the hydraulic gradient on the Arizona side of the river is directed to the west and, as a result, groundwater flow would also be toward the west in that area. This is consistent with the site conceptual model and with the current numerical groundwater flow model.

Hydraulic gradients were measured during the Fourth Quarter 2014 reporting period for well pairs selected for performance monitoring of the two pumping centers (TW-3D and PE-1). The following well pairs were approved by DTSC on October 12, 2007 (DTSC, 2007a) to define the gradients induced while pumping from two locations:

- MW-31-135 and MW-33-150 (northern gradient pair)
- MW-45-95 and MW-34-100 (central gradient pair)
- MW-45-95 and MW-27-85 (southern gradient pair)

Table 4-2 presents the average monthly hydraulic gradients that were measured between the gradient well pairs in November and December 2014. Strong landward gradients were measured each month. The overall average gradients for all well pairs ranged from 0.0055 to 0.0056 foot per foot (ft/ft). This is 5.5 to 5.6 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 2.0 to 2.1 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 10.4 to 10.6 times the target gradient. The southern well pair gradients ranged from 4.0 to 4.1 times the target gradient. Graphs of the hydraulic gradients, monthly average pumping rates, and river levels for the quarterly period are presented in the annual performance evaluation in Section 5.2.

4.6 Projected River Levels during Next Quarter

The Colorado River stage near the Topock Compressor Station is measured at the I-3 location and is directly influenced by releases from Davis Dam and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the United States Bureau of Reclamation (USBR). Total releases from Davis Dam follow a predictable annual cycle, with largest monthly releases typically in spring and early summer and smallest monthly releases in late fall/winter (November and December). Superimposed on this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year.

Figure 4-5 shows the river stage measured at I-3 superimposed on the projected I-3 river levels. Projected river levels for future months are based on the USBR projections of Davis Dam discharge and Lake Havasu levels from the month preceding. For example, the projected river level for January 2015 is based on the December 2014 USBR projections of Davis Dam release and Lake Havasu level not the actual release and level values. The variability between measured and projected river levels is due to the difference between measured and actual Davis Dam release and Lake Havasu levels. The more recent data plotted on Figure 4-5 are summarized in Table 4-3. The future projections shown on Figure 4-5 are based on USBR long-range projections of Davis Dam releases and Lake Havasu levels from December 2014. There is more uncertainty in these projections at longer times in the future because water demand is based on various elements including climatic factors.

Current USBR projections, presented in Table 4-3, show that the average Davis Dam release for January 2015 (10,600 cubic feet per second) will be more than the actual release in December 2014 (7,235 cubic feet per second). Based on January 2015 USBR projections, it is anticipated that the Colorado River level at the I-3 gage location in January 2015 will be approximately 1.4 foot higher compared to the actual levels in December 2014. Current projections show that the water levels will increase through the next quarterly reporting period (January through March), further increasing to the maximum levels of the year in April 2015, as shown on Figure 4-5.

4.7 Quarterly Performance Monitoring Program Evaluation Summary

The groundwater elevation and hydraulic gradient data from November and December 2014 performance monitoring indicate that the minimum landward gradient target of 0.001 ft/ft was exceeded each month during the quarterly reporting period. The overall average landward gradients during Fourth Quarter 2014 were 5.5 to 5.6 times the required minimum magnitude, as shown in Table 4-2. The current gradient well pairs are adequate to define the capture of the Cr(VI) plume while pumping from extraction wells TW-3D and PE-1. Based on the hydraulic and monitoring data and evaluation presented in this report, the IM performance standard has been met for the Fourth Quarter 2014 reporting period.

A total of 11,653,156 gallons of groundwater was extracted from November through December 2014 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during Fourth Quarter 2014, including system downtime, was 132.7 gpm. An estimated 85.5 pounds (38.8 kilograms) of chromium were removed from groundwater during the period October 1 through December 31, 2014, as presented in Table 4-1.

The wells that are monitored to detect trends in Cr(VI) in the IM pumping area (for example, MW-36-100, MW-39-100, MW-44-115, MW-44-125, and MW-46-175) generally continue to show overall stable or declining Cr(VI) concentrations relative to prior monitoring results, as shown in Appendix C. Presentation and evaluation of the Cr(VI) trends observed in the performance monitoring area during the Fourth Quarter 2014 reporting period are discussed in Section 5.3.

5.0 Annual Performance Monitoring Program Evaluation

The section presents the annual PMP evaluation summary.

5.1 Extraction System Operations for Annual Reporting Period

5.1.1 Extraction Facilities and Operations

Pumping data for the IM-3 groundwater extraction system for the 2014 annual reporting period are presented in Table 5-1. Extraction wells TW-3D and PE-1 operated throughout the annual reporting period at the target pumping rate of 135 gpm, excluding periods of planned and unplanned downtime. During the annual reporting period, extraction well TW-2D was operated only for short-term support of the extraction system, for operations and maintenance, or for periodic groundwater sampling. Extraction well TW-2S was not operated during the 2014 reporting period; the Fourth Quarter 2014 sample was collected in January 2015 due to field logistical issues.

An estimated total of 67,598,015 gallons of groundwater were extracted from January 2014 through December 2014. Approximately 349 pounds (159 kilograms) of chromium were removed from the aquifer and treated at the IM-3 treatment plant over the 2014 annual reporting period, as shown in Table 4-1. The total mass of chromium removed by the IM-2 and IM-3 extraction systems during IM pumping from March 2004 through December 31, 2014, is approximately 8,150 pounds (3,700 kilograms). The average annual pumping rate during the 2014 reporting period was 128.6 gpm, with pumping mainly from extraction wells TW-3D and PE-1.

Figure 5-1 summarizes the monthly pumping rates, cumulative volumes extracted, and the percentage of time that the extraction system was in operation during the 2014 reporting period. This figure shows that pumping rates were relatively consistent month to month, with IM-3 running at close to maximum capacity. The consistent high pumping rates are corroborated by the high percentage of uptime for the IM extraction and treatment facilities throughout the year. The decrease in uptime during April 2014 was due to the planned annual treatment plant maintenance event. The decrease in August 2014 was due to the planned semiannual treatment plant maintenance.

5.1.2 Extracted Groundwater Quality and Trends

Extraction well TW-3D was brought online in late December 2005, and groundwater extraction at well PE-1 on the floodplain began on January 25, 2006; since this time, both wells have been operating continuously for the IM. Table 5-2 presents the analytical results for Cr(VI), chromium, TDS and field pH for extraction wells TW-3D and PE-1 during the 2014 reporting period.

The Cr(VI) and TDS concentration trends for TW-3D and PE-1 are plotted on Figure 5-2. During the 2014 reporting period, Cr(VI) concentrations in TW-3D decreased during the early months of the year (January through May) and then remained stable from June through December. During the reporting period, concentrations ranged from a maximum value of 905 µg/L in January 2014 to a minimum value of 601 µg/L in May 2014. TDS concentrations were stable.

The Cr(VI) concentrations in the extracted groundwater at well PE-1, located on the floodplain, ranged from 5.6 to 3.6 µg/L during the 2014 reporting period, as shown on Figure 5-2. TDS concentrations were stable.

5.2 Capture Zone Analysis for Annual Reporting Period

5.2.1 Monthly Average Gradients

Table 5-3 presents the hydraulic gradients measured between the selected gradient control well pairs during the period January 2014 through December 2014. The overall average gradient for well pairs exceeded the target landward gradient for each month in the reporting period. In addition, the IM target landward gradient criterion of 0.001 ft/ft was met each month at individual gradient control well pairs during the annual reporting period. While exceeding the performance standard each month the gradient was calculated, the northern well pair (MW-31-135/ MW-33-150) generally had the lowest measured gradients because it is not aligned along the gradient generated by pumping. The gradient measurements at the northern well pair underestimate the true gradient.

Figure 5-3 summarizes the overall average monthly hydraulic gradient, individual well pair gradients, and the river stage and average pumping rates during the 2014 reporting period. During the annual reporting period, the average daily river levels ranged from a high of 457.9 feet above mean sea level (March 2014) to a low of 452.25 feet above mean sea level (December 2014) (Table E-2). Strong overall average landward gradients were measured each month, even during the lower river stages observed in January and December 2014.

5.2.2 Annual Average Gradients

Groundwater contour maps presenting the annual average groundwater elevation data in the upper, mid-depth, and lower aquifer intervals are shown on Figures 5-4a through 5-4c for the 2014 reporting period. The Fourth Quarter 2014 Cr(VI) contours are also shown on the annual average gradient maps. The annual average groundwater elevation data are presented in floodplain Cross-section A on Figure 5-5. Table E-2 presents a listing of the annual average, minimum, and maximum groundwater elevations for the wells used for the 2014 performance monitoring evaluation.

The net annual landward gradients illustrated on the aquifer interval maps (Figures 5-4a through 5-4c) show that the gradients are landward and are comparable to the gradient maps prepared using previous monitoring data (CH2M HILL, 2012b-e, 2013a-d, 2014b-e).

5.2.3 Analysis and Evaluation of Capture Zone

The methodology and results of the capture zone evaluations for 2014 are summarized in the following subsections.

5.2.3.1 Well Group Gradient Averaging

The temporal variation in magnitude and direction of horizontal hydraulic gradients in the lower-depth aquifer interval was assessed using quarterly average water levels and triangulation with linear interpretation for two well groupings (MW-31-135/MW-33-150/MW-34-100 and MW-45-95/MW-34-100/ MW-27-85) in the IM performance area. Figure 5-6 shows the two well groupings and the calculated average gradients for all four quarterly monitoring periods in 2014.

This analysis shows that strong landward gradients were achieved during the 2014 monitoring period and that there was minimal variation in the magnitude and direction of the landward gradients during each quarter. These gradients are not the same as those calculated between the gradient control well pairs (Table 5-3) because they are calculated net gradients within the plane formed by each three-well group. Stronger landward gradients were calculated using the three-well method than those measured for the northern well pair MW-31-135/MW-33-150 (Table 5-3) due to a more optimally aligned gradient direction.

5.2.3.2 Particle Track Analysis

Particle tracking was conducted in 2006 to calculate the direction and distance that groundwater would likely flow using selected starting points in the floodplain under the dual well (TW-3D and PE-1) IM pumping system. At the time, TW-3D and PE-1 were pumping a combined annual average rate of 131.8 gpm. The

2006 annual IM performance evaluation report (CH2M HILL, 2007) contains the particle tracking figure and the methods, input parameters, and data used for this analysis.

A particle tracking analysis using 2014 data was not performed because the pumping locations have not changed, the combined pumping rates for 2014 are estimated to be essentially the same (128.6 gpm) as 2006, the river elevations were similar, and the gradients for the lower interval were comparable for the 2006 and 2014 annual periods.

5.3 Evaluation of Groundwater Quality Trend

5.3.1 Cr(VI) Distribution and Trends

Figure 4-1 presents the Fourth Quarter 2014 Cr(VI) concentration results in floodplain wells in the upper, mid-depth, and lower intervals of the Alluvial Aquifer. The Cr(VI) contours presented on this figure incorporate data from the most comprehensive sampling event of the year.

Figure 5-7 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through December 2014. Cr(VI) results are plotted for wells MW-34-100, MW-36-90, MW-36-100, MW-44-115, MW-44-125, and MW-46-175. The locations of the deep wells selected for performance evaluation are shown on Figure 1-4. Appendix C includes Cr(VI), molybdenum, nitrate, and selenium concentration trend graphs for selected monitoring well clusters through December 2014. Sample results for September 2013 through the 2014 reporting period are presented in Table 3-1.

Wells showing marked decreases in concentration are generally in the floodplain area where IM pumping is removing chromium in groundwater. Wells with historical detections near or at reporting limits remained at these levels during the fourth quarter 2014 period. A review of Figure 5-7 and Appendix C indicates that Cr(VI) concentrations have remained steady or have decreased in many wells since IM and PE-1 pumping began in 2004 and 2005, respectively.

Key Cr(VI) concentration trends for the PMP wells sampled during the 2014 reporting period include:

- Concentrations at the MW-20 cluster (located near the TW-3D pumping well) indicate generally decreasing concentrations at the shallow well MW-20-070 (since 2011), decreasing concentrations at MW-20-100 (since May 2007), and variable concentrations at MW-20-130 (Figure C-3).
- As shown on Figure 5-7 and Figure C-6, well MW-34-100 has shown a seasonally fluctuating trend in Cr(VI) concentration over the past 6 to 7 years. However, since June 2006, concentrations at this well have shown a general downward trend. Landward gradients have been present at this location since IM pumping began; therefore, the seasonal fluctuations in concentration observed at MW-34-100 do not indicate movement of the plume toward the river.
- Deep well MW-36-100 Cr(VI) concentrations initially increased upon the startup of PE-01 pumping, began to decrease in 2007 and have remained less than 100 μg/L since late 2008, as shown on Figures 5-7 and C-7.
- Deep well MW-39-100 concentrations steadily declined since the start of IM pumping (Figure C-8).
- Deep well MW-44-115 has shown a downward trend since July 2006, as presented on Figures 5-7 and C-10. Well MW-44-125 has also shown an overall downward trend since November 2008, as presented on Figures 5-7 and C-10.
- Concentrations in deep well MW-46-175 have shown a seasonally fluctuating, but overall downward, trend since 2007, as presented on Figures 5-7 and C-11. The lowest concentration to date at this well was reported for September 2014.
- Well TW-04, a deeper well, has shown a declining trend since March 2007, as presented on Figure C-19.

5.3.2 Groundwater Geochemistry in Interim Measures Extraction Area

5.3.2.1 Oxidation-reduction Potential Evaluation

Figure 5-8 shows the concentrations and distributions of Cr(VI), ORP, nitrate as Nitrogen, manganese, iron, and arsenic from the Fourth Quarter 2014 sampling event. Arsenic and manganese samples were collected to establish baseline conditions of in situ byproducts that may be produced when the groundwater remedy is implemented. Figure 5-9 shows these same results on Cross-section A, which runs west-to-east along the floodplain. The distribution of these redox indicator parameters shown on Figures 5-8 and 5-9 is generally consistent to previous years. Reducing conditions are prevalent in wells completed near the Colorado River—where there is a higher level of organic material in the fluvial sediments—than wells located further from the Colorado River that are completed in alluvial sediments with a lower organic carbon content.

5.3.2.2 General Chemistry Evaluation

Table F-1 in Appendix F presents the results of the general chemistry and stable isotope analyses for 15 PMP monitoring wells and two river stations during sampling events from March 2005 through December 2014. In July 2008, DTSC approved modifications to the PMP IM chemical PMP (DTSC, 2008b). With those modifications, nine monitoring wells and one river station are now sampled for IM chemical performance monitoring.

Fifteen floodplain wells were sampled for chemical performance monitoring parameters over the period of March 2005 through January 2014. The majority of the field parameters in groundwater samples from these wells remained stable through the reporting period, as illustrated in Table 3-1 and Table D-4. Shallow-depth wells exhibit both increases and decreases in some of these same parameters over the reporting period, but in these cases, it is interpreted as natural variation because some values were similar to those measured in previous years.

5.3.2.3 Stable Isotope Evaluation

Analysis of the stable isotopes of oxygen ($\delta^{18}O$) and deuterium ($\delta^{2}H$) provide a method of tracking the mixing occurring in floodplain groundwater as a result of IM extraction.

Figure 5-10 shows the results of ($\delta^{18}O$) and ($\delta^{2}H$) in floodplain wells using data collected during the annual reporting period. The points that plot to the upper right in this plot are considered heavier in isotopic signature (that is, enriched in heavy isotopes), while the points that plot to the lower left are considered lighter in isotopic signature. In this plot, the lighter signatures are found in the river signature and some offsite fluvial wells samples, whereas the heaviest signatures are found in selected floodplain wells, which likely contain higher percentages of water that has flowed from the upland areas or has been affected by evaporation in the cooling towers.

The effects of IM pumping on the isotopic signature of floodplain wells have been presented in previous reports (CH2M HILL, 2014b). The percent river water signature was calculated by using composite statistics for ($\delta^{2}H$) isotope data from site river water samples (light fraction) and groundwater samples with greater than 3,000 µg/L Cr(VI) (heavy fraction; termed “industrial water”). As previously reported, it is evident that the isotopic signature in most industrial signature wells has progressed toward river water signature since IM pumping began. This is a result of the continuous landward gradient created by IM pumping and the resultant mixing of industrial water with river-influenced groundwater. These changes are most likely due to lateral and downward movement of shallow floodplain water, which has an isotopic signature similar to river water.

5.4 Conclusions and Status of Interim Measures Operations

5.4.1 Performance Evaluation

As of March 2014, the IM has operated full time for 11 years and has been successful in meeting the IM objectives and performance criteria. This section summarizes the conclusions of IM operations and performance monitoring for the 2014 reporting period.

5.4.1.1 Attainment of Performance Standard

Throughout 2014, the IM extraction system (combined wells TW-3D and PE-1) operated at the target pumping rate of 135 gpm, excluding periods of planned and unplanned downtime. The operational run-time percentage for the extraction system was 95.6 percent during the 2014 reporting period. The average pumping rate for the IM extraction system, including downtime, during the annual period was 128.6 gpm. The results and conclusions of the 2014 performance evaluation include:

- A total of 67,598,015 gallons of groundwater was extracted and treated at the IM-3 system during the annual reporting period. The IM system removed approximately 349 pounds (159 kilograms) of chromium from the aquifer during the annual reporting period.
- The IM pumping rate was sufficient to exceed the minimum overall average landward gradient throughout the 2014 annual reporting period. The strong landward gradients were maintained even during the period of lower river stages in January 2014 and December 2014.
- The current gradient well pairs are adequate to define the capture of the plume while pumping from extraction wells TW-3D and PE-1, although the northern pair particularly underestimates the gradient because it is aligned at an angle to the true gradient.
- The annual average hydraulic gradient monitoring data showed that floodplain monitoring wells where Cr(VI) was detected at greater than 20 μg/L were within the capture zone of the IM extraction system during the 2014 reporting period.

5.4.1.2 Cr(VI) Distribution and Trends

The key conclusions on Cr(VI) distribution and trends observed in the IM performance monitoring area during 2014 include:

- Overall, the groundwater Cr(VI) concentrations in the floodplain are stable or decreasing. The ongoing monitoring has shown marked decreases in Cr(VI) concentration in the floodplain areas where IM pumping exerts a strong influence on hydraulic gradients (for example, well clusters MW-36, MW-39, and MW-44).
- MW-34-100 has shown a seasonally fluctuating trend in Cr(VI) concentration over the past 6 to 7 years. However, since June 2006 concentrations at this well have shown a general downward trend. Landward gradients have been present at this location since IM pumping began; therefore, the seasonal fluctuations in concentration observed at MW-34-100 do not indicate any movement of the plume toward the river.
- The groundwater ORP and stable isotope data continue to confirm that continued IM extraction is drawing more oxidizing river-influenced groundwater into the performance monitoring area.

5.4.2 Status of Operations and Monitoring

Per DTSC direction, PG&E will continue to operate both TW-3D and PE-1 at a target combined pumping rate of 135 gpm, except for periods of planned and unplanned downtime. Treated groundwater will be discharged into the IM-3 injection wells in accordance with compliance requirements of the waste discharge applicable, relevant, and appropriate requirements, as documented in Attachment A to the Letter

Agreement issued July 26, 2011 (California Regional Water Quality Control Board, 2011). Saline water generated as a byproduct of the reverse osmosis process will continue to be transported offsite for treatment and disposal.

PG&E will balance the pumping rates between TW-3D and PE-1 to maintain the target pumping rate and maintain appropriate hydraulic gradients across the Alluvial Aquifer. If, at any time, hydraulic data indicate that PE-1 pumping has the potential to draw higher concentrations of chromium away from the capture zone of TW-3D, PG&E will request authorization from DTSC to increase the pumping rate at TW-3D and decrease the rate at PE-1. TW-2D will continue to serve as a backup extraction well to TW-3D and PE-1.

Current USBR projections show that the river levels will increase during the next quarterly reporting period (January through March 2015) through April and decline from April into the winter. By April 2015, the average monthly river elevations are projected to reach their maximum level of the year. The lowest river levels during the upcoming IM operations year are expected to occur in December 2015.

6.0 Upcoming Operation and Monitoring Events

Reporting of the IM extraction and monitoring activities will continue as described in the PMP and under direction from DTSC. Monitoring results, operations, and performance monitoring data will be reported in the First Quarter 2015 quarterly monitoring report, which will be submitted by April 30, 2015.

6.1 Groundwater Monitoring Program

6.1.1 Quarterly Monitoring

As described in the July 23, 2010, DTSC sampling schedule approval (DTSC, 2010a), the first quarter monitoring event occurred February 9 through February 19, 2015. This sampling event was conducted at 19 wells.

6.1.2 Monthly Monitoring

Monthly sampling of the two active extraction wells (TW-3D and PE-1) will continue to be performed during the first 2 weeks of each month. Results will be reported in the First Quarter 2015 monitoring report.

6.2 Surface Water Monitoring Program

The RMP low river event occurred January 14 and 15, 2015. The First Quarter 2015 surface water monitoring event was conducted February 24 and 25, 2015, at locations in the RMP monitoring network. Results will be reported in the First Quarter 2015 quarterly monitoring report.

6.3 Performance Monitoring Program

6.3.1 Extraction

Per DTSC direction, PG&E will continue to operate wells TW-3D and PE-1 at a target combined pumping rate of 135 gpm during First Quarter 2015, except for periods when planned and unplanned downtime occurs. Extracted groundwater treated at the IM-3 facility will be discharged into the IM-3 injection wells in accordance with compliance requirements of the waste discharge applicable, relevant, and appropriate requirements. Saline water and solids generated as byproducts of the treatment process will continue to be transported for offsite disposal.

PG&E will balance the pumping rates between wells TW-3D and PE-1 to maintain the target pumping rate and to maintain the DTSC-specified hydraulic gradients across the Alluvial Aquifer. Well TW-2D will serve as a backup to extraction wells TW-3D and PE-1.

6.3.2 Transducer Download

Downloads of the transducers in the key gradient control wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, and MW-45-095), and the MW-33 cluster will continue to be conducted via telemetry during First Quarter 2015. Downloads of the remainder of the transducers will occur during the first week of each month during First Quarter 2015.

7.0 Recommendations

This section presents the recommended modifications to the PMP and GMP.

7.1 Recommended Modifications to the Performance Monitoring Program

Chromium sample results for all wells have generally remained below their respective trigger levels since they were established in August 2006 and approved in July 2008 (CH2M HILL, 2006; DTSC, 2008b). Most wells greater than the IM performance standard of 20 µg/L for Cr(VI) show stable or decreasing trends (see Appendix C); therefore, no change in trigger levels is recommended at this time.

7.2 Recommended Modifications to Groundwater Monitoring Program Sampling Frequency and Analytical List

The following two sections clarify the sampling frequency at one well location and present a modified plan for non-chromium metals and water quality sampling.

7.2.1 Groundwater Monitoring Program Sampling Frequency Modifications

On June 27, 2014, the DTSC approved the revised GMP sampling frequencies recommended in the 2013 Annual Report with some modifications (DTSC, 2014). The approved sampling frequencies are shown in Table 7-1 with this report.

One clarification to the GMP sampling frequency is requested with this report for monitoring well MW-45-95a. Because of the proximity of this well to extraction well PE-1, which has a similar screen interval and is sampled monthly, no further GMP sampling from MW-45-95a is proposed.

7.2.2 Groundwater Monitoring Program Analytical Plan Modifications

With approval of sampling frequency modification on June 27, 2014, the DTSC also requested a revised sampling plan for non-chromium metals and water quality analyses. Table 7-1 shows the approved purge methods and sampling frequencies for several DTSC-approved sampling programs, as well as proposed sampling plans for other non-chromium analyses including the following columns from left to right:

- The “DTSC-approved purge method” shows the purge method approved in June 2014, consisting of either micropurge (limited drawdown) or three-volume purge. Additionally, some extraction or supply wells are sampled from taps and HydraSleeve samples are being collected from the MW-40 well location as described below.
- The “DTSC-approved Sampling Frequency” column shows the sampling frequency for analyses of Cr(VI), chromium, and specific conductivity approved in June 2014.
- Wells in the IMCP group are subject to notification requirements based on Cr(VI) trigger levels. The 2014 results for these wells are below trigger levels, and no changes are proposed.
- The IMCP monitoring program is shown next. There were originally 15 wells in the program before it was modified to include only 10 monitoring wells. The table notes list the analytes in this program, which include general chemistry and stable isotope analyses. No reductions to this monitoring program are proposed; however, analysis for ammonia will be added to this suite to aid geochemical evaluation of redox conditions, separate from IMCP requirements.
- The next two columns show sampling programs for COPCs (molybdenum, selenium and nitrate, with fluoride added at several floodplain wells) and for in situ reductive remediation byproducts (arsenic and

manganese). This monitoring program is proposed to continue as shown through 2015 for evaluation in the 2015 annual report.

The remaining columns of Table 7-1 show proposed modifications to the analytical program, proposed to begin with the annual sampling event in Fourth Quarter 2015:

- The analytical list for water quality monitoring is similar to the list for the previous IMCP, with the exception of stable isotopes, the cation boron, and the anion nitrate. This monitoring plan is proposed for annual or biennial sampling as noted, with ammonia added to aid in redox geochemical evaluation. This sampling list will be reevaluated based on 2015 results in the next annual report.
- Stable isotope analyses are used to measure the relative signatures of river water in groundwater and industrial water (containing chromium) in groundwater. Additional sampling locations are included beyond those required under the IMCP. The isotopic signature measured across the floodplain is stabilizing or equilibrating to the IM pumping over time, as discussed in Section 5.3.2.3, so the number and frequency of wells selected for stable isotope analyses beyond the IMCP will be reevaluated in each annual report.
- The proposed plan for Title 22 (T22) metals sampling is shown in the last column with angled headers. Title 22 metals were sampled at a set of 12 wells historically before a smaller set was sampled through 2013 after the DTSC approval of sampling modifications. A set of 26 monitoring wells is proposed for T22 sampling in the Fourth Quarter 2015 annual and biennial GMP sampling event. The wells listed fall into two groups:
  - Wells historically sampled for T22 or background study metals lists have one round of sampling proposed to update past trends and evaluate recommendations for continued sampling.
  - Wells newly proposed for T22 sampling are selected to provide areal coverage in the East Ravine area, compressor station area, or northern floodplain where historical T22 sampling was not performed, such as added well locations MW-35, MW-59, MW-67, MW-72 and MW-74, or to fill gaps in historical T22 metals sampling, such as at MW-14.

The upcoming semiannual Second Quarter 2015 GMP sampling event will continue to collect the chromium, IMCP, COPC, and byproduct analytical suites at the well locations shown in Table 7-1. Sampling for the proposed water quality, additional stable isotope, and T22 metals locations shown in Table 7-1 would begin with the Fourth Quarter 2015 annual/biennial GMP event, after DTSC review and approval of these plans.

7.3 Initial Results for Implementation of Alternative Groundwater Sampling Methods

The following sections discuss the sampling method trials at well clusters MW-38 and MW-40 and the initial micropurge results and recommendations for the program.

7.3.1 Field Groundwater Sampling Method Trial at MW-38 and MW-40 Well Clusters

As summarized in Table D-5, a groundwater sampling comparison study was initiated at MW-38S and MW-38D in the Fourth Quarter of 2014 collecting samples using the traditional three-volume purge sampling method and micropurge sample collection methods. This was done following the DTSC request made as a comment in the June 27, 2014 approval letter for sampling methods and frequency modifications. Wells MW-38S and MW-38D were repaired and redeveloped in 2013 to resume sampling, after being damaged by flood flow in Bat Cave Wash (CH2M HILL, 2011). The Fourth Quarter 2014 results for both sampling methods were comparable at each of these wells.

Similarly, a groundwater sampling comparison study was initiated at MW-40S and MW-40D in the Fourth Quarter of 2014 collecting samples using the micropurge sampling method and Hydrasleeve grab sample

collection method (Table D-5). This was done following DTSC's request, in a June 27, 2014 approval letter, to test grab sampling at these wells in the I-40 highway median. Results for both methods were comparable at the MW-40S well and also comparable to previous samples collected using the three-volume purge method (Table 3-1). At MW-40D, the Cr(VI) result for micropurge (160 µg/L) was more than double the result for the Hydrasleeve grab sample (73 µg/L). However, the micropurge result was comparable to previous results using the three-volume purge method (Table 3-1). Additional samples will be needed for evaluation of the grab sampling trial beyond these preliminary observations.

7.3.2 Initial Results for Site-wide Micropurge Groundwater Sampling Method

During the Fourth Quarter 2014 groundwater sampling event, 98 monitoring wells were sampled using the micropurge sampling method (excluding wells listed in Section 3.0). The sample results for the 98 wells were generally comparable to results previously reported using the three-volume purge method, with a few exceptions listed below. Note that the exceptions may not be related to the sample method but may be due to other natural factors. Monitoring wells sampled using micropurge sampling methods that reported the lowest Cr(VI) concentrations to date were MW-10, MW-24B, MW-25, MW-37D, and MW-67-260. The concentrations in these wells were at least 20 percent lower than the previous historical low for each well and are summarized below:

- The concentrations at MW-10 (Figure C-1), MW-25 (Figure C-3), and MW-37D (Figure C-8) were trending downwards before micropurge sample collection in Fourth Quarter 2014 so the sample method may not be the primary reason for the low results reported at these locations.
- MW-24B is located in the vicinity of the upland in-situ pilot test so it is likely that treated groundwater has moved to the vicinity of this well.
- Concentrations at MW-67-260 were previously steady at approximately 2,000 µg/L since sample collection began in June 2011 using three-volume purge methods (Figure C-16). The December 2014 result of 740 µg/L using the micropurge sampling represents a significant decrease.

Other wells sampled using micropurge methods showing noticeably low Cr(VI) results in Fourth Quarter 2014 that were within 20 percent of historical ranges include MW-33-150 (Figure C-5) and MW-35-135 (Figure C-6). Additional data will need to be collected to evaluate if these results are related to using the micropurge sampling method.

There are insufficient data (generally only one to two samples) to evaluate whether there are significant changes due to the first site-wide implementation of micropurge sample collection methods. It is recommended that additional micropurge data be collected to allow for meaningful comparisons between the micropurge and three-volume purge sampling methods.

7.3.3 Sampling Method Trial Recommendations

It is recommended that the sampling trial at MW-38S, MW-38D, MW-40S, and MW-40D be continued through 2015. Collection of micropurge and Hydrasleeve samples from MW-40S at the same semiannual frequency as MW-40D (more frequently than the approved annual frequency for MW-40S) during 2015 will help to obtain three data points for the 2015 annual reporting period so that a recommendation for a single future sample collection method can be made at each well.

It is recommended that sample collection using the micropurge sampling method at the approved monitoring locations continue to be conducted in 2015. A preliminary evaluation of the micropurge data and a comparison to previous three-volume purge results will be presented in the 2015 annual report.

8.0 References

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Tables

Table 1-1

Topock Monitoring Reporting Schedule
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Program	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Groundwater Monitoring Program	January - March	April - June	July - October	November - December
Surface Water Monitoring Program	January - March	April - June	July - October	November - December
Performance Monitoring Program	January - March	April - June	July - October	November - December
IM-3 Monitoring (Chromium removed)	January - February	March - May	June - September	October - December

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-9	SA	09-Dec-13	3V	240	236	2,600	31	7.5
		02-Dec-14	MP	210	210	2,700	-68	7.4
MW-10	SA	12-Dec-13	3V	380	367	2,500	-26	7.5
		14-May-14	3V	260	250	2,400	57	7.2
		14-May-14 FD	3V	260	260	2,400	FD	FD
		02-Dec-14	MP	200	220	2,400	-66	7.4
MW-11	SA	02-Dec-14	MP	130	120	2,100	-5	7.2
		02-Dec-14 FD	MP	130	120	2,100	FD	FD
MW-12	SA	25-Sep-13	3V	2,260	2,590	6,700	200	8.1
		10-Dec-13	3V	2,440	2,350	7,000	-18	8.2
		25-Feb-14	3V	2,560	2,480	7,000	84	8.0
		01-May-14	3V	2,400	2,200	6,000	-19	8.1
		15-Dec-14	MP	2,300	2,300	7,100	-59	7.6
MW-13	SA	13-Nov-13	3V	19.4	16.9	2,000	140	7.5
		13-Nov-14	MP	21.0	21.0	2,000	30	7.3
MW-14	SA	19-Dec-13	3V	17.2	17.3	1,700	5.0	7.5
		12-Nov-14	MP	15.0	16.0	1,900	12	7.5
MW-15	SA	11-Nov-13	3V	10.7	10.3	1,400	280	7.7
		11-Nov-14	MP	13.0	13.0	1,700	28	7.4
MW-16	SA	06-Nov-13	3V	8.5	8.3	920	150	8.1
		22-Apr-14	3V	9.9	9.7	---	44	7.6
MW-17	SA	11-Nov-13	3V	11.8	11.6	1,200	260	8.0
		23-Apr-14	3V	12.0	12.0	---	36	7.9
MW-18	SA	11-Nov-13	3V	18.6	17.5	1,200	230	7.6
		13-Nov-14	MP	21.0	21.0	1,300	24	7.5
MW-19	SA	05-Dec-13	3V	522	487	2,100	190	7.6
		28-Apr-14	3V	550	520	---	77	7.3
		10-Dec-14	MP	630	680	2,300	-78	7.6
MW-20-70	SA	11-Dec-13	3V	2,140	2,520	1,900	16	7.6
		07-May-14	3V	2,200	2,400	1,600	-7	7.5
		15-Dec-14	MP	2,000	2,100	1,900	-86	7.7
MW-20-100	MA	11-Dec-13	3V	2,140	2,080	2,500	23	7.2
		07-May-14	3V	2,900	2,900	2,400	-40	7.2

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-20-100	MA	15-Dec-14	MP	1,900	1,900	2,600	-83	7.5
MW-20-130	DA	17-Dec-13	3V	9,370	9,620	11,000	-64	7.4
		17-Dec-13 FD	3V	9,370	10,700	11,000	FD	FD
		12-May-14	3V	9,100	9,000	9,900	-85	7.5
		15-Dec-14	MP	6,600	6,600	11,000	-150	7.5
		15-Dec-14 FD	MP	6,500	6,300	11,000	FD	FD
MW-21	SA	10-Sep-13	3V	ND (1.0)	1.5	10,000	120	7.1
		05-Nov-13	3V	1.5	2.8	8,900	190	5.7
		19-Feb-14	3V	2.6	3.5	---	8.0	7.1
		22-Apr-14	3V	1.9	1.8	8,300	-190	7.2
		11-Nov-14	MP	2.4	2.7	9,300	-13	7.1
MW-22	SA	14-Nov-13	3V	ND (1.0)	ND (1.0)	20,000	-36	6.6
		30-Apr-14	3V	ND (1.0)	ND (1.0)	---	-160	6.8
		18-Dec-14	MP	ND (1.0)	ND (5.0)	27,000	-42	6.6
MW-23-060	BR	17-Sep-13	3V	36.9	38.4	15,000	120	9.4
		11-Nov-13	3V	35.9	34.9	15,000	160	9.3
		13-Feb-14	3V	34.9	38.0	---	70	9.4
		22-Apr-14	3V	39.0	34.0	---	21	9.2
		10-Nov-14	3V	38.0	32.0	15,000	-62	9.2
MW-23-080	BR	17-Sep-13	3V	13.7	14.3	15,000	140	9.9
		11-Nov-13	3V	11.0	11.2	15,000	81	10.2
		13-Feb-14	3V	8.4	9.0	---	16	10.2
		22-Apr-14	3V	15.0	13.0	---	-60	10.1
		10-Nov-14	3V	5.3	5.2	15,000	-220	10.0
MW-24A	SA	04-Nov-14	MP	ND (0.20)	ND (5.0)	1,800	-200	8.1
MW-24B	DA	18-Dec-14	MP	ND (1.0)	5.4	18,000	-250	8.3
MW-24BR	BR	10-Sep-13	3V	ND (1.0)	ND (1.0)	14,000	-180	8.1
		03-Dec-13	3V	ND (0.20)	ND (1.0)	14,000	-230	8.0
		20-Feb-14	3V	ND (1.0)	ND (1.0)	---	-250	8.0
		29-Apr-14	3V	ND (1.0)	ND (1.0)	---	-250	8.0
		04-Dec-14	3V	ND (1.0)	ND (1.0)	14,000	-190	7.9
MW-25	SA	09-Dec-13	3V	191	188	1,600	-4	7.4
		02-Dec-14	MP	140	130	1,600	-42	7.4
MW-26	SA	04-Dec-13	3V	1,970	2,000	3,800	45	7.3

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-26	SA	05-May-14	3V	2,200	2,200	3,600	-8	7.3
		15-Dec-14	MP	2,400	2,300	4,300	-60	7.4
		15-Dec-14 FD	MP	2,200	2,300	4,300	FD	FD
MW-27-20	SA	04-Nov-13	3V	ND (0.20)	ND (1.0)	900	19	7.4
		14-Apr-14	3V	ND (0.20)	ND (1.0)	1,000	4.0	7.5
		04-Nov-14	MP	ND (0.20)	ND (1.0)	890	-21	7.5
MW-27-60	MA	02-Oct-13	3V	ND (0.20)	ND (1.0)	760	-86	7.4
		04-Nov-13	3V	ND (0.20)	ND (1.0)	950	-78	7.6
		10-Feb-14	3V	ND (0.20)	ND (1.0)	860	-180	7.6
		14-Apr-14	3V	ND (0.20)	ND (1.0)	920	-190	7.6
		14-Apr-14 FD	3V	ND (0.20)	ND (1.0)	900	FD	FD
		04-Nov-14	MP	ND (0.20)	ND (1.0)	970	-120	7.6
		04-Nov-14 FD	MP	ND (0.20)	ND (1.0)	980	FD	FD
MW-27-85	DA	02-Oct-13	3V	ND (1.0)	ND (1.0)	9,000	-38	7.2
		04-Nov-13	3V	ND (0.20)	ND (1.0)	9,800	-16	7.3
		10-Feb-14	3V	ND (1.0)	ND (1.0)	9,600	-280	7.3
		14-Apr-14	3V	ND (1.0)	ND (1.0)	11,000	-230	7.3
		04-Nov-14	MP	ND (0.20)	ND (1.0)	8,500	-25	7.4
MW-28-25	SA	05-Nov-13	3V	ND (0.20)	ND (1.0)	6,700	200	7.2
		15-Apr-14	3V	ND (0.20)	ND (1.0)	910	-240	7.3
		11-Nov-14	MP	ND (0.20)	ND (1.0)	1,000	110	7.1
MW-28-90	DA	11-Sep-13	3V	ND (0.20)	ND (1.0)	6,600	-56	7.1
		05-Nov-13	3V	ND (0.20)	ND (1.0)	6,700	190	7.3
		12-Feb-14	3V	ND (0.20)	ND (1.0)	7,000	-54	7.3
		15-Apr-14	3V	ND (0.20)	ND (1.0)	6,700	-220	7.2
		15-Apr-14 FD	3V	ND (0.20)	ND (1.0)	6,600	FD	FD
		11-Nov-14	MP	ND (0.20)	ND (1.0)	6,200	-28	7.1
MW-29	SA	05-Nov-13	3V	ND (0.20)	ND (1.0)	1,800 J	-74	7.2
		05-Nov-13 FD	3V	ND (0.20)	ND (1.0)	2,300 J	FD	FD
		16-Apr-14	3V	ND (0.20)	ND (1.0)	2,300	-170	7.3
		10-Nov-14	MP	ND (0.20)	ND (1.0)	2,100	-110	7.3
MW-30-30	SA	04-Nov-13	3V	ND (0.20)	ND (1.0)	5,300	-190	7.8
		14-Apr-14	3V	0.21	ND (1.0)	6,800	-260	7.8
		10-Nov-14	MP	0.21	ND (1.0)	10,000	-120	7.6

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-30-50	MA	04-Nov-13	3V	ND (0.20)	ND (1.0)	1,100	-120	7.6
		10-Nov-14	MP	ND (0.20)	ND (1.0)	1,000	7.3	7.6
		10-Nov-14 FD	MP	ND (0.20)	ND (1.0)	1,000	FD	FD
MW-31-60	SA	03-Dec-13	3V	422	383	3,100	20	7.5
		12-May-14	3V	270	270	---	-30	7.5
		03-Dec-14	MP	600	660	2,700	-10	7.7
MW-31-135	DA	07-Nov-13	3V	11.5	11.3	12,000	-110	7.7
		05-Nov-14	MP	12.0	12.0	10,000	-200	7.8
MW-32-20	SA	16-Dec-13	3V	ND (1.0)	ND (1.0)	40,000	-100	6.7
		11-Nov-14	MP	ND (1.0)	ND (5.0)	37,000	-94	6.8
		11-Nov-14 FD	MP	ND (1.0)	ND (5.0)	37,000	FD	FD
MW-32-35	SA	06-Nov-13	3V	ND (1.0)	ND (1.0)	12,000	-79	7.2
		16-Apr-14	3V	ND (1.0)	ND (1.0)	---	-190	7.1
		11-Nov-14	MP	ND (1.0)	ND (1.0)	11,000	-110	7.1
MW-33-40	SA	16-Sep-13	3V	ND (1.0)	ND (1.0)	10,000	180	7.7
		03-Dec-13	3V	ND (1.0)	ND (1.0)	9,600	110	7.9
		12-Feb-14	3V	0.28	ND (1.0)	7,100	120	8.0
		17-Apr-14	3V	ND (0.20)	ND (1.0)	5,600	-170	8.1
		11-Nov-14	MP	ND (1.0)	ND (1.0)	14,000	100	7.6
MW-33-90	MA	16-Sep-13	3V	13.6	13.6	8,800	230	7.4
		03-Dec-13	3V	13.1	12.6	9,600	120	7.4
		12-Feb-14	3V	13.3	15.5	9,900	140	7.4
		21-Apr-14	3V	11.0	10.0	8,800	-230	7.2
		21-Apr-14 FD	3V	12.0 J	9.8 J	8,700	FD	FD
		12-Nov-14	MP	7.9	7.7	9,300	140	7.4
MW-33-150	DA	16-Sep-13	3V	10.6	10.9	15,000	160	7.4
		03-Dec-13	3V	10.7	11.0	16,000	140	7.5
		12-Feb-14	3V	9.7	10.6	16,000	170	7.5
		12-Feb-14 FD	3V	9.4	10.8	16,000	FD	FD
		17-Apr-14	3V	12.0 J	9.6 J	14,000	-290	7.5
		12-Nov-14	MP	0.86	ND (1.0)	14,000	110	7.4
MW-33-210	DA	12-Sep-13	3V	12.5	13.0	17,000	110	7.3
		03-Dec-13	3V	12.5	13.2	18,000	140	7.4
		03-Dec-13 FD	3V	12.9	13.0	18,000	FD	FD

Refer to table footnotes for data qualifier explanation.

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Groundwater Sampling Results, September 2013 through December 2014
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PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-33-210	DA	12-Feb-14	3V	11.6	13.5	18,000	130	7.4
		21-Apr-14	3V	10.0	8.4	17,000	-300	7.3
		12-Nov-14	MP	13.0	12.0	18,000	140	7.4
MW-34-55	MA	20-Nov-13	3V	ND (0.20)	ND (1.0)	780	-65	7.7
		06-Nov-14	MP	ND (0.20)	ND (1.0)	840	-35	7.6
MW-34-80	DA	02-Oct-13	3V	ND (1.0)	ND (1.0)	6,600	-37	7.4
		20-Nov-13	3V	ND (1.0)	ND (1.0)	7,300	14	7.4
		20-Nov-13 FD	3V	ND (1.0)	ND (1.0)	7,300	FD	FD
		10-Feb-14	3V	ND (0.20)	ND (1.0)	---	-290	7.4
		17-Apr-14	3V	ND (0.20)	ND (1.0)	---	-280	7.3
		06-Nov-14	MP	ND (0.20)	ND (1.0)	5,900	-4	7.3
MW-34-100	DA	02-Oct-13	3V	82.6	79.5	15,000	80	7.6
		02-Oct-13 FD	3V	81.5	84.5	15,000	FD	FD
		20-Nov-13	3V	143	136	18,000	-120	7.7
		20-Nov-13 FD	3V	137	141	18,000	FD	FD
		16-Dec-13	3V	246	268	---	-130	7.6
		22-Jan-14	3V	263	270	---	-220	6.8
		10-Feb-14	3V	159	170	---	-160	7.7
		17-Apr-14	3V	3.0	3.5	---	-220	7.5
		02-Oct-14	MP	100	89.0	---	-230	7.4
		01-Dec-14	MP	220	230	17,000	-62	7.6
		01-Dec-14 FD	MP	230	220	17,000	FD	FD
MW-35-60	SA	10-Sep-13	3V	21.9	21.2	7,000	200	7.2
		12-Nov-13	3V	20.5	17.2	6,600	-11	7.4
		17-Feb-14	3V	21.1	21.8	6,200	98	6.9
		17-Feb-14 FD	3V	21.4	20.4	6,400	FD	FD
		24-Apr-14	3V	25.0	24.0	5,600	0.0	7.4
		24-Apr-14 FD	3V	25.0	22.0	5,700	FD	FD
		13-Nov-14	MP	21.0	20.0	6,700	-97	7.3
MW-35-135	DA	12-Nov-13	3V	29.9	27.5	9,200	58	7.8
		24-Apr-14	3V	29.0	25.0	---	-86	7.5
		13-Nov-14	MP	30.0	28.0	10,000	-200	7.6
MW-36-20	SA	11-Nov-13	3V	ND (0.20)	ND (1.0)	5,500	-150	7.7
		11-Nov-13 FD	3V	ND (0.20)	ND (1.0)	5,400	FD	FD
		15-Dec-14	MP	ND (0.20)	ND (1.0)	11,000	-130	7.5

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-36-40	SA	11-Nov-13	3V	ND (0.20)	ND (1.0)	1,300	-280	7.8
		15-Dec-14	MP	0.34	ND (1.0)	1,200	-110	7.9
MW-36-50	MA	11-Nov-13	3V	ND (0.20)	ND (1.0)	920	-57	7.3
		15-Dec-14	MP	ND (0.20)	ND (1.0)	1,200	-35	7.7
MW-36-70	MA	11-Nov-13	3V	ND (0.20)	ND (1.0)	930	-17	7.9
		15-Dec-14	MP	ND (0.20)	ND (1.0)	1,000	-24	7.8
MW-36-90	DA	11-Nov-13	3V	ND (0.20)	ND (1.0)	1,000	-90	8.3
		17-Apr-14	3V	ND (0.20)	ND (1.0)	---	-310	8.2
		15-Dec-14	MP	ND (0.20)	ND (1.0)	1,200	16	8.5
MW-36-100	DA	16-Dec-13	3V	53.8	59.5	7,800	-140	7.2
		17-Apr-14	3V	48.0	47.0	7,000	-360	7.3
		13-Nov-14	MP	65.0	62.0	7,400	-20	7.2
MW-37S	MA	06-Nov-13	3V	9.8	9.3	5,000	140	7.7
		12-Nov-14	MP	11.0	11.0	5,500	-88	7.6
MW-37D	DA	02-Dec-13	3V	12.0	13.0	13,000	-180	7.7
		10-Apr-14	3V	110	99.0	15,000	-190	7.6
		02-Dec-14	MP	8.0	7.5	14,000	-190	7.6
MW-38S	SA	24-Sep-13	3V	3.2	6.8	1,700	-170	7.6
		03-Dec-13	3V	0.59	2.4	---	-240	7.9
		14-May-14	3V	1.5	2.1	---	-260	7.6
		22-Sep-14	3V	ND (0.20)	ND (1.0)	---	---	7.9
		05-Nov-14	3V	ND (0.20)	ND (1.0)	1,500	-260	7.8
MW-38D	DA	17-Sep-13	3V	7.5	8.1	20,000	-79	8.1
		13-Nov-13	3V	9.1	10.2	---	19	8.1
		14-May-14	3V	17.0	14.0	---	-310	8.0
		05-Nov-14	3V	17.0	15.0	20,000	-260	8.3
MW-39-40	SA	12-Nov-13	3V	ND (0.20)	ND (1.0)	1,100	-150	8.0
		16-Dec-14	MP	ND (0.20)	ND (1.0)	1,400	-130	8.0
MW-39-50	MA	12-Nov-13	3V	ND (0.20)	ND (1.0)	1,100	-34	7.8
		16-Dec-14	MP	ND (0.20)	ND (1.0)	1,300	8.9	7.8
MW-39-60	MA	12-Nov-13	3V	ND (0.20)	ND (1.0)	1,500	30	7.9
		16-Dec-14	MP	ND (0.20)	ND (1.0)	1,500	39	8.0
		16-Dec-14 FD	MP	ND (0.20)	ND (1.0)	1,500	FD	FD

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-39-70	MA	12-Nov-13	3V	ND (0.20)	ND (1.0)	1,800	200	7.6
		16-Dec-14	MP	ND (0.20)	ND (1.0)	2,200	25	7.9
MW-39-80	DA	12-Nov-13	3V	ND (0.20)	ND (1.0)	5,600	27	7.3
		16-Dec-14	MP	ND (0.20)	ND (1.0)	4,400	44	7.7
MW-39-100	DA	04-Dec-13	3V	52.2	53.9	14,000	110	6.7
		04-Dec-13 FD	3V	52.2	51.4	14,000	FD	FD
		01-Dec-14	MP	57.0	49.0	15,000	-310	6.7
MW-40S	SA	11-Nov-13	3V	8.2	8.1	1,300	270	7.7
		04-Dec-14	MP	7.6	7.1	2,100	-37	7.2
MW-40D	DA	02-Dec-13	3V	153	148	14,000	240	7.4
		24-Apr-14	3V	130	110	13,000	-13	7.4
		04-Dec-14	MP	160	140	13,000	-89	7.5
MW-41S	SA	04-Nov-13	3V	17.4	15.3	4,900	180	7.9
		04-Nov-14	MP	17.0	17.0	4,900	-110	7.6
MW-41M	DA	04-Nov-13	3V	9.7	9.6	14,000	210	7.7
		04-Nov-14	MP	9.5	8.8	13,000	-110	7.0
		04-Nov-14 FD	MP	9.5	9.0	13,000	FD	FD
MW-41D	DA	04-Nov-13	3V	3.8	4.3	20,000	250	7.6
		10-Apr-14	3V	2.6	2.4	---	-210	7.6
		17-Dec-14	MP	ND (1.0)	1.0	22,000	-94	7.3
MW-42-30	SA	05-Nov-13	3V	ND (0.20)	ND (1.0)	2,600	-160	7.8
		05-Nov-14	MP	0.54	ND (1.0)	2,400	-170	8.0
MW-42-55	MA	11-Sep-13	3V	ND (0.20)	2.8	1,700	-110	8.0
		05-Nov-13	3V	ND (0.20)	2.3	2,600	-150	7.9
		11-Feb-14	3V	ND (0.20)	2.3	---	-290	8.1
		14-Apr-14	3V	0.23	1.6	---	-210	8.0
		06-Nov-14	MP	0.35	2.8	1,200	-71	8.2
MW-42-65	MA	11-Sep-13	3V	ND (0.20)	ND (1.0)	6,800	-28	7.2
		05-Nov-13	3V	ND (0.20)	ND (1.0)	7,100	-34	7.3
		11-Feb-14	3V	ND (0.20)	ND (1.0)	---	-350	7.3
		14-Apr-14	3V	ND (0.20)	ND (1.0)	---	-220	7.3
		06-Nov-14	MP	ND (0.20)	ND (1.0)	6,000	22	7.4
MW-43-25	SA	06-Nov-13	3V	ND (0.20)	ND (1.0)	1,100	-120	7.3

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-43-25	SA	15-Apr-14	3V	ND (0.20)	ND (1.0)	---	-170	7.2
		05-Nov-14	MP	ND (0.20)	ND (1.0)	1,400	-140	7.3
MW-43-75	DA	06-Nov-13	3V	ND (1.0)	ND (1.0)	9,700	-110	7.1
		05-Nov-14	MP	ND (0.20)	ND (1.0)	9,200	-87	7.1
MW-43-90	DA	06-Nov-13	3V	ND (0.20)	ND (1.0)	16,000	-80	6.9
		15-Apr-14	3V	ND (1.0)	ND (1.0)	---	-160	6.9
		05-Nov-14	MP	ND (1.0)	ND (1.0)	15,000	-40	6.9
MW-44-70	MA	02-Dec-13	3V	ND (0.20)	ND (1.0)	2,000	-97	7.7
		16-Apr-14	3V	ND (0.20)	ND (1.0)	---	-290	7.4
		11-Nov-14	MP	ND (0.20)	ND (1.0)	2,000	29	7.6
MW-44-115	DA	12-Sep-13	3V	47.1	46.0	10,000	190	7.4
		02-Dec-13	3V	39.5	43.1	10,000	-190	8.0
		11-Feb-14	3V	41.6	42.9	11,000	-370	7.9
		16-Apr-14	3V	40.0	37.0	11,000	-300	7.8
		23-Sep-14	MP	37.0	32.0	---	---	8.0
		23-Sep-14 FD	MP	37.0	31.0	---	FD	FD
		12-Nov-14	MP	32.0	30.0	11,000	52	7.9
MW-44-125	DA	12-Sep-13	3V	ND (1.0)	4.9	8,600	-160	7.6
		12-Sep-13 FD	3V	ND (0.20)	4.7	8,600	FD	FD
		02-Dec-13	3V	ND (0.20)	4.1	10,000	-160	7.7
		02-Dec-13 FD	3V	ND (0.20)	4.8	11,000	FD	FD
		11-Feb-14	3V	ND (1.0)	5.5	11,000	-150	7.8
		11-Feb-14 FD	3V	ND (1.0)	5.6	11,000	FD	FD
		16-Apr-14	3V	ND (0.20)	5.5	9,200	-230	7.5
		16-Apr-14 FD	3V	ND (0.20)	5.1	9,200	FD	FD
		12-Nov-14	MP	4.0 J	5.9	8,100	-51	7.5
		12-Nov-14 FD	MP	2.9 J	4.8	8,400	FD	FD
MW-45-095a	DA	02-Dec-13	3V	13.7	14.2	8,400	-58	7.6
MW-46-175	DA	11-Sep-13	3V	29.5	29.6	17,000	130	8.0
		20-Nov-13	3V	34.2	33.8	19,000	220	8.4
		16-Dec-13	3V	50.0	52.5	---	-180	8.3
		22-Jan-14	3V	46.3	46.1	---	-150	7.8
		11-Feb-14	3V	35.6	38.0	18,000	-400	8.3
		11-Feb-14 FD	3V	35.4	39.7	18,000	FD	FD
		15-Apr-14	3V	21.0	19.0	19,000	-330	8.2

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-46-175	DA	23-Sep-14	MP	14.0	13.0	---	-300	8.4
		13-Nov-14	MP	23.0	25.0	19,000	65	8.2
MW-46-205	DA	20-Nov-13	3V	6.0	5.1	23,000	210	8.4
		15-Apr-14	3V	5.5	4.8	---	-420	8.3
		13-Nov-14	MP	1.5	1.9	2,200	130	8.1
MW-47-55	SA	12-Nov-13	3V	17.2	16.4	4,500	160	7.6
		23-Apr-14	3V	16.0	14.0	---	-11	7.4
		11-Nov-14	MP	16.0	16.0	4,600	-74	7.5
MW-47-115	DA	12-Nov-13	3V	17.4	14.3	12,000	170	7.6
		23-Apr-14	3V	23.0	20.0	---	-180	7.5
		23-Apr-14 FD	3V	24.0	20.0	---	FD	FD
		11-Nov-14	MP	19.0	17.0	13,000	-290	7.3
MW-48	BR	11-Sep-13	3V	ND (1.0)	ND (1.0)	16,000	24	7.4
		06-Nov-13	3V	ND (1.0)	ND (1.0)	17,000	140	7.8
		20-Feb-14	3V	ND (1.0)	ND (1.0)	---	130	7.5
		23-Apr-14	3V	ND (1.0)	ND (1.0)	---	-200	6.6
		06-Nov-14	3V	ND (1.0)	ND (1.0)	16,000	-83	7.0
MW-49-135	DA	06-Nov-13	3V	1.3	2.0	12,000	24	7.6
		22-Dec-14	MP	2.3	2.0	14,000	-230	7.7
MW-49-275	DA	06-Nov-13	3V	2.0	2.9	24,000	100	7.8
		17-Dec-14	MP	ND (1.0)	1.2	27,000	-150	8.0
MW-49-365	DA	07-Nov-13	3V	ND (0.20)	ND (1.0)	40,000	-150	7.8
		17-Dec-14	MP	ND (1.0)	ND (5.0)	39,000	-190	7.8
		17-Dec-14 FD	MP	ND (1.0)	ND (5.0)	39,000	FD	FD
MW-50-095	MA	06-Nov-13	3V	12.3	11.5	4,800	140	7.9
		23-Apr-14	3V	13.0	12.0	---	-10	7.7
		11-Nov-14	MP	13.0	12.0	4,900	-73	7.5
MW-50-200	DA	26-Sep-13	3V	7,060	6,760	19,000	160	7.6
		17-Dec-13	3V	6,600	7,110	20,000	-32	7.6
		26-Feb-14	3V	7,010	6,940	---	-70	7.3
		12-May-14	3V	7,400	7,200	---	-7	7.7
		16-Dec-14	MP	4,800	5,200	21,000	-7	7.7
MW-51	MA	11-Dec-13	3V	4,520 J	4,550	9,800	13	7.4
		12-May-14	3V	4,800	4,700	9,900	-50	7.5

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-51	MA	15-Dec-14	MP	4,400	4,800	12,000	-130	7.5
MW-52S	MA	13-Nov-13	MP	ND (0.20)	ND (1.0)	7,800	-100	6.8
		30-Apr-14	MP	ND (0.20)	ND (1.0)	---	-200	6.8
		17-Dec-14	MP	ND (1.0)	ND (1.0)	9,100	-88	6.8
MW-52M	DA	13-Nov-13	MP	ND (1.0)	ND (1.0)	15,000	-140	7.5
		13-Nov-13 FD	MP	ND (1.0)	ND (1.0)	13,000	FD	FD
		30-Apr-14	MP	ND (1.0)	ND (1.0)	---	-280	7.4
		17-Dec-14	MP	ND (1.0)	ND (1.0)	16,000	-120	7.5
MW-52D	DA	13-Nov-13	MP	ND (1.0)	ND (1.0)	20,000	-150	7.6
		30-Apr-14	MP	ND (1.0)	ND (1.0)	---	-260	7.7
		17-Dec-14	MP	ND (1.0)	ND (1.0)	22,000	-150	7.9
MW-53M	DA	13-Nov-13	MP	ND (1.0)	ND (1.0)	16,000	-190	8.0
		30-Apr-14	MP	ND (1.0)	ND (1.0)	---	-240	7.9
		17-Dec-14	MP	ND (1.0)	ND (1.0)	20,000	-160	8.0
MW-53D	DA	13-Nov-13	MP	ND (1.0)	ND (1.0)	22,000	-180	8.1
		30-Apr-14	MP	ND (1.0)	ND (1.0)	---	-260	8.2
		17-Dec-14	MP	ND (1.0)	ND (5.0)	27,000	-150	8.2
MW-54-85	DA	21-Nov-13	3V	ND (1.0)	ND (1.0)	9,750	12	7.6
		09-Apr-14	3V	ND (1.0) J	ND (1.0)	9,230 J	-220	7.6
		18-Nov-14	MP	ND (0.20)	ND (1.0)	10,600	-220	7.3
		18-Nov-14 FD	MP	ND (0.20)	ND (1.0)	10,500	FD	FD
MW-54-140	DA	21-Nov-13	3V	ND (1.0)	ND (1.0)	12,100	15	7.7
		09-Apr-14	3V	ND (1.0) J	ND (1.0)	12,300 J	-230	7.7
		09-Apr-14 FD	3V	ND (1.0) J	ND (1.0)	12,200 J	FD	FD
		18-Nov-14	MP	ND (0.20)	ND (1.0)	12,900	-240	7.7
MW-54-195	DA	21-Nov-13	3V	ND (1.0)	ND (1.0)	18,000	-110	8.1
		09-Apr-14	3V	ND (1.0) J	ND (1.0)	18,300 J	-240	8.0
		18-Nov-14	MP	ND (2.0)	ND (1.0)	19,500	-290	7.9
MW-55-45	MA	21-Nov-13	3V	ND (0.20)	ND (1.0)	1,450	30	7.8
		18-Nov-14	MP	ND (1.0)	ND (1.0)	1,470	-270	7.4
MW-55-120	DA	21-Nov-13	3V	7.2	7.6	8,220	-2	7.9
		21-Nov-13 FD	3V	7.3	7.6	8,280	FD	FD
		18-Nov-14	MP	7.5	7.2	8,930	-87	7.7

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-56S	SA	14-Nov-13	MP	ND (0.20)	2.6	6,160	-110	7.0
		10-Apr-14	MP	ND (1.0) J	5.3	6,390 J	-230	7.0
		18-Dec-14	MP	ND (0.20)	ND (1.0)	7,080	-72	7.0
MW-56M	DA	14-Nov-13	MP	ND (1.0)	ND (1.0)	18,700	-110	7.3
		10-Apr-14	MP	ND (1.0) J	1.8	14,400 J	-250	7.3
		18-Dec-14	MP	ND (1.0)	ND (5.0)	14,100	-90	7.2
MW-56D	DA	14-Nov-13	MP	ND (1.0)	1.6 J	13,700	-130	7.7
		10-Apr-14	MP	ND (1.0) J	ND (1.0)	19,800 J	-260	7.7
		18-Dec-14	MP	ND (1.0)	ND (5.0)	2,040	-140	7.6
MW-57-070	BR	23-Sep-13	3V	554	561	2,000	210	7.2
		12-Dec-13	3V	461	512	2,200	-36	7.2
		24-Feb-14	3V	394	409	---	61	7.2
		28-Apr-14	3V	430	460	---	86	7.0
		10-Dec-14	3V	530	520	2,700	-30	7.0
MW-57-185	BR	10-Sep-13	3V	10.1	10.1	18,000	150	8.0
		07-Nov-13	3V	9.5	9.4	19,000	-300	8.3
		07-Nov-13 FD	3V	9.7	9.4	19,000	FD	FD
		13-Feb-14	3V	9.2	10.5	18,000	11	8.8
		22-Apr-14	3V	8.8	7.8	17,000	-81	8.8
		10-Nov-14	3V	9.5	8.9	17,000	-220	9.2
MW-58BR	BR	19-Sep-13	MP	0.73	ND (1.0)	8,400	110	7.6
		17-Dec-13	MP	1.1	1.5	8,600	-170	7.5
		25-Feb-14	MP	2.3	3.1	---	-160	7.5
		06-May-14	MP	0.87	ND (1.0)	---	-270	7.6
		24-Sep-14	MP	2.1	2.2	---	---	7.5
		09-Dec-14	MP	3.6	3.0	8,800	-180	7.6
MW-59-100	SA	25-Sep-13	3V	4,180	4,120	9,800	320	6.8
		10-Dec-13	3V	3,860	3,960	9,100	28	6.9
		25-Feb-14	3V	3,740	3,780	9,900	36	6.4
		07-May-14	3V	4,000	4,000	9,600	-10	7.0
		15-Dec-14	MP	4,100	4,100	11,000	-30	7.1
		15-Dec-14 FD	MP	4,200	3,900	11,000	FD	FD
MW-60-125	BR	24-Sep-13	3V	1,120	1,050	8,600	110	7.3
		24-Sep-13 FD	3V	1,100	1,020	8,400	FD	FD
		04-Dec-13	3V	1,100	1,070	8,100	34	7.3

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-60-125	BR	25-Feb-14	3V	1,030	1,070	9,100	51	7.4
		01-May-14	3V	1,200	1,100	7,700	-42	7.5
		10-Dec-14	3V	950	980	8,900	-130	7.4
MW-60BR-245	BR	17-Sep-13	3V	ND (1.0)	2.6	16,000	-140	8.3
		04-Dec-13	3V	ND (1.0)	ND (1.0)	16,000	-220	8.1
		19-Feb-14	3V	ND (1.0)	2.0	17,000	-260	8.1
		29-Apr-14	3V	ND (1.0)	1.2	16,000	-76	8.1
		25-Sep-14	3V	1.5	3.0	---	---	8.4
		04-Dec-14	3V	ND (1.0)	ND (1.0)	16,000	-240	7.8
MW-61-110	BR	23-Sep-13	3V	576	616	14,000	60	7.4
		05-Dec-13	3V	565	563	14,000	76	7.4
		05-Dec-13 FD	3V	601	581	15,000	FD	FD
		19-Feb-14	3V	588	619	15,000	-76	7.2
		29-Apr-14	3V	470	460	15,000	-160	7.5
		10-Dec-14	3V	570	540	16,000	-120	7.1
MW-62-065	BR	23-Sep-13	3V	500	518	5,800	180	7.4
		11-Dec-13	3V	471	476	5,800	-6	7.4
		20-Feb-14	3V	469	474	---	63	7.3
		29-Apr-14	3V	550	550	---	-1	7.4
		23-Sep-14	3V	540	500	---	---	7.4
		09-Dec-14	3V	530	500	6,000	-110	7.4
MW-62-110	BR	18-Sep-13	3V	808	857	8,100	220	7.3
		13-Nov-13	3V	910	1,040	7,600	190	7.5
		19-Feb-14	3V	976	927	8,600	110	7.6
		07-May-14	3V	910	940	8,000	30	7.1
		23-Sep-14	3V	1,000	1,000	---	---	7.5
		09-Dec-14	3V	1,200	1,200	8,500	-50	6.9
MW-62-190	BR	18-Sep-13	3V	ND (1.0)	ND (1.0)	16,000	-3	7.6
		13-Nov-13	3V	ND (1.0)	ND (1.0)	15,000	0.0	7.7
		19-Feb-14	3V	ND (1.0)	ND (1.0)	17,000	-82	7.1
		07-May-14	3V	ND (1.0)	ND (1.0)	16,000	-65	7.2
		09-Dec-14	MP	ND (1.0)	ND (1.0)	17,000	-59	6.7
MW-63-065	BR	09-Sep-13	3V	1.9	1.8	7,000	110	7.2
		04-Dec-13	3V	1.6	1.9	6,800	120	7.1
		12-Feb-14	3V	1.2	1.5	6,700	130	7.2

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-63-065	BR	09-Apr-14	3V	1.4	1.1	6,600	-1	7.1
		22-Sep-14	3V	1.6	1.4	---	---	7.2
		05-Nov-14	3V	1.6	1.6	6,400	-21	7.0
MW-64BR	BR	17-Sep-13	MP	ND (1.0)	ND (1.0)	13,000	40	7.4
		16-Dec-13	MP	ND (1.0)	ND (1.0)	13,000	18	7.4
		26-Feb-14	MP	ND (1.0)	ND (1.0)	---	16	7.4
		06-May-14	MP	ND (1.0)	ND (1.0)	---	-200	7.5
		30-Sep-14	MP	ND (1.0)	ND (1.0)	---	-190	7.3
		08-Dec-14	MP	ND (1.0)	ND (1.0)	14,000	-140	7.3
MW-65-160	SA	19-Sep-13	3V	113	115	3,800	270	7.3
		02-Dec-13	3V	96.8	102	3,700	240	7.5
		19-Feb-14	3V	125	126	4,000	11	7.0
		24-Apr-14	3V	110	95.0	3,600	-17	7.1
		25-Sep-14	MP	90.0	83.0	---	---	7.3
		03-Dec-14	MP	97.0	92.0	3,400	-82	7.2
MW-65-225	DA	23-Sep-13	3V	583	613	9,800	150	7.2
		23-Sep-13 FD	3V	579	580	9,600	FD	FD
		02-Dec-13	3V	551	580	10,000	-59	7.2
		19-Feb-14	3V	513	529	11,000	-59	7.1
		29-Apr-14	3V	460	450	12,000	-57	7.3
		25-Sep-14	MP	130	110	---	---	7.5
		03-Dec-14	MP	120	130	15,000	-60	7.4
MW-66-165	SA	23-Sep-13	3V	631	694	4,200	200	7.3
		03-Dec-13	3V	595	622	4,200	8.0	7.2
		19-Feb-14	3V	594	638	4,400	70	7.0
		01-May-14	3V	750	720	3,800	110	7.2
		01-May-14 FD	3V	720	750	3,800	FD	FD
		10-Dec-14	MP	590	580	4,400	-73	7.2
MW-66-230	DA	25-Sep-13	3V	5,120	6,030	17,000	300	7.9
		12-Dec-13	3V	6,630 J	6,850	19,000	-33	7.1
		26-Feb-14	3V	5,730	6,570	20,000	67	7.6
		07-May-14	3V	6,700	6,700	17,000	-130	8.0
		22-Dec-14	MP	5,500	6,400	19,000	-81	7.6
MW-66BR-270	BR	23-Sep-13	3V	ND (1.0)	ND (1.0)	16,000	-230	9.6
		17-Dec-13	3V	ND (1.0)	ND (1.0)	18,000	56	9.9

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TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-66BR-270	BR	26-Feb-14	3V	ND (1.0)	ND (1.0)	18,000	-120	9.7
		13-May-14	3V	ND (1.0)	ND (1.0)	15,000	-350	9.6
		16-Dec-14	3V	ND (1.0)	ND (5.0)	18,000	-380	8.8
MW-67-185	SA	25-Sep-13	3V	2,280	2,220	5,000	200	7.2
		04-Dec-13	3V	2,180	2,260	5,100	17	7.2
		24-Feb-14	3V	1,960	2,150	5,600	150	7.2
		05-May-14	3V	2,300	2,500	5,000	-32	7.2
		11-Dec-14	MP	1,900	1,600	6,200	-48	7.1
MW-67-225	MA	25-Sep-13	3V	3,100	2,920	6,800	310	7.5
		09-Dec-13	3V	3,070	3,010	7,000	43	7.4
		24-Feb-14	3V	2,890	3,120	7,500	120	7.3
		06-May-14	3V	3,200	3,300	6,300	-81	7.4
		11-Dec-14	MP	3,200	3,200	7,300	-130	7.6
MW-67-260	DA	25-Sep-13	3V	2,040	1,980	16,000	120	8.1
		25-Sep-13 FD	3V	2,050	1,920	16,000	FD	FD
		09-Dec-13	3V	1,980	1,820	17,000	-97	8.0
		24-Feb-14	3V	1,940	2,010	18,000	-90	7.9
		05-May-14	3V	2,000	1,900	15,000	-250	8.5
		11-Dec-14	MP	740	680	18,000	-200	8.4
MW-68-180	SA	26-Sep-13	3V	19,200	20,700	3,800	200	7.2
		12-Dec-13	3V	21,100	25,600	4,200	32	7.4
		12-Dec-13 FD	3V	20,900	23,900	4,200	FD	FD
		27-Feb-14	3V	22,900	23,800	4,300	28	7.3
		12-May-14	3V	10,000	11,000	3,000	34	7.3
		30-Sep-14	MP	27,000	28,000	---	5.0	7.3
		09-Dec-14	MP	30,000	31,000	4,300	-58	7.6
MW-68-240	DA	24-Sep-13	3V	2,120	1,920	15,000	160	7.4
		04-Dec-13	3V	1,960	2,110	15,000	-79	7.3
		25-Feb-14	3V	2,020	2,050	17,000	-40	7.1
		06-May-14	3V	2,200	2,100	14,000	-190	7.3
		06-May-14 FD	3V	2,200	2,100	14,000	FD	FD
		18-Dec-14	MP	2,100	2,200	16,000	-81	7.1
MW-68BR-280	BR	18-Sep-13	3V	ND (1.0)	ND (1.0)	19,000	-79	8.4
		18-Dec-13	3V	ND (1.0)	ND (1.0)	20,000	-170	8.6
		27-Feb-14	3V	ND (1.0)	ND (1.0)	22,000	-120	8.5

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-68BR-280	BR	13-May-14	3V	ND (1.0)	ND (1.0)	19,000	-200	8.3
		18-Dec-14	3V	ND (1.0)	ND (5.0)	21,000	-200	8.7
MW-69-195	BR	24-Sep-13	3V	938	963	3,500	120	7.1
		03-Dec-13	3V	932	952	3,500	-25	6.9
		19-Feb-14	3V	893	905	3,500	67	7.2
		01-May-14	3V	1,000	1,000	3,100	53	7.1
		25-Sep-14	3V	860	950	---	---	7.3
		25-Sep-14 FD	3V	930	990	---	FD	FD
		11-Dec-14	3V	950	970	3,600	0.0	7.1
MW-70-105	BR	23-Sep-13	3V	122	123	3,300	35	7.8
		04-Dec-13	3V	163	164	3,400	11	7.8
		17-Feb-14	3V	145	136	3,500	-180	7.9
		28-Apr-14	3V	75.0	70.0	3,200	-130	7.8
		02-Dec-14	3V	130	120	3,400	-240	7.7
MW-70BR-225	BR	24-Sep-13	3V	2,170	2,040	13,000	100	7.4
		10-Dec-13	3V	1,950	1,910	13,000	-9	7.3
		25-Feb-14	3V	1,900	2,080	14,000	-90	7.1
		05-May-14	3V	2,400	2,500	12,000	-160	7.3
		16-Dec-14	3V	1,900	2,200	14,000	-190	7.4
MW-71-035	SA	10-Sep-13	3V	ND (1.0)	ND (1.0)	7,900	120	7.3
		11-Dec-13	3V	0.47	ND (1.0)	8,000	98	7.3
		18-Feb-14	3V	0.32	ND (1.0)	8,400	-28	8.7
		24-Apr-14	3V	1.0	1.0	7,700	20	7.3
		06-Nov-14	MP	1.2	15.0	14,000	-69	6.7
MW-72-080	BR	19-Sep-13	3V	139	141	15,000	110	7.8
		19-Sep-13 FD	3V	138	140	15,000	FD	FD
		04-Dec-13	3V	137	136	15,000	110	7.7
		18-Feb-14	3V	121	125	16,000	14	7.7
		24-Apr-14	3V	100	82.0	16,000	-12	7.5
		22-Sep-14	3V	140	120	---	---	7.7
		01-Dec-14	3V	130	110	16,000	-280	7.6
MW-72BR-200	BR	19-Sep-13	3V	5.7	6.2	15,000	-11	8.2
		05-Nov-13	3V	5.4	5.6	16,000	19	8.3
		05-Nov-13 FD	3V	5.6	5.8	16,000	FD	FD
		17-Feb-14	3V	7.1	7.5	15,000	-95	8.2

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-72BR-200	BR	17-Feb-14 FD	3V	7.1	7.0	15,000	FD	FD
		21-Apr-14	3V	6.2 J	4.7 J	14,000	26	8.4
		24-Sep-14	3V	5.4	4.5	---	---	8.3
		17-Nov-14	3V	5.8	6.0	16,000	-300	8.2
MW-73-080	BR	11-Sep-13	3V	31.6	30.9	9,700	300	7.2
		05-Dec-13	3V	32.3	34.9	10,000	120	7.4
		18-Feb-14	3V	48.5	49.2	11,000	4.0	7.2
		29-Apr-14	3V	53.0	48.0	11,000	89	7.1
		23-Sep-14	3V	27.0	23.0	---	100	7.1
		02-Dec-14	3V	41.0	37.0	10,000	11	6.6
MW-74-240	BR	18-Sep-13	3V	ND (0.20)	ND (1.0)	780	19	8.9
		05-Dec-13	3V	ND (0.20)	ND (1.0)	710	-44	8.8
		26-Feb-14	3V	ND (0.20)	ND (1.0)	880	-81	8.6
		01-May-14	3V	ND (0.20)	ND (1.0)	800	-160	8.1
		11-Dec-14	3V	ND (0.20)	ND (1.0)	990	-190	8.3
OW-3S	SA	13-Nov-13	3V	22.3	22.5	1,400	160	7.7
		12-Nov-14	3V	23.0	23.0	1,400	18	7.7
		12-Nov-14 FD	3V	23.0	24.0	1,400	FD	FD
OW-3M	MA	13-Nov-13	MP	15.0	14.0	5,400	130	7.9
		12-Nov-14	MP	16.0	15.0	5,700	-110	7.7
OW-3D	DA	05-Nov-13	MP	8.6	8.3	9,000	49	7.9
		12-Nov-14	MP	11.0	10.0	8,800	-140	7.7
PE-1	DA	03-Sep-13	3V	5.1	5.4	4,330	---	---
		01-Oct-13	3V	5.2	5.1	4,160	---	---
		05-Nov-13	3V	5.2 J	5.0	4,160 J	---	---
		03-Dec-13	3V	5.5	6.0	3,950	---	---
		07-Jan-14	3V	5.5	5.6	3,960	---	---
		04-Feb-14	3V	5.6	6.0	3,820	---	---
		04-Mar-14	3V	4.8	4.8	3,680	---	---
		08-Apr-14	3V	4.0	4.2	4,150	---	---
		06-May-14	3V	3.9	4.3	4,540	---	---
		03-Jun-14	3V	3.7	4.1	4,480	---	---
		01-Jul-14	3V	3.6	3.7	4,420	---	---
		05-Aug-14	3V	3.7	3.9	4,320	---	---
		02-Sep-14	3V	3.8	4.0	4,260	---	---

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
PE-1	DA	07-Oct-14	3V	3.7	4.2	4,160	---	---
		04-Nov-14	3V	4.0	4.7	4,230	---	---
		02-Dec-14	3V	4.2	4.9	4,230	---	---
PGE-7BR	BR	10-Dec-13	3V	ND (1.0)	ND (1.0)	16,000	-170	7.1
		04-Dec-14	3V	ND (1.0)	ND (1.0)	17,000	-190	6.9
PGE-8 [a]	BR	18-Dec-13	3V	ND (1.0)	ND (1.0)	18,000	-300	8.1
		07-Jan-15	3V	ND (1.0)	ND (1.0)	17,000	-420	8.2
Park Moabi-3	MA	19-Dec-13	3V	4.1	7.9 UF	1,200	-61	7.7
		23-Dec-14	3V	9.2	8.6	1,500	-38	7.4
Park Moabi-4	MA	19-Dec-13	3V	12.6	18.0 UF	2,000	-64	7.5
		23-Dec-14	3V	18.0	16.0	2,000	-39	7.5
TW-1	SA-MA-DA	26-Sep-13	3V	2,770	2,600	6,900	160	7.1
		17-Dec-13	3V	2,770	2,880	7,300	-91	7.2
		20-Feb-14	3V	2,500	2,620	7,200	72	7.1
		13-May-14	3V	2,800	2,700	6,000	-140	7.3
		22-Dec-14	3V	2,100	2,200	7,200	-120	7.3
TW-2S [a]	SA-MA	19-Dec-13	3V	545	492	5,400	-40	7.7
		13-Jan-15	3V	590	570	2,100	-42	7.5
TW-2D	DA	19-Dec-13	3V	162	156	8,000	-38	7.3
		15-Dec-14	3V	48.0	44.0	7,300	99	7.6
		15-Dec-14 FD	3V	47.0	43.0	7,300	FD	FD
TW-3D	DA	03-Sep-13	3V	728	832	7,770	---	---
		01-Oct-13	3V	846	720	7,620	---	---
		05-Nov-13	3V	816 J	817	7,550 J	---	---
		03-Dec-13	3V	934	832	7,410	---	---
		07-Jan-14	3V	905	761	7,290	---	---
		04-Feb-14	3V	816	804	7,570	---	---
		04-Mar-14	3V	816	752	7,980	---	---
		08-Apr-14	3V	662	772	7,810	---	---
		06-May-14	3V	601	742	8,270	---	---
		03-Jun-14	3V	725	737	8,090	---	---
		01-Jul-14	3V	720	736	8,180	---	---
		05-Aug-14	3V	704	695	8,020	---	---
		02-Sep-14	3V	703	729	8,070	---	---

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, September 2013 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
TW-3D	DA	07-Oct-14	3V	720	733	7,910	---	---
		04-Nov-14	3V	711	706	7,990	---	---
		02-Dec-14	3V	733	757	8,110	---	---
TW-4	DA	12-Nov-13	3V	7.4	6.5	19,000	130	7.6
TW-5	DA	06-Nov-13	3V	10.3	11.3	13,000	160	7.8

Notes:

(---) = data not collected, available, rejected, or field instrument malfunction.
3V = three volume.
FD = field duplicate sample.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
mV = millivolts.
MP = minimal drawdown/micro purge.
ND = not detected at listed RL.
ORP = oxidation-reduction potential.
RL = reporting limit.
UF = unfiltered.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.

Beginning February 1, 2008, hexavalent chromium samples are field-filtered per DTSC-approved change from analysis Method SW7199 to E218.6.

The RLs for certain hexavalent chromium results from Method E218.6 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

[a]Fourth Quarter 2014 data was collected January 2015 due to field logistical issue.

ORP is reported to two significant figures. Specific conductance is reported to three significant figures.

Wells are assigned to separate aquifer zones for results reporting:
SA: shallow interval of Alluvial Aquifer.
MA: mid-depth interval of Alluvial Aquifer.
DA: deep interval of Alluvial Aquifer.
BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

ARCADIS. 2013. 2013 Annual Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test. October 11.

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-9	SA	02-Dec-14	MP	1.6	2.0	4.3	ND (0.50)	9.30
MW-10	SA	14-May-14	3V	---	28.0	5.9	---	11.2
		14-May-14 FD	3V	---	28.0	6.4	---	10.6
		02-Dec-14	MP	3.2	23.0	5.4	ND (0.50)	10.0
MW-11	SA	02-Dec-14	MP	1.5	6.3	4.3	ND (0.50)	5.70
		02-Dec-14 FD	MP	1.4	6.2	4.2	ND (0.50)	5.60
MW-12	SA	25-Feb-14	3V	42.0	12.0	15.0	---	13.2
		01-May-14	3V	38.0	11.0	16.0	ND (0.50) J	13.9
		15-Dec-14	MP	40.0	12.0	19.0	ND (0.50) J	14.0
MW-13	SA	13-Nov-14	MP	1.9	12.0	3.2	ND (0.50)	---
MW-14	SA	12-Nov-14	MP	0.94	15.0	2.5	ND (0.50)	4.00
MW-15	SA	11-Nov-14	MP	---	14.0	3.7	ND (0.50)	---
MW-16	SA	22-Apr-14	3V	10.0	13.0	1.8	ND (0.50)	---
MW-17	SA	23-Apr-14	3V	1.4	16.0	8.6	ND (0.50)	---
MW-18	SA	13-Nov-14	MP	---	5.3	3.4	ND (0.50)	---
MW-19	SA	10-Dec-14	MP	---	13.0	4.0	ND (0.50)	---
MW-20-70	SA	07-May-14	3V	---	51.0	5.0	---	7.15
		15-Dec-14	MP	---	47.0	5.1	ND (0.50)	7.70
MW-20-100	MA	07-May-14	3V	---	4.1	6.6	---	11.1
		15-Dec-14	MP	---	4.2	5.9	ND (0.50)	8.90
MW-20-130	DA	12-May-14	3V	5.0	41.0	27.0	ND (0.50)	12.9
		15-Dec-14	MP	3.9	33.0	35.0	ND (0.50) J	14.0
		15-Dec-14 FD	MP	3.9	32.0	36.0	ND (0.50) J	15.0
MW-21	SA	22-Apr-14	3V	---	69.0	27.0	---	3.32
		11-Nov-14	MP	---	94.0	16.0	ND (0.50)	0.680
MW-22	SA	30-Apr-14	3V	12.0	38.0	0.55	2100	---
		18-Dec-14	MP	14.0	32.0	ND (2.5)	6000	---
MW-23-060	BR	13-Feb-14	3V	3.6	---	---	ND (0.50)	---
		22-Apr-14	3V	2.6	---	---	ND (0.50)	---
		10-Nov-14	3V	3.1	---	---	ND (0.50)	---
MW-23-080	BR	13-Feb-14	3V	3.6	---	---	ND (0.50)	---
		22-Apr-14	3V	2.7	---	---	ND (0.50)	---
		10-Nov-14	3V	3.4	---	---	ND (0.50)	---
MW-24A	SA	04-Nov-14	MP	0.28	67.0	0.64	28.0	0.110
MW-24B	DA	18-Dec-14	MP	2.5	45.0	ND (2.5)	77.0	0.970
MW-24BR	BR	04-Dec-14	3V	0.41	64.0	ND (2.5)	140	0.0590

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-25	SA	02-Dec-14	MP	1.2	3.8	5.3	ND (0.50)	8.90
MW-26	SA	05-May-14	3V	1.7	30.0	49.0	ND (0.50)	20.4
		15-Dec-14	MP	2.1	33.0	56.0	ND (0.50)	21.0
		15-Dec-14 FD	MP	1.9	33.0	54.0	ND (0.50)	22.0
MW-27-20	SA	14-Apr-14	3V	0.84	3.4	12.0	21.0	0.265
		04-Nov-14	MP	1.7	5.6	ND (0.50)	110	ND (0.050)
MW-27-60	MA	10-Feb-14	3V	6.5	4.1	ND (0.50)	170	ND (0.010)
		14-Apr-14	3V	6.9	4.1	ND (0.50)	200	ND (0.010)
		14-Apr-14 FD	3V	7.2	4.2	ND (0.50)	190	ND (0.010)
		04-Nov-14	MP	11.0	3.7	ND (0.50)	340	ND (0.050)
		04-Nov-14 FD	MP	11.0	3.6	ND (0.50)	330	ND (0.050)
MW-27-85	DA	10-Feb-14	3V	1.4	22.0	ND (0.50)	21.0	ND (0.010)
		14-Apr-14	3V	0.18	2.2	ND (0.50)	6.3	---
		04-Nov-14	MP	1.6	21.0	ND (0.50)	2.4	ND (0.050)
MW-28-25	SA	15-Apr-14	3V	1.8	4.5	ND (0.50)	15.0	ND (0.010)
		11-Nov-14	MP	1.0	3.9	ND (0.50)	11.0	ND (0.050)
MW-28-90	DA	12-Feb-14	3V	1.7	20.0	ND (0.50)	100	ND (0.010)
		15-Apr-14	3V	1.8	22.0	ND (0.50)	130	ND (0.010)
		15-Apr-14 FD	3V	1.8	21.0	ND (0.50)	120	ND (0.010)
		11-Nov-14	MP	1.7	20.0	ND (0.50)	100	ND (0.050)
MW-29	SA	16-Apr-14	3V	5.7	19.0	9.5	270	0.198
		10-Nov-14	MP	7.8	9.3	ND (0.50)	330	ND (0.050)
MW-30-30	SA	14-Apr-14	3V	---	22.0	ND (0.50)	---	0.0153
		10-Nov-14	MP	1.1	44.0	0.81	60.0	ND (0.050)
MW-30-50	MA	10-Nov-14	MP	2.7	5.2	ND (0.50)	130 J	ND (0.050)
		10-Nov-14 FD	MP	2.8	5.1	ND (0.50)	160 J	ND (0.050)
MW-31-60	SA	03-Dec-14	MP	1.1	15.0	2.5	ND (0.50)	3.90
MW-31-135	DA	05-Nov-14	MP	3.3	26.0	0.55	ND (0.50)	---
MW-32-20	SA	11-Nov-14	MP	3.3	---	---	160	---
		11-Nov-14 FD	MP	3.7	---	---	170	---
MW-32-35	SA	16-Apr-14	3V	27.0	---	---	1200	---
		11-Nov-14	MP	21.0	15.0	ND (0.50)	1200	---
		01-Dec-14	MP	---	---	---	---	0.0930
MW-33-40	SA	12-Feb-14	3V	13.0	170	0.55	ND (0.50)	0.130
		17-Apr-14	3V	14.0	130	ND (0.50)	ND (0.50)	ND (0.010)
		11-Nov-14	MP	8.9	370	ND (2.5)	ND (0.50)	0.300

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-33-90	MA	12-Feb-14	3V	1.3	17.0	0.55	ND (0.50)	1.70
		21-Apr-14	3V	1.3	15.0	ND (0.50)	ND (0.50)	1.43 J
		21-Apr-14 FD	3V	1.3	15.0	ND (0.50)	ND (0.50)	1.38 J
		12-Nov-14	MP	1.2	15.0	ND (0.50)	ND (0.50)	1.10
MW-33-150	DA	12-Feb-14	3V	1.6	36.0	ND (2.5)	3.9	1.64
		12-Feb-14 FD	3V	1.7	40.0	ND (2.5)	4.1	1.65
		17-Apr-14	3V	1.1	24.0	ND (2.5)	ND (0.50)	1.63
		12-Nov-14	MP	0.74	39.0	ND (0.50)	ND (0.50)	1.30
MW-33-210	DA	12-Feb-14	3V	1.1	18.0	ND (2.5)	4.8	1.77
		21-Apr-14	3V	0.94	17.0	ND (2.5)	ND (0.50)	1.58
		12-Nov-14	MP	1.0	17.0	ND (2.5)	14.0	1.90
MW-34-55	MA	06-Nov-14	MP	2.1	4.9	ND (0.50)	67.0	ND (0.050)
MW-34-80	DA	10-Feb-14	3V	1.3	---	---	---	---
		17-Apr-14	3V	1.4	---	---	8.0	---
		06-Nov-14	MP	1.3	---	---	ND (0.50)	---
		01-Dec-14	MP	---	---	---	---	ND (0.050)
MW-34-100	DA	22-Jan-14	3V	1.8	---	---	---	---
		10-Feb-14	3V	1.6	---	---	---	---
		17-Apr-14	3V	1.3	---	---	---	---
		02-Oct-14	MP	1.3	56.0	ND (2.5)	ND (0.50)	0.640
		01-Dec-14	MP	1.6	85.0	ND (2.5)	18.0 J	0.580 J
		01-Dec-14 FD	MP	1.5	86.0	ND (2.5)	ND (2.5) J	0.610 J
MW-35-60	SA	17-Feb-14	3V	1.1	9.5	1.1	ND (0.50)	2.34
		17-Feb-14 FD	3V	1.0	9.9	1.1	ND (0.50)	2.33
		24-Apr-14	3V	1.0	9.8 J	1.1	1.8 J	2.39
		24-Apr-14 FD	3V	1.0	11.0 J	0.98	ND (0.50) J	2.33
		13-Nov-14	MP	0.93	9.2	0.80	ND (0.50)	1.90
MW-35-135	DA	13-Nov-14	MP	0.84	25.0	ND (2.5)	ND (0.50)	2.80
MW-36-20	SA	15-Dec-14	MP	1.7	52.0	ND (2.5)	280	---
MW-36-40	SA	15-Dec-14	MP	4.7	8.0	ND (0.50)	140	ND (0.050)
MW-36-50	MA	15-Dec-14	MP	4.3	4.6	ND (0.50)	250	---
MW-36-70	MA	15-Dec-14	MP	3.3	---	---	170	---
MW-36-90	DA	17-Apr-14	3V	19.0	---	---	---	---
		15-Dec-14	MP	25.0	---	---	2.4	---
MW-36-100	DA	17-Apr-14	3V	8.5	35.0	ND (0.50)	17.0	0.0768
		13-Nov-14	MP	8.9	30.0	ND (0.50)	ND (0.50)	0.220

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-37D	DA	10-Apr-14	3V	---	47.0	ND (0.50)	---	0.311
		02-Dec-14	MP	---	47.0	ND (2.5)	ND (0.50)	0.210
MW-37S	MA	12-Nov-14	MP	1.8	18.0	0.85	ND (0.50)	---
MW-38D	DA	14-May-14	3V	6.5	85.0	ND (2.5)	160	0.0870
		05-Nov-14	3V	7.4	86.0	ND (12)	88.0	0.0680
MW-38S	SA	14-May-14	3V	11.0	40.0	ND (0.50)	220	0.570
		22-Sep-14	3V	14.0	47.0	ND (0.50)	220	ND (0.050)
		05-Nov-14	3V	13.0	46.0	ND (0.50)	210	ND (0.050)
MW-39-40	SA	16-Dec-14	MP	21.0	---	---	140	---
MW-39-50	MA	16-Dec-14	MP	3.1	---	---	110	---
MW-39-60	MA	16-Dec-14	MP	5.3	9.5	ND (0.50)	40.0	ND (0.050)
		16-Dec-14 FD	MP	6.1	9.8	ND (0.50)	42.0	ND (0.050)
MW-39-70	MA	16-Dec-14	MP	---	38.0	ND (0.50)	ND (0.50)	---
MW-39-100	DA	01-Dec-14	MP	2.0	6.2	ND (2.5)	15.0	0.0870
MW-40D	DA	24-Apr-14	3V	3.9	48.0	1.6	ND (0.50)	3.37
		04-Dec-14	MP	4.5	59.0	1.7	ND (0.50)	3.30
MW-40S	SA	04-Dec-14	MP	1.2	8.5	2.0	ND (0.50)	3.80
MW-41D	DA	17-Dec-14	MP	2.9	80.0	ND (2.5)	32.0	0.480
MW-41M	DA	04-Nov-14	MP	1.9	26.0	ND (2.5)	ND (0.50)	0.660
		04-Nov-14 FD	MP	1.9	24.0	ND (2.5)	ND (0.50)	0.620
MW-41S	SA	04-Nov-14	MP	1.8	16.0	0.73	ND (0.50)	1.20
MW-42-30	SA	05-Nov-14	MP	3.8	19.0	ND (0.50)	15.0	ND (0.050)
MW-42-55	MA	11-Feb-14	3V	13.0	---	---	---	---
		14-Apr-14	3V	11.0	---	---	---	---
		06-Nov-14	MP	18.0	---	---	18.0	---
MW-42-65	MA	11-Feb-14	3V	2.2	---	---	1100	---
		14-Apr-14	3V	3.0	---	---	710	---
		06-Nov-14	MP	3.6	23.0	ND (0.50)	870	---
MW-43-25	SA	15-Apr-14	3V	16.0	---	---	320	---
		05-Nov-14	MP	23.0	7.6	ND (0.50)	360	---
MW-43-75	DA	05-Nov-14	MP	13.0	---	---	690	---
MW-43-90	DA	15-Apr-14	3V	3.1	---	---	930	---
		05-Nov-14	MP	2.9	25.0	ND (2.5)	800	---
MW-44-70	MA	16-Apr-14	3V	4.2	---	---	---	---
		11-Nov-14	MP	4.5	14.0	ND (0.50)	100	---
MW-44-115	DA	11-Feb-14	3V	5.5	81.0	ND (0.50)	ND (0.50)	0.244

TABLE 3-2a

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Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-44-115	DA	16-Apr-14	3V	5.8	84.0	ND (0.50)	ND (0.50)	0.198
		23-Sep-14	MP	5.5	91.0	ND (0.50)	3.1 J	0.170
		23-Sep-14 FD	MP	5.5	88.0	ND (2.5)	ND (0.50) J	0.210
		12-Nov-14	MP	5.4	85.0	ND (0.50)	2.9	0.190
MW-44-125	DA	11-Feb-14	3V	3.4	160	ND (0.50)	410	0.297
		11-Feb-14 FD	3V	3.5	160	ND (0.50)	420	0.296
		16-Apr-14	3V	2.7	98.0	ND (0.50)	620	0.260
		16-Apr-14 FD	3V	3.2	110	ND (2.5)	620	0.263
		12-Nov-14	MP	3.3	110	ND (0.50)	400	0.120
		12-Nov-14 FD	MP	3.2	99.0	ND (0.50)	370	0.140
MW-46-175	DA	11-Feb-14	3V	---	190	ND (2.5)	---	1.17
		11-Feb-14 FD	3V	---	200	ND (2.5)	---	1.19
		15-Apr-14	3V	---	170	ND (2.5)	---	1.18
		23-Sep-14	MP	---	170	ND (2.5)	---	0.860
		13-Nov-14	MP	---	190	ND (12)	ND (2.5)	1.10
MW-47-55	SA	11-Nov-14	MP	1.1	9.5	1.0	ND (0.50)	---
MW-47-115	DA	11-Nov-14	MP	---	23.0	0.89	ND (0.50)	---
MW-49-135	DA	22-Dec-14	MP	1.6	40.0	0.97	220	---
MW-49-275	DA	17-Dec-14	MP	---	270	ND (2.5)	250	---
MW-50-095	MA	11-Nov-14	MP	---	16.0	0.99	ND (0.50)	---
MW-50-200	DA	16-Dec-14	MP	3.1	43.0	3.3	ND (0.50)	---
MW-51	MA	12-May-14	3V	3.9	44.0	16.0	ND (0.50)	11.3
		15-Dec-14	MP	3.7	47.0	16.0	ND (0.50)	11.0
MW-52D	DA	30-Apr-14	MP	3.3	---	---	140	---
		17-Dec-14	MP	3.5	---	---	110	---
MW-52M	DA	30-Apr-14	MP	1.4	---	---	---	---
		17-Dec-14	MP	1.8	---	---	120	---
MW-52S	MA	30-Apr-14	MP	0.21	---	---	---	---
		17-Dec-14	MP	0.16	---	---	1700	---
MW-53D	DA	30-Apr-14	MP	3.4	---	---	1300	---
		17-Dec-14	MP	2.9	---	---	1200	---
MW-53M	DA	30-Apr-14	MP	0.84	---	---	280	---
		17-Dec-14	MP	0.85	---	---	270	---
MW-54-85	DA	09-Apr-14	3V	3.5	---	---	760	---
		18-Nov-14	MP	3.5	ND (50)	ND (10)	721	---
		18-Nov-14 FD	MP	3.6	ND (50)	ND (10)	841	---

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-54-140	DA	09-Apr-14	3V	2.6	---	---	144	---
		09-Apr-14 FD	3V	1.4	---	---	140	---
		18-Nov-14	MP	3.1	55.3	ND (50)	98.6	---
MW-54-195	DA	09-Apr-14	3V	0.23	---	---	537	---
		18-Nov-14	MP	ND (1.0)	117	ND (50)	182	---
MW-55-45	MA	18-Nov-14	MP	---	36.2	ND (10)	1030	---
MW-55-120	DA	18-Nov-14	MP	---	44.1	ND (10)	ND (10)	---
MW-57-070	BR	10-Dec-14	3V	1.4	2.2	3.8	ND (0.50)	10.0
MW-57-185	BR	13-Feb-14	3V	13.0	87.0	ND (2.5)	180	ND (0.010)
		22-Apr-14	3V	13.0	89.0	ND (2.5)	280 J	ND (0.010)
		10-Nov-14	3V	12.0	84.0	ND (2.5)	170	ND (0.050)
MW-58BR	BR	25-Feb-14	MP	1.2	---	---	---	---
		06-May-14	MP	1.0	---	---	---	---
		24-Sep-14	MP	1.1	26.0	1.3	560	0.190
		09-Dec-14	MP	1.1	25.0	1.0	460	1.30
MW-59-100	SA	25-Feb-14	3V	2.3	5.8	4.0	ND (0.50)	4.16
		07-May-14	3V	2.1	5.4	4.0	ND (0.50)	3.57
		15-Dec-14	MP	2.1	5.4	3.8	ND (0.50)	3.60
		15-Dec-14 FD	MP	2.0	5.2	3.7	ND (0.50)	3.90
MW-60-125	BR	25-Feb-14	3V	1.4	18.0	5.8	ND (0.50)	4.74
		01-May-14	3V	1.5	18.0	5.7	ND (0.50)	4.02
		10-Dec-14	3V	1.8	18.0	6.4	ND (0.50)	4.30
MW-60BR-245	BR	19-Feb-14	3V	6.4	61.0	ND (2.5)	25.0	0.109
		29-Apr-14	3V	6.8	68.0	ND (2.5)	ND (0.50)	0.148
		25-Sep-14	3V	4.9	61.0	ND (2.5)	ND (0.50)	0.280
		04-Dec-14	3V	6.8	61.0	ND (2.5)	17.0	0.180
MW-61-110	BR	19-Feb-14	3V	3.5	22.0	ND (2.5)	120	0.950
		29-Apr-14	3V	3.1	25.0	ND (2.5)	89.0	0.650
		10-Dec-14	3V	3.4	22.0	1.0	83.0	4.20
MW-62-065	BR	23-Sep-14	3V	1.3	15.0	3.2	ND (0.50)	4.20
		09-Dec-14	3V	1.4	15.0	3.3	ND (0.50)	4.20
MW-62-110	BR	19-Feb-14	3V	5.6	47.0	3.4	59.0	3.85
		07-May-14	3V	6.0	48.0	3.1	71.0	3.74
		23-Sep-14	3V	6.4	44.0	2.8	69.0	3.60
		09-Dec-14	3V	6.7	44.0	2.7	47.0	3.70
MW-62-190	BR	19-Feb-14	3V	4.9	80.0	ND (2.5)	500	0.0153
		07-May-14	3V	3.6	61.0	ND (2.5)	440	0.0209

TABLE 3-2a

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Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-62-190	BR	09-Dec-14	MP	4.7	82.0	ND (2.5)	500	ND (0.050)
MW-63-065	BR	12-Feb-14	3V	1.5	20.0	1.0	ND (0.50)	1.09
		09-Apr-14	3V	1.5	20.0	0.81	ND (0.50)	0.851
		22-Sep-14	3V	1.5	18.0	0.99	ND (0.50)	1.10
		05-Nov-14	3V	1.4	18.0	0.94	ND (0.50)	1.30
MW-64BR	BR	26-Feb-14	MP	3.1	---	---	---	---
		06-May-14	MP	2.9	---	---	---	---
		30-Sep-14	MP	2.0	40.0	ND (2.5)	490	0.120
		08-Dec-14	MP	3.0	65.0	ND (2.5)	750	ND (0.050)
MW-65-160	SA	19-Feb-14	3V	0.89	24.0	8.6	ND (0.50)	11.7
		24-Apr-14	3V	0.72	27.0	8.2	ND (0.50)	12.3
		25-Sep-14	MP	0.80	26.0	7.9	ND (0.50)	12.0
		03-Dec-14	MP	0.61	27.0	7.3	2.4	12.0
MW-65-225	DA	19-Feb-14	3V	2.4	36.0	6.6	ND (0.50)	8.13
		29-Apr-14	3V	2.2	39.0	5.2	ND (0.50)	6.89
		25-Sep-14	MP	2.6	55.0	ND (2.5)	12.0	2.20
		03-Dec-14	MP	2.9	58.0	ND (2.5)	56.0	2.30
MW-66-165	SA	19-Feb-14	3V	1.2	5.8	38.0	ND (0.50)	35.3
		01-May-14	3V	1.2	5.6	34.0 J	ND (0.50) J	33.4
		01-May-14 FD	3V	1.3	5.8	35.0 J	ND (0.50) J	34.1
		10-Dec-14	MP	1.1	5.1	30.0	ND (0.50)	30.0
MW-66-230	DA	26-Feb-14	3V	9.5	90.0	12.0	ND (2.5) J	16.1
		07-May-14	3V	8.5	81.0	11.0	ND (0.50)	13.5
		22-Dec-14	MP	6.6	82.0	11.0	35.0	14.0
MW-66BR-270	BR	26-Feb-14	3V	ND (0.50)	16.0	ND (2.5)	ND (2.5)	0.0594
		13-May-14	3V	ND (0.50)	13.0	ND (12)	ND (0.50)	ND (0.010)
		16-Dec-14	3V	ND (0.50)	2.9	ND (2.5)	860	ND (0.050)
MW-67-185	SA	24-Feb-14	3V	1.4	9.9	190	ND (0.50)	39.4
		05-May-14	3V	1.5	8.9	240	ND (0.50)	45.4
		11-Dec-14	MP	1.2	12.0	250	ND (0.50)	51.0
MW-67-225	MA	24-Feb-14	3V	3.2	35.0	72.0	ND (0.50)	23.9
		06-May-14	3V	3.1	37.0	75.0	ND (0.50)	23.5
		11-Dec-14	MP	3.1	41.0	85.0	ND (0.50)	26.0
MW-67-260	DA	24-Feb-14	3V	13.0	82.0	ND (2.5)	37.0	1.38
		05-May-14	3V	11.0	72.0	ND (2.5)	58.0	1.21
		11-Dec-14	MP	8.0	87.0	0.78	130	0.600
MW-68-180	SA	27-Feb-14	3V	2.6	52.0	17.0	ND (0.50)	30.1

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-68-180	SA	12-May-14	3V	2.9	39.0	13.0	ND (0.50)	14.9
		30-Sep-14	MP	2.5	50.0	18.0	ND (0.50)	28.0
		09-Dec-14	MP	2.5	48.0	16.0	ND (0.50)	30.0
MW-68-240	DA	25-Feb-14	3V	1.9	22.0	4.9	ND (2.5)	4.97
		06-May-14	3V	1.9	20.0	4.3	ND (0.50)	4.66
		06-May-14 FD	3V	1.8	20.0	5.1	ND (0.50)	4.50
		18-Dec-14	MP	1.6	23.0	5.3	43.0	4.40
MW-68BR-280	BR	27-Feb-14	3V	1.5	83.0	ND (2.5)	83.0	ND (0.010)
		13-May-14	3V	1.3	73.0	ND (2.5)	39.0	ND (0.010)
		18-Dec-14	3V	1.2	63.0	ND (2.5)	ND (2.5)	ND (0.050)
MW-69-195	BR	19-Feb-14	3V	2.4	81.0	12.0	ND (0.50)	18.0
		01-May-14	3V	2.3	84.0	12.0	ND (0.50)	19.3
		25-Sep-14	3V	2.5	90.0	12.0	ND (0.50)	16.0
		25-Sep-14 FD	3V	2.3	83.0	11.0	ND (0.50)	17.0
		11-Dec-14	3V	2.5	90.0	11.0	ND (0.50)	17.0
MW-70-105	BR	17-Feb-14	3V	5.0	94.0	4.0	140	3.67
		28-Apr-14	3V	4.6	100	3.1	130	3.22
		02-Dec-14	3V	4.5	84.0	3.3	120	3.70
MW-70BR-225	BR	25-Feb-14	3V	1.9	18.0	ND (2.5)	ND (0.50)	4.13
		05-May-14	3V	1.9	17.0	2.5	ND (0.50)	3.98
		16-Dec-14	3V	1.9	18.0	3.0	ND (0.50)	3.50
MW-71-035	SA	18-Feb-14	3V	1.5	62.0	3.9	16.0	2.89
		24-Apr-14	3V	1.3	59.0	3.7	ND (0.50)	2.19
		06-Nov-14	MP	1.3	31.0	5.2	360	0.670
MW-72-080	BR	18-Feb-14	3V	12.0	80.0	ND (2.5)	36.0	1.17
		24-Apr-14	3V	10.0	76.0	ND (2.5)	ND (0.50)	0.991
		22-Sep-14	3V	9.4	72.0	ND (2.5)	25.0	1.10
		01-Dec-14	3V	12.0	82.0	ND (2.5)	21.0	1.10
MW-72BR-200	BR	17-Feb-14	3V	15.0	79.0	ND (2.5)	7.2	0.132
		17-Feb-14 FD	3V	15.0	78.0	ND (2.5)	7.1	0.127
		21-Apr-14	3V	14.0	75.0	ND (2.5)	ND (0.50)	0.103
		24-Sep-14	3V	14.0	82.0	ND (2.5)	6.2	0.0930
		17-Nov-14	3V	16.0	78.0	ND (12)	ND (2.5)	0.150
MW-73-080	BR	18-Feb-14	3V	1.5	21.0	5.5	ND (0.50)	4.71
		29-Apr-14	3V	1.4	22.0	4.7	ND (0.50)	4.95
		23-Sep-14	3V	2.0	24.0	2.7	ND (0.50)	3.30
		02-Dec-14	3V	1.4	22.0	3.7	ND (0.50)	3.80

TABLE 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-74-240	BR	26-Feb-14	3V	13.0	73.0	1.4	ND (0.50)	0.0280
		01-May-14	3V	12.0	48.0	1.9	ND (0.50)	0.514
		11-Dec-14	3V	9.7	58.0	0.56	ND (0.50)	0.400
OW-3D	DA	12-Nov-14	MP	---	25.0	ND (0.50)	ND (0.50)	---
OW-3M	MA	12-Nov-14	MP	---	16.0	0.62	ND (0.50)	---
PE-1	DA	07-Jan-14	3V	---	---	---	51.0	ND (0.50)
		04-Feb-14	3V	---	---	---	54.5	ND (0.50)
		04-Mar-14	3V	---	---	---	56.0	ND (0.50)
		08-Apr-14	3V	---	---	---	66.3	ND (0.50)
		06-May-14	3V	---	---	---	72.2	ND (0.50)
		03-Jun-14	3V	---	---	---	68.7	ND (0.50)
		01-Jul-14	3V	---	---	---	62.2	ND (0.50)
		05-Aug-14	3V	---	---	---	62.0	ND (0.50)
		02-Sep-14	3V	---	---	---	61.6	ND (0.50)
		07-Oct-14	3V	---	---	---	61.7	ND (0.50)
		04-Nov-14	3V	---	---	---	67.6	ND (0.50)
		02-Dec-14	3V	---	---	---	68.4	ND (0.50)
PGE-8 [a]	BR	07-Jan-15	3V	---	100	ND (12)	---	ND (0.050)
TW-1	SA-MA-DA	20-Feb-14	3V	---	15.0	20.0	---	21.6
		13-May-14	3V	---	15.0	17.0	---	19.5
		22-Dec-14	3V	---	13.0	15.0	---	21.0
TW-2S [a]	SA-MA	13-Jan-15	3V	---	15.0	2.8	---	4.30
TW-3D	DA	07-Jan-14	3V	---	---	---	6.9	3.84
		04-Feb-14	3V	---	---	---	7.1	3.93
		04-Mar-14	3V	---	---	---	8.7	3.69
		08-Apr-14	3V	---	---	---	7.0	3.27
		06-May-14	3V	---	---	---	8.9	3.33
		03-Jun-14	3V	---	---	---	7.9	3.28
		01-Jul-14	3V	---	---	---	7.1	3.44
		05-Aug-14	3V	---	---	---	7.5	3.42
		02-Sep-14	3V	---	---	---	7.1	3.26
		07-Oct-14	3V	---	---	---	8.6	3.29
		04-Nov-14	3V	---	---	---	8.6	2.84
		02-Dec-14	3V	---	---	---	9.4	3.26

Notes:

(---) = data not collected, available, or rejected.
3V = three volume.
COPC = contaminants of potential concern.
FD = field duplicate sample.
J = concentration or reporting limit estimated by laboratory or data validation.
mg/L = milligrams per liter.
MP = minimal drawdown/micro purge.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.

Nitrate samples were analyzed using USEPA Method 4500NO3, except for TW-3D and PE-1, which were analyzed using USEPA Method 300.0. USEPA Method 4500NO3 reports a combination of nitrate and nitrite as nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for USEPA Method 4500NO3 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as nitrogen.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

[a] Fourth Quarter 2014 data was collected January 2015 due to field logistical issues.

The background study upper tolerance limit (UTL) for arsenic is 24.3 µg/L.
The USEPA and California maximum contaminant level (MCL) for arsenic is 10 µg/L.
The background study UTL for molybdenum is 36.3 µg/L.
There is no USEPA or California MCL for molybdenum.
The background study UTL for selenium is 10.3 µg/L.
The USEPA and California MCL for selenium is 50.0 µg/L.
The secondary USEPA and California MCL for manganese is 50 ug/L.
The background study UTL for nitrate as nitrogen is 5.03 mg/L.
The USEPA and California MCL for nitrate as nitrogen is 10 mg/L.
The background study UTL for fluoride is 7.1 mg/L.
The USEPA MCL for fluoride is 4 mg/L, and the California MCL for fluoride is 2 mg/L.

Wells are assigned to separate aquifer zones for results reporting:
SA = shallow interval of Alluvial Aquifer.
MA = mid-depth interval of Alluvial Aquifer.
DA = deep interval of Alluvial Aquifer.
PA = perched aquifer (unsaturated zone).
BR = well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

TABLE 3-2b

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Statistics, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Analyte	Units	Number of Wells Sampled	Number of Detects	Minimum Detect	Maximum Detect	Background Study UTL	Number Exceeding UTL	CA MCL	Number Exceeding MCL
Alluvial Aquifer									
Molybdenum, dissolved	µg/L	88	87	2	370	36.3	30	NE	---
Nitrate (as nitrogen)	mg/L	64	50	0.068	51	5.03	17	10	11
Selenium, dissolved	µg/L	88	43	0.55	250	10.3	11	50	3
Arsenic, dissolved	µg/L	83	82	0.16	40	24.3	2	10	10
Manganese, dissolved	µg/L	101	58	2.4	6000	50	41	50	41
Fluoride	mg/L	7	6	0.73	19	NE	---	NE	---
Bedrock									
Molybdenum, dissolved	µg/L	22	22	2.2	100	36.3	13	NE	---
Nitrate (as nitrogen)	mg/L	22	16	0.059	17	5.03	2	10	1
Selenium, dissolved	µg/L	22	12	0.56	11	10.3	1	50	0
Arsenic, dissolved	µg/L	23	22	0.41	16	24.3	0	10	3
Manganese, dissolved	µg/L	23	11	17	860	50	8	50	8
Total									
Molybdenum, dissolved	µg/L	110	109	2	370	36.3	43	NE	---
Nitrate (as nitrogen)	mg/L	86	66	0.059	51	5.03	19	10	12
Selenium, dissolved	µg/L	110	55	0.55	250	10.3	12	50	3
Arsenic, dissolved	µg/L	106	104	0.16	40	24.3	2	10	13
Manganese, dissolved	µg/L	124	69	2.4	6000	50	49	50	49
Fluoride	mg/L	7	6	0.73	19	NE	---	NE	---

Notes:

(---) = not applicable
CA MCL = California maximum contaminant level.
COPC = contaminants of potential concern.
mg/L = milligrams per liter.
NE = not established.
µg/L = micrograms per liter.
UTL = background study upper tolerance limit.

The background study UTL was developed for alluvial wells only.

TABLE 3-3
Title 22 Metals Results, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	California MCL:	6	10	1,000	4	5	NE	50	1,000[a]	15	2	NE	100	50	100[a]	2	NE	5,000[a]
Well ID	**Sample Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Chromium**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
MW-10	12/02/2014	ND (0.5)	3.2	49.0	ND (0.5)	ND (0.5)	ND (0.5)	220	ND (1.0)	ND (1.0)	ND (0.2)	23.0	ND (1.0)	5.4	ND (0.5)	ND (0.5)	18.0	ND (10)
MW-12	02/25/2014	ND (0.5)	42.0	57.0	ND (0.5)	ND (0.5)	ND (0.5)	2,480	ND (5.0) J	ND (5.0)	ND (0.2)	12.0	ND (1.0)	15.0	ND (0.5)	ND (2.5)	18.0	ND (10)
	05/01/2014	ND (0.5)	38.0	54.0	ND (0.5)	ND (0.5)	ND (0.5)	2,200	ND (1.0) J	ND (1.0)	ND (0.2)	11.0	ND (1.0)	16.0	ND (0.5)	ND (0.5)	16.0	ND (10)
	12/15/2014	ND (0.5)	40.0	49.0	ND (2.5)	ND (0.5)	ND (0.5)	2,300	ND (1.0) J	ND (5.0)	ND (0.2)	12.0	ND (1.0)	19.0	ND (0.5)	ND (2.5)	19.0	ND (10)
MW-22	04/30/2014	ND (2.5)	12.0	53.0	ND (2.5)	ND (2.5)	1.1	ND (1.0)	ND (1.0) J	ND (5.0)	ND (0.2)	38.0	2.8	0.55	ND (2.5)	ND (2.5)	ND (1.0)	ND (10)
MW-26	12/15/2014	ND (0.5)	2.1	35.0	ND (0.5)	ND (0.5)	ND (0.5)	2,300	ND (1.0)	ND (1.0)	ND (0.2)	33.0	ND (1.0)	56.0	ND (0.5)	ND (0.5)	8.0	ND (10)
FD	12/15/2014	ND (0.5)	1.9	35.0	ND (0.5)	ND (0.5)	ND (0.5)	2,300	ND (1.0)	ND (1.0)	ND (0.2)	33.0	ND (1.0)	54.0	ND (0.5)	ND (0.5)	8.0	ND (10)
MW-44-115	11/12/2014	ND (0.5)	5.4	18.0	ND (2.5)	ND (0.5)	ND (0.5)	30.0	ND (1.0)	ND (5.0)	ND (0.2)	85.0	ND (1.0)	ND (0.5)	ND (0.5)	ND (2.5)	6.2	ND (10)
MW-50-200	12/16/2014	ND (2.5)	3.1	44.0	ND (2.5)	ND (2.5)	ND (0.5)	5,200	ND (5.0)	ND (5.0)	ND (0.2)	43.0	ND (5.0)	3.3	ND (2.5)	ND (2.5)	4.0	ND (50)
MW-51	12/15/2014	ND (0.5)	3.7	36.0	ND (2.5)	ND (0.5)	ND (0.5)	4,800	ND (1.0)	ND (5.0)	ND (0.2)	47.0	ND (1.0)	16.0	ND (2.5)	ND (2.5)	2.2	ND (10)

Notes:
[a] = Secondary USEPA MCL.
J = concentration or reporting limit estimated by laboratory or data validation.
MCL = maximum contaminant level.
ND = not detected at listed reporting limit.
NE = not established.
USEPA = United States Environmental Protection Agency.
µg/L = micrograms per liter.

Title 22 metals are the metals listed in California Code of Regulations, Title 22, Section 66261.24(a)(2)(A).

The MCLs listed, in micrograms per liter (µg/L), are the California primary drinking water standards, except where noted.

All results are dissolved metals concentrations in µg/L from field-filtered samples.

Metals analyzed by USEPA Methods SW6020A or SW7470A.

TABLE 3-4
Surface Water Sampling Results, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-BNS-D	01/14/2014	ND (0.2)	ND (1.0)	832	8.3 J
C-BNS-D	03/12/2014	ND (0.2)	ND (1.0)	868	8.1 J
C-BNS-D	05/21/2014	ND (0.2)	ND (1.0)	860	8.2 J
C-BNS-D	07/15/2014	ND (0.2)	ND (1.0)	930	8.2 J
C-BNS-D	11/19/2014	ND (0.2)	ND (1.0)	970	8.2 J
C-CON-S	01/15/2014	ND (0.2)	ND (1.0)	790	8.4 J
C-CON-S	03/13/2014	ND (0.2)	ND (1.0)	843	8.3 J
C-CON-S	05/22/2014	ND (0.2)	ND (1.0)	880	8.3 J
C-CON-S	07/16/2014	ND (0.2)	ND (1.0)	900	8.2 J
C-CON-S	11/20/2014	ND (0.2)	ND (1.0)	980	8.2 J
C-CON-D	01/15/2014	ND (0.2)	ND (1.0)	830	8.5 J
C-CON-D	03/13/2014	ND (0.2)	ND (1.0)	840	8.3 J
C-CON-D	05/22/2014	ND (0.2)	ND (1.0)	890	8.3 J
C-CON-D	07/16/2014	ND (0.2)	ND (1.0)	900	8.2 J
C-CON-D	11/20/2014	ND (0.2)	ND (1.0)	990	8.2 J
C-I-3-S	01/14/2014	ND (0.2)	ND (1.0)	845	8.3 J
C-I-3-S	03/12/2014	ND (0.2)	ND (1.0)	849	8.2 J
C-I-3-S	05/21/2014	ND (0.2)	ND (1.0)	580	8.3 J
C-I-3-S	07/15/2014	ND (0.2)	ND (1.0)	920	8.2 J
C-I-3-S	11/19/2014	ND (0.2)	ND (1.0)	980	8.2 J
C-I-3-D	01/14/2014	ND (0.2)	ND (1.0)	843	8.3 J
C-I-3-D	03/12/2014	ND (0.2)	ND (1.0)	853	8.2 J
C-I-3-D	05/21/2014	ND (0.2)	ND (1.0)	860	8.3 J
C-I-3-D	07/15/2014	ND (0.2)	ND (1.0)	920	8.2 J
C-I-3-D	11/19/2014	ND (0.2)	ND (1.0)	980	8.3 J
C-MAR-S	01/15/2014	ND (0.2)	ND (1.0)	814	8.2 J
C-MAR-S	05/21/2014	ND (0.2)	ND (1.0)	920	7.8 J
C-MAR-S	07/15/2014	ND (0.2)	ND (1.0)	990	7.8 J
C-MAR-S	11/19/2014	ND (0.2)	ND (1.0)	1200	8.0 J
C-MAR-D	03/12/2014	ND (0.2)	ND (1.0)	911	7.9 J
C-MAR-D	05/21/2014	ND (0.2)	ND (1.0)	920	7.9 J
C-NR1-S	01/15/2014	ND (0.2)	ND (1.0)	786	8.2 J
C-NR1-S	03/13/2014	ND (0.2)	ND (1.0)	855	8.3 J
C-NR1-S	05/22/2014	ND (0.2)	ND (1.0)	890	8.3 J
C-NR1-S	07/16/2014	ND (0.2)	ND (1.0)	900	8.3 J
C-NR1-S	11/20/2014	ND (0.2)	ND (1.0)	980	8.3 J
C-NR1-D	01/15/2014	ND (0.2)	ND (1.0)	796	8.4 J

TABLE 3-4
Surface Water Sampling Results, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-NR1-D	03/13/2014	ND (0.2)	ND (1.0)	847	8.3 J
C-NR1-D	05/22/2014	ND (0.2)	ND (1.0)	880	8.3 J
C-NR1-D	07/16/2014	ND (0.2)	ND (1.0)	900	8.2 J
C-NR1-D	11/20/2014	ND (0.2)	ND (1.0)	970	8.2 J
C-NR3-S	01/15/2014	ND (0.2)	ND (1.0)	812	8.3 J
C-NR3-S	03/13/2014	ND (0.2)	ND (1.0)	852	8.1 J
C-NR3-S	05/22/2014	ND (0.2)	ND (1.0)	880	8.3 J
C-NR3-S	07/16/2014	ND (0.2)	ND (1.0)	910	8.3 J
C-NR3-S	11/20/2014	ND (0.2)	ND (1.0)	980	8.2 J
C-NR3-D	01/15/2014	ND (0.2)	ND (1.0)	781	8.3 J
C-NR3-D	03/13/2014	ND (0.2)	ND (1.0)	851	8.3 J
C-NR3-D	05/22/2014	ND (0.2)	ND (1.0)	890	8.3 J
C-NR3-D	07/16/2014	ND (0.2)	ND (1.0)	900	8.3 J
C-NR3-D	11/20/2014	ND (0.2)	ND (1.0)	980	8.2 J
C-NR4-S	01/15/2014	ND (0.2)	ND (1.0)	795	8.3 J
C-NR4-S	03/13/2014	ND (0.2)	ND (1.0)	832	8.3 J
C-NR4-S	05/22/2014	ND (0.2)	ND (1.0)	890	8.3 J
C-NR4-S	07/16/2014	ND (0.2)	ND (1.0)	920	8.2 J
C-NR4-S	11/20/2014	ND (0.2)	ND (1.0)	650	8.2 J
C-NR4-D	01/15/2014	ND (0.2)	ND (1.0)	804	8.3 J
C-NR4-D	03/13/2014	ND (0.2)	ND (1.0)	847	8.2 J
C-NR4-D	05/22/2014	ND (0.2)	ND (1.0)	880	8.3 J
C-NR4-D	07/16/2014	ND (0.2)	ND (1.0)	910	8.3 J
C-NR4-D	11/20/2014	ND (0.2)	ND (1.0)	970	8.2 J
C-R22a-S	01/14/2014	ND (0.2)	ND (1.0)	873	8.3 J
C-R22a-S	03/12/2014	ND (0.2)	ND (1.0)	853	8.2 J
C-R22a-S	05/21/2014	ND (0.2)	ND (1.0)	870	8.3 J
C-R22a-S	07/15/2014	ND (0.2)	ND (1.0)	920	8.3 J
C-R22a-S	11/19/2014	ND (0.2)	ND (1.0)	980	8.2 J
C-R22a-D	01/14/2014	ND (0.2)	ND (1.0)	872	8.3 J
C-R22a-D	03/12/2014	ND (0.2)	ND (1.0)	862	8.3 J
C-R22a-D	05/21/2014	ND (0.2)	ND (1.0)	870	8.3 J
C-R22a-D	07/15/2014	ND (0.2)	ND (1.0)	920	8.2 J
C-R22a-D	11/19/2014	ND (0.2)	ND (1.0)	980	8.3 J
C-R27-S	01/14/2014	ND (0.2)	ND (1.0)	878	8.3 J
C-R27-S	03/12/2014	ND (0.2)	ND (1.0)	848	8.2 J
C-R27-S	05/21/2014	ND (0.2)	ND (1.0)	870	8.3 J

TABLE 3-4
Surface Water Sampling Results, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-R27-S	07/15/2014	ND (0.2)	ND (1.0)	920	8.2 J
C-R27-S	11/19/2014	ND (0.2)	ND (1.0)	970	8.2 J
C-R27-D	01/14/2014	ND (0.2)	ND (1.0)	876	8.3 J
C-R27-D	03/12/2014	ND (0.2)	ND (1.0)	852	8.3 J
C-R27-D	05/21/2014	ND (0.2)	ND (1.0)	870	8.3 J
C-R27-D	07/15/2014	ND (0.2)	ND (1.0)	920	8.2 J
C-R27-D	11/19/2014	ND (0.2)	ND (1.0)	980	8.3 J
C-TAZ-S	01/14/2014	ND (0.2)	ND (1.0)	877	8.3 J
C-TAZ-S	03/12/2014	ND (0.2)	ND (1.0)	857	8.3 J
C-TAZ-S	05/21/2014	ND (0.2)	ND (1.0)	890	8.3 J
C-TAZ-S	07/15/2014	ND (0.2)	ND (1.0)	910	8.3 J
C-TAZ-S	11/19/2014	ND (0.2)	ND (1.0)	970	8.2 J
C-TAZ-D	01/14/2014	ND (0.2)	ND (1.0)	878	8.3 J
C-TAZ-D	03/12/2014	ND (0.2)	ND (1.0)	851	8.3 J
C-TAZ-D	05/21/2014	ND (0.2)	ND (1.0)	880	8.3 J
C-TAZ-D	07/15/2014	ND (0.2)	ND (1.0)	920	8.3 J
C-TAZ-D	11/19/2014	ND (0.2)	ND (1.0)	970	8.2 J
Shoreline Samples					
R-19	01/14/2014	ND (0.2)	ND (1.0)	856	8.3 J
R-19	03/13/2014	ND (0.2)	ND (1.0)	823	8.3 J
R-19	05/22/2014	ND (0.2)	ND (1.0)	880	8.3 J
R-19	07/16/2014	ND (0.2)	ND (1.0)	920	8.3 J
R-19	11/20/2014	ND (0.2)	ND (1.0)	980	8.3 J
R-28	01/14/2014	ND (0.2)	ND (1.0)	863	8.3 J
R-28	03/13/2014	ND (0.2)	ND (1.0)	822	8.3 J
R-28	05/22/2014	ND (0.2)	ND (1.0)	890	8.3 J
R-28	07/16/2014	ND (0.2)	ND (1.0)	910	8.2 J
R-28	11/20/2014	ND (0.2)	ND (1.0)	970	8.3 J
R63	01/14/2014	ND (0.2)	ND (1.0)	893	8.3 J
R63	03/12/2014	ND (0.2)	ND (1.0)	853	8.2 J
R63	05/21/2014	ND (0.2)	ND (1.0)	880	8.3 J
R63	07/15/2014	ND (0.2)	ND (1.0)	900	8.1 J
R63	11/19/2014	ND (0.2)	ND (1.0)	970	8.2 J
RRB	01/15/2014	ND (0.2)	ND (1.0)	927	8.5 J
RRB	03/13/2014	ND (0.2)	ND (1.0)	827	8.2 J
RRB	05/22/2014	ND (0.2)	ND (1.0)	900	8.2 J
RRB	07/16/2014	ND (0.2)	ND (1.0)	920	8.0 J

TABLE 3-4
Surface Water Sampling Results, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
Shoreline Samples					
RRB	11/20/2014	ND (0.2)	ND (1.0)	1000	8.2 J
Other Surface Water Monitoring Locations					
SW1	01/14/2014	ND (0.2)	ND (1.0)	1150	7.8 J
SW1	03/12/2014	ND (0.2)	ND (1.0)	896	7.5 J
SW1	05/22/2014	ND (0.2)	ND (1.0)	900	8.0 J
SW1	07/16/2014	ND (0.2)	ND (1.0)	910	7.8 J
SW1	11/20/2014	ND (0.2)	ND (1.0)	1000	7.8 J
SW2	03/12/2014	ND (0.2)	ND (1.0)	864	7.8 J
SW2	05/22/2014	ND (0.2)	ND (1.0)	900	8.2 J
SW2	07/16/2014	ND (0.2)	ND (1.0)	920	7.8 J
SW2	11/20/2014	ND (0.2)	ND (1.0)	1000	8.0 J

Notes:

J = concentration or reporting limit estimated by laboratory or data validation.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.

Hexavalent chromium analytical Method USEPA 218.6 (reporting limit 0.2 µg/L for undiluted samples).

Other analytical methods: dissolved chromium - Method SW6020A; specific conductance - USEPA 120.1; pH -SM4500-HB.

pH is reported to two significant figures.

TABLE 3-5
COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Arsenic, dissolved	Barium, dissolved	Iron, Total	Iron, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nitrate/Nitrite as Nitrogen	Selenium, dissolved	Total suspended solids
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L
In-channel Locations										
C-BNS-D	01/14/2014	3.0	104	190	ND (20.0)	1.6	4.2	0.322	ND (5.0)	4.30
C-BNS-D	03/12/2014	2.4	102	48.3	ND (20.0)	0.98	3.9	0.412	ND (5.0)	ND (4.00)
C-BNS-D	05/21/2014	2.5	130	31.0	ND (20.0)	ND (0.50)	4.5	0.310	1.5	ND (10.0)
C-BNS-D	07/15/2014	2.4	110	31.0	ND (20.0)	ND (0.50)	4.1	0.350	1.4	ND (10.0)
C-BNS-D	11/19/2014	2.5	130	28.0	ND (20.0)	ND (0.50)	4.6	0.340	1.5	ND (10.0)
C-CON-S	01/15/2014	2.9	99.2	69.8	42.7	1.6	4.0	0.318	ND (5.0)	ND (4.00)
C-CON-S	03/13/2014	2.4	94.5	27.4	ND (20.0)	0.91	3.7	0.409	ND (5.0)	ND (4.00)
C-CON-S	05/22/2014	2.4	120	ND (20.0)	23.0	ND (0.50)	4.4	0.320	1.4	ND (10.0)
C-CON-S	07/16/2014	2.4	110	22.0	ND (20.0)	ND (0.50)	4.0	0.430	1.3	ND (10.0)
C-CON-S	11/20/2014	2.5	110	28.0	ND (20.0)	ND (0.50)	4.5	0.280	1.4	ND (10.0)
C-CON-D	01/15/2014	2.9	102	113	ND (20.0)	1.2	4.0	0.318	ND (5.0)	4.30
C-CON-D	03/13/2014	2.5	95.0	52.0	ND (20.0)	0.98	3.8	0.410	ND (5.0)	10.4
C-CON-D	05/22/2014	2.4	120	52.0	ND (20.0)	ND (0.50)	4.4	0.180	1.6	ND (10.0)
C-CON-D	07/16/2014	2.3	110	48.0	ND (20.0)	ND (0.50)	4.1	0.420	1.3	ND (10.0)
C-CON-D	11/20/2014	2.5	160	43.0	ND (20.0)	ND (0.50)	4.6	0.280	1.4	ND (5.00)
C-I-3-S	01/14/2014	2.9	101	148	35.2	1.5	4.0	0.312	ND (5.0)	ND (4.00)
C-I-3-S	03/12/2014	2.5	107	38.3	ND (20.0)	1.0	4.1	0.406	ND (5.0)	6.10
C-I-3-S	05/21/2014	2.4	120	ND (20.0)	ND (20.0)	ND (0.50)	4.4	0.280	1.5	ND (10.0)
C-I-3-S	07/15/2014	2.3	110	36.0	ND (20.0)	ND (0.50)	4.0	1.20	1.3	ND (10.0)
C-I-3-S	11/19/2014	2.5	120	ND (20.0)	ND (20.0)	ND (0.50)	4.6	0.340	1.5	ND (10.0)
C-I-3-D	01/14/2014	3.0	98.3	144	26.3	1.8	4.0	0.307	ND (5.0)	8.10
C-I-3-D	03/12/2014	2.6	106	58.6	ND (20.0)	1.2	4.0	0.407	ND (5.0)	11.6
C-I-3-D	05/21/2014	2.5	120	45.0	ND (20.0)	ND (0.50)	4.5	0.300	1.5	ND (10.0)
C-I-3-D	07/15/2014	2.3	110	61.0	ND (20.0)	ND (0.50)	3.9	0.380	1.4	ND (10.0)
C-I-3-D	11/19/2014	2.6	120	29.0	ND (20.0)	ND (0.50)	4.7	0.320	1.3	ND (10.0)
C-MAR-S	01/15/2014	2.7	104	1920	58.7	40.7	4.1	0.317	ND (5.0)	79.1
C-MAR-S	05/21/2014	2.1	120	490	ND (20.0)	35.0	4.5	0.200	1.5	62.0
C-MAR-S	07/15/2014	2.3	120	4000	ND (20.0)	81.0	3.9	0.290	1.1	150
C-MAR-S	11/19/2014	2.6	130	1900	ND (20.0)	61.0	4.8	0.250	1.2	46.0
C-MAR-D	03/12/2014	2.4	98.8	463	63.8	24.8	4.0	0.505	ND (5.0)	81.2
C-MAR-D	05/21/2014	2.1	120	2900	ND (20.0)	33.0	4.5	0.210	1.5	70.0
C-NR1-S	01/15/2014	2.9	102	66.8	22.9	1.4	4.0	0.312	ND (5.0)	ND (4.00)
C-NR1-S	03/13/2014	2.4	93.8	36.7	ND (20.0)	0.93	3.7	0.414	ND (5.0)	ND (4.00)
C-NR1-S	05/22/2014	2.5	120	ND (20.0)	ND (20.0)	ND (0.50)	4.6	0.270	1.4	ND (10.0)
C-NR1-S	07/16/2014	2.5	110	33.0	ND (20.0)	ND (0.50)	4.2	0.380	1.4	ND (10.0)
C-NR1-S	11/20/2014	2.5	120	ND (20.0)	ND (20.0)	ND (0.50)	4.6	0.290	1.4	ND (10.0)
C-NR1-D	01/15/2014	3.0	102	63.4	ND (20.0)	1.2	4.0	0.318	ND (5.0)	ND (4.00)
C-NR1-D	03/13/2014	2.5	95.6	46.9	ND (20.0)	0.98	3.8	0.427	ND (5.0)	6.10
C-NR1-D	05/22/2014	2.4	120	30.0	25.0	ND (0.50)	4.6	0.240	1.6	ND (10.0)
C-NR1-D	07/16/2014	2.5	120	41.0	ND (20.0)	ND (0.50)	4.3	0.380	1.4	ND (10.0)
C-NR1-D	11/20/2014	2.5	110	51.0	ND (20.0)	ND (0.50)	4.6	0.290	1.4	ND (10.0)
C-NR3-S	01/15/2014	2.9	100	28.3	ND (20.0)	1.0	3.9	0.315	ND (5.0)	ND (4.00)

TABLE 3-5
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Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide
Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Arsenic, dissolved	Barium, dissolved	Iron, Total	Iron, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nitrate/Nitrite as Nitrogen	Selenium, dissolved	Total suspended solids
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L
In-channel Locations										
C-NR3-S	03/13/2014	2.4	90.0	28.2	ND (20.0)	0.86	3.6	0.411	ND (5.0)	ND (4.00)
C-NR3-S	05/22/2014	2.4	120	ND (20.0)	ND (20.0)	ND (0.50)	4.5	0.310	1.7	ND (10.0)
C-NR3-S	07/16/2014	2.4	110	ND (20.0)	ND (20.0)	ND (0.50)	4.0	0.380	1.3	ND (10.0)
C-NR3-S	11/20/2014	2.6	120	24.0	ND (20.0)	ND (0.50)	4.7	0.290	1.5	ND (5.00)
C-NR3-D	01/15/2014	3.0	106	104	38.3	1.4	4.5	0.318	ND (5.0)	ND (4.00)
C-NR3-D	03/13/2014	2.5	96.6	45.8	ND (20.0)	1.4	3.9	0.402	ND (5.0)	4.40
C-NR3-D	05/22/2014	2.4	120	41.0	30.0	ND (0.50)	4.4	0.220	1.4	ND (10.0)
C-NR3-D	07/16/2014	2.4	110	37.0	ND (20.0)	ND (0.50)	3.9	0.350	1.3	ND (10.0)
C-NR3-D	11/20/2014	2.5	120	30.0	ND (20.0)	ND (0.50)	4.6	0.320	1.4	ND (10.0)
C-NR4-S	01/15/2014	3.0	104	61.3	ND (20.0)	1.1	4.1	0.319	ND (5.0)	ND (4.00)
C-NR4-S	03/13/2014	2.5	93.9	22.8	ND (20.0)	0.78	3.8	0.413	ND (5.0)	ND (4.00)
C-NR4-S	05/22/2014	2.4	120	ND (20.0)	ND (20.0)	ND (0.50)	4.4	0.190	1.4	ND (10.0)
C-NR4-S	07/16/2014	2.3	100	ND (20.0)	ND (20.0)	ND (0.50)	3.9	0.460	1.3	ND (10.0)
C-NR4-S	11/20/2014	2.6	120	ND (20.0)	ND (20.0)	ND (0.50)	4.9	0.350	1.5	ND (10.0)
C-NR4-D	01/15/2014	2.8	99.0	28.8	ND (20.0)	0.98	3.9	0.321	ND (5.0)	ND (4.00)
C-NR4-D	03/13/2014	2.4	93.4	29.3	ND (20.0)	0.81	3.8	0.407	ND (5.0)	7.60
C-NR4-D	05/22/2014	2.5	120	ND (20.0)	24.0	ND (0.50)	4.4	0.260	1.5	ND (10.0)
C-NR4-D	07/16/2014	2.4	110	29.0	ND (20.0)	ND (0.50)	4.2	0.390	1.4	ND (10.0)
C-NR4-D	11/20/2014	2.5	120	ND (20.0)	ND (20.0)	ND (0.50)	4.9	0.280	1.3	ND (5.00)
C-R22a-S	01/14/2014	2.9	99.0	276	23.8	3.3	4.0	0.325	ND (5.0)	9.60
C-R22a-S	03/12/2014	2.2	98.4	48.8	ND (20.0)	1.4	6.0	0.401	ND (5.0)	ND (4.00)
C-R22a-S	05/21/2014	2.4	110	37.0	ND (20.0)	ND (0.50)	4.3	0.290	1.3	ND (10.0)
C-R22a-S	07/15/2014	2.3	100	31.0	ND (20.0)	ND (0.50)	3.9	0.390	1.3	ND (10.0)
C-R22a-S	11/19/2014	2.5	120	52.0	ND (20.0)	ND (0.50)	4.8	0.310	1.4	ND (10.0)
C-R22a-D	01/14/2014	2.9	100	215	32.0	3.3	3.9	0.319	ND (5.0)	9.40
C-R22a-D	03/12/2014	2.5	103	38.4	ND (20.0)	1.4	3.9	0.398	ND (5.0)	5.10
C-R22a-D	05/21/2014	2.4	120	26.0	ND (20.0)	ND (0.50)	4.3	0.220	1.5	ND (10.0)
C-R22a-D	07/15/2014	2.4	110	37.0	ND (20.0)	ND (0.50)	3.9	0.360	1.4	ND (10.0)
C-R22a-D	11/19/2014	2.5	120	49.0	ND (20.0)	ND (0.50)	4.8	0.320	1.3	ND (10.0)
C-R27-S	01/14/2014	3.0	99.8	178	21.2	2.8	4.0	0.311	ND (5.0)	4.60
C-R27-S	03/12/2014	2.3	100	34.3	ND (20.0)	1.1	3.8	0.401	ND (5.0)	ND (4.00)
C-R27-S	05/21/2014	2.5	120	27.0	21.0	ND (0.50)	4.5	0.230	1.5	ND (10.0)
C-R27-S	07/15/2014	2.4	110	22.0	ND (20.0)	ND (0.50)	4.1	0.380	1.3	ND (10.0)
C-R27-S	11/19/2014	2.5	120	40.0	ND (20.0)	ND (0.50)	4.6	0.290	1.5	ND (10.0)
C-R27-D	01/14/2014	2.9	97.3	169	40.2	2.0	3.9	0.310	ND (5.0)	5.30
C-R27-D	03/12/2014	2.3	98.8	44.9	ND (20.0)	0.85	3.7	0.407	ND (5.0)	5.40
C-R27-D	05/21/2014	2.3	110	53.0	23.0	ND (0.50)	4.4	0.470	1.5	ND (10.0)
C-R27-D	07/15/2014	2.3	110	39.0	ND (20.0)	ND (0.50)	4.0	0.730	1.3	ND (10.0)
C-R27-D	11/19/2014	2.5	120	47.0	ND (20.0)	ND (0.50)	4.6	0.320	1.4	ND (10.0)
C-TAZ-S	01/14/2014	2.9	99.6	70.7	ND (20.0)	2.0	4.0	0.312	ND (5.0)	ND (4.00)
C-TAZ-S	03/12/2014	2.3	98.4	49.5	26.0	1.2	3.8	0.408	ND (5.0)	5.60
C-TAZ-S	05/21/2014	2.4	120	660	ND (20.0)	ND (0.50)	4.5	0.250	1.4	ND (10.0)

TABLE 3-5
COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Arsenic, dissolved	Barium, dissolved	Iron, Total	Iron, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nitrate/Nitrite as Nitrogen	Selenium, dissolved	Total suspended solids
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L
In-channel Locations										
C-TAZ-S	07/15/2014	2.4	110	33.0	ND (20.0)	ND (0.50)	4.0	0.350	1.4	ND (10.0)
C-TAZ-S	11/19/2014	2.5	120	31.0	ND (20.0)	ND (0.50)	4.7	0.350	1.3	ND (10.0)
C-TAZ-D	01/14/2014	2.9	99.5	98.8	22.8	2.2	4.0	0.305	ND (5.0)	5.60
C-TAZ-D	03/12/2014	2.2	93.5	64.8	ND (20.0)	0.94	3.5	0.487	ND (5.0)	10.4
C-TAZ-D	05/21/2014	2.3	110	25.0	ND (20.0)	ND (0.50)	4.4	0.240	1.4	ND (10.0)
C-TAZ-D	07/15/2014	2.3	110	36.0	ND (20.0)	ND (0.50)	4.0	0.420	1.3	ND (10.0)
C-TAZ-D	11/19/2014	2.5	110	30.0	ND (20.0)	ND (0.50)	4.5	0.280	1.4	ND (10.0)
Shoreline Samples										
R-19	01/14/2014	2.9	102	1720	ND (20.0)	9.2	4.0	0.309	ND (5.0)	75.6
R-19	03/13/2014	2.4	92.6	42.4	ND (20.0)	1.2	3.7	0.421	ND (5.0)	ND (4.00)
R-19	05/22/2014	2.3	120	23.0	ND (20.0)	ND (0.50)	4.4	0.220	1.4	ND (10.0)
R-19	07/16/2014	2.3	110	66.0	ND (20.0)	ND (0.50)	4.0	0.410	1.4	ND (10.0)
R-19	11/20/2014	2.5	110	42.0	ND (20.0)	ND (0.50)	4.7	0.290	1.4	ND (5.00)
R-28	01/14/2014	2.9	102	1410	45.9	7.9	4.0	0.315	ND (5.0)	79.1
R-28	03/13/2014	2.3	99.3	41.3	ND (20.0)	1.3	4.0	0.410	ND (5.0)	ND (4.00)
R-28	05/22/2014	2.4	120	27.0	ND (20.0)	ND (0.50)	4.7	0.270	1.5	ND (10.0)
R-28	07/16/2014	2.4	110	45.0	41.0	ND (0.50)	4.0	0.370	1.4	ND (10.0)
R-28	11/20/2014	2.6	120	52.0	ND (20.0)	ND (0.50)	4.8	0.290	1.6	ND (5.00)
R63	01/14/2014	3.0	106	251	27.1	4.8	4.2	0.519	ND (5.0)	7.90
R63	03/12/2014	2.2	96.8	71.1	ND (20.0)	1.7	3.6	0.418	ND (5.0)	5.40
R63	05/21/2014	2.4	120	68.0	ND (20.0)	ND (0.50)	4.3	0.270	1.4	ND (10.0)
R63	07/15/2014	2.5	120	390	ND (20.0)	6.7	4.4	0.320	1.5	ND (10.0)
R63	11/19/2014	2.6	120	75.0	ND (20.0)	ND (0.50)	4.6	0.320	1.4	ND (10.0)
RRB	01/15/2014	3.0	123	278	ND (20.0)	91.0	3.8	0.134	ND (5.0)	13.9
RRB	03/13/2014	2.4	94.5	116	29.0	5.5	3.8	0.387	ND (5.0)	7.60
RRB	05/22/2014	2.2	120	400	ND (20.0)	7.3	4.4	0.490	1.3	18.0
RRB	07/16/2014	2.5	130	110	ND (20.0)	4.2	3.9	0.350	1.4	ND (10.0)
RRB	11/20/2014	2.4	140	360	ND (20.0)	14.0	4.7	0.270	1.3	10.0

Notes:
COPC = contaminants of potential concern (molybdenum, selenium, and nitrate).
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
TSS = total suspended solids.
µg/L = micrograms per liter.
USEPA = United States Environmental Protection Agency.

Geochemical indicator parameters (TSS and alkalinity).
In situ byproducts (arsenic, iron and manganese).

USEPA Methods:
Alkalinity - SM2320B.
Metals - SW6010B/SW6020A.
Nitrate - SM4500NO3.
Total Suspended Solids - SM2540D.

Table 4-1

Pumping Rate and Extracted Volume for IM System, Fourth Quarter 2014 and Annual 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Extraction Well ID	November 2014		December 2014		Fourth Quarter 2014		Annual 2014	
	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0
TW-02D	0.00	0	0.08	3,593	0.04	3,593	0.74	381,593
TW-03D	104.24	4,503,146	104.91	4,683,355	104.58	9,186,501	101.01	53,092,493
PE-01	27.84	1,202,562	28.24	1,260,500	28.04	2,463,062	26.86	14,123,929
TOTAL	**132.1**	**5,705,708**	**133.2**	**5,947,448**	**132.7**	**11,653,156**	**128.6**	**67,598,015**

Chromium Removed This Quarter (kg)	38.8
Chromium Removed This Year (kg)	159
Chromium Removed Project to Date (kg)	3700
Chromium Removed This Quarter (lb)	85.5
Chromium Removed This Year (lb)	349
Chromium Removed Project to Date (lb)	8150

Notes:

DTSC = Department of Toxic Substances Control.
gal = gallons.
gpm = gallons per minute.
IM = Interim Measures.
kg = kilograms.
lb = pounds.

[a] The "Average Pumping Rate" is the overall average during the reporting period, including system downtime, based on flow meter readings.

Chromium removed includes the period from October 1, 2014 through December 31, 2014. On July 23, 2010 DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from October 1, 2014 through December 31, 2014.

TABLE 4-2

Average Hydraulic Gradients Measured at Well Pairs, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well Pair[a]	Reporting Period	Mean Landward[b] Hydraulic Gradient (feet/foot)	Days in[c] Monthly Average
	November	0.0056	NA
Overall Average	December	0.0055	NA
Northern Gradient Pair	November	0.0021	30 / 30
MW-31-135 / MW-33-150	December	0.0020	31 / 31
Central Gradient Pair	November	0.0106	30 / 30
MW-45-95 / MW-34-100	December	0.0104	31 / 31
Southern Gradient Pair	November	0.0041	30 / 30
MW-45-95 / MW-27-85	December	0.0040	31 / 31

Notes:

NA = All available data used in calculating overall average except where noted.

a Refer to Figure 1-4 for location of well pairs.
b For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot.
c Number of days transducers in both wells were operating correctly / total number of days in month.

Table 4-3
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

	Davis Dam Release			Colorado River Elevation at I-3		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
January 2013	8,300	8,299	1	453.2	453.28	0.04
February 2013	10,600	10,972	-372	454.3	454.63	0.4
March 2013	15,200	15,545	-345	456.0	456.29	0.3
April 2013	17,600	17,090	510	456.9	456.74	-0.1
May 2013	15,800	15,592	208	456.4	456.44	0.0
June 2013	15,700	15,588	112	456.5	456.47	0.0
July 2013	14,400	13,165	1,235	456.0	455.79	-0.2
August 2013	13,100	12,185	915	455.4	455.43	0.0
September 2013	11,700	11,446	254	454.8	455.02	0.2
October 2013	12,300	12,497	-197	454.9	455.09	0.2
November 2013	9,700	8,918	782	454.0	453.98	0.0
December 2013	6,400	7,636	-1,236	452.4	452.81	0.4
January 2014	8,300	8,970	-670	452.8	453.27	0.5
February 2014	11,600	11,850	-250	454.3	454.67	0.3
March 2014	16,600	17,473	-873	456.4	456.70	0.3
April 2014	18,200	17,718	482	457.1	457.08	0.0
May 2014	16,700	16,622	78	456.8	456.68	-0.1
June 2014	15,900	15,917	-17	456.6	456.64	0.1
July 2014	15,100	14,640	460	456.3	456.24	0.0
August 2014	12,300	11,336	964	455.2	455.26	0.1
September 2014	13,100	12,211	889	455.3	455.30	0.0
October 2014	10,700	10,434	266	454.3	454.81	0.5
November 2014	10,700	10,575	125	454.3	454.22	-0.1
December 2014	6,400	7,235	-835	452.4	452.93	0.5
January 2015	10,600			454.3		

NOTES:
cfs = cubic feet per second; ft amsl = feet above mean sea level.
NA = Data unavailable during this time period.

Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon January 2015 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf.

The difference in I-3 elevation is the difference between the I-3 elevation predicted and the actual elevation measured at I-3. The source of this difference is differences between BOR projections and actual dam releases/Havasu reservoir levels, rather than the multiple regression error.

For data prior to 2013 please see: *Fourth Quarter 2013 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station,* Needles, California (CH2MHILL, 2014a)

TABLE 5-1
Summary of Pumping Rate and Extracted Volume for 2014 Reporting Period
Fourth Quarter 2014 and Annual Interim Measures Performance
Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Reporting Period	Target Pump Rate (gpm)	Actual Monthly Pump Rate (gpm)	Individual Extraction Well Operations				Total Volume (gallons)
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	
Jan-14	135	132.3	0	0	4,727,337	1,177,881	5,905,218
Feb-14	135	132.7	0	0	4,276,887	1,072,255	5,349,142
Mar-14	135	130.7	0	0	4,608,719	1,226,649	5,835,368
Apr-14	135	117.9	0	126,759	4,001,723	965,666	5,094,148
May-14	135	134.6	0	0	4,728,042	1,278,543	6,006,584
Jun-14	135	120.4	0	92,891	3,930,353	1,177,507	5,200,751
Jul-14	135	129.5	0	0	4,528,924	1,252,475	5,781,399
Aug-14	135	116.1	0	0	4,068,464	1,112,189	5,180,653
Sep-14	135	129.0	0	158,349	4,247,803	1,168,521	5,574,674
Oct-14	135	134.8	0	0	4,787,741	1,229,181	6,016,923
Nov-14	135	132.1	0	0	4,503,146	1,202,562	5,705,708
Dec-14	135	133.2	0	3,593	4,683,355	1,260,500	5,947,448
Totals for 2014 Annual Period		128.6	0	381,593	53,092,493	14,123,929	67,598,015

Notes:
gpm: gallons per minute
The target pumping rate of 135 gpm, excluding periods of planned and unplanned downtime, was maintained by pumping from extraction wells TW-3D and PE-1 during the 2014 reporting period.
Extraction well TW-2D was only used for interim service or to support field operations.

TABLE 5-2
Analytical Results for Extraction Wells, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)	Total Dissolved Solids (mg/L)	pH
TW-3D	07-Jan-14	761 LF	905	5,140	7.4 J
	04-Feb-14	804 LF	816	5,190	7.6 J
	04-Mar-14	752 LF	816	5,050	7.5 J
	08-Apr-14	772 LF	662	5,210	7.4 J
	06-May-14	742 LF	601	4,820	7.3 J
	03-Jun-14	737 LF	725	4,750	7.4 J
	01-Jul-14	736 LF	720	4,970	7.3 J
	05-Aug-14	695 LF	704	4,830	7.4 J
	02-Sep-14	729 LF	703	5,150	7.4 J
	07-Oct-14	733 LF	720	5,000	7.4 J
	04-Nov-14	706 LF	711	4,980	7.5 J
	02-Dec-14	757 LF	733	4,810	7.6 J
PE-1	07-Jan-14	5.6 LF	5.5	2,680	7.4 J
	04-Feb-14	6.0 LF	5.6	2,630	7.6 J
	04-Mar-14	4.8 LF	4.8	2,510	7.5 J
	08-Apr-14	4.2 LF	4.0	2,700	7.5 J
	06-May-14	4.3 LF	3.9	2,680	7.4 J
	03-Jun-14	4.1 LF	3.7	2,610	7.5 J
	01-Jul-14	3.7 LF	3.6	2,500	7.6 J
	05-Aug-14	3.9 LF	3.7	2,560	7.6 J
	02-Sep-14	4.0 LF	3.8	2,610	7.5 J
	07-Oct-14	4.2 LF	3.7	2,580	7.6 J
	04-Nov-14	4.7 LF	4.0	2,500	7.6 J
	02-Dec-14	4.9 LF	4.2	2,560	7.6 J

Notes:

J = concentration or reporting limit estimated by laboratory or data validation.
LF = lab filtered.
mg/L = milligrams per liter.
µg/L = micrograms per liter.

Groundwater samples from active extraction wells are taken at sample taps in Valve Vault 1 on the MW-20 bench.

Dissolved chromium was analyzed by Method SW6020A or USEPA200.8 or USEPA200.7, hexavalent chromium analyzed by Method SM3500-CrB or USEPA218.6, and total dissolved solids were analyzed by Method SM2540C.

TABLE 5-3
Calculated Hydraulic Gradients for Well Pairs by Month for 2014 Reporting Period
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

	Mean Landward Hydraulic Gradient (ft/ft)[a]			
Reporting Period 2014	Overall Average[b]	Northern Gradient Pair[c] MW-31-135 / MW-33-150	Central Gradient Pair MW-45-95 / MW-34-100	Southern Gradient Pair MW-45-95 / MW-27-85
January	0.0058	0.0020	0.0115	0.0039
February	0.0060	0.0022	0.0116	0.0042
March	0.0074	0.0027	0.0142	0.0052
April	0.0040	0.0024	0.0068	0.0027
May	0.0065	0.0023	0.0128	0.0045
June	0.0057	0.0021	0.0110	0.0041
July	0.0060	0.0022	0.0115	0.0042
August	0.0046	0.0021	0.0084	0.0032
September	0.0055	0.0024	0.0101	0.0040
October	0.0059	0.0021	0.0116	0.0040
November	0.0056	0.0021	0.0106	0.0041
December	0.0055	0.0020	0.0104	0.0040

Notes:

[a] For Interim measures pumping, the target landward gradient for the selected well pairs is 0.001 ft/ft

[b] Overall average gradients are calculated using all available data.

[c] Refer to Figure 1-4 for location of well pairs and Tables E-1 and E-2 for number of days in reporting period.

ft/ft = feet/foot

TABLE 7-1

Proposed Groundwater Monitoring Program Analytical Suite Modifications

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	[a]DTSC-approved Purge Method, beginning 3Q 2014	DTSC-approved Sampling Frequency, beginning 3Q 2014 [frequency for Cr(VI) and Cr sampling]	[c]Current IM Contingency Plan	Current IM Chemical Performance sampling (IMCP) (continues)	Current COPC Sampling (Mo, Se, NO3, and F where indicated) (continues)	Current By-Product Sampling (As, Mn) (continues)	Proposed water quality sampling at approved annual or biennial frequency	Proposed sampling for stable isotopes	Proposed Annual T22 Metals Sampling	Comments
MW-09	MP	Semi-annual, [b]BCW flow			Yes	Yes	Yes			
MW-10	MP	Semi-annual, [b]BCW flow			Yes		Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
[d]MW-11	MP	Semi-annual, [b]BCW flow			Yes	Yes	Yes			ISPT
MW-12	MP	Semi-annual			Yes		Yes		Yes (one round)	One round T22 metals, evaluate, former T22 well
MW-13	MP	Annual				Yes	Yes			
MW-14	MP	Semi-annual			Yes	Yes	Yes		Yes (biennial)	Biennial T22 metals (2015 and 2017) added for remedy IRL coverage
MW-15	MP	Annual					Yes			
MW-16	MP	Biennial					Yes (biennial)		Yes (one round)	One round T22 metals 2015, evaluate, former BKG well
MW-17	MP	Biennial					Yes (biennial)		Yes (one round)	One round T22 metals 2015, evaluate, former BKG well
MW-18	MP	Annual								
MW-19	MP	Semi-annual								
MW-20-070	MP	Semi-annual		Yes	Yes		Yes	Yes		
MW-20-100	MP	Semi-annual		Yes	Yes		Yes	Yes		
MW-20-130	MP	Semi-annual		Yes	Yes	Yes	Yes	Yes		
MW-21	MP	Semi-annual	Yes		Yes		Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-22	MP	Semi-annual				Yes	Yes	Yes (biennial)	Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-23-060	MP	Semi-annual				Yes	Yes			
MW-23-080	MP	Semi-annual				Yes	Yes			
[d]MW-24A	MP	Semi-annual			Yes	Yes	Yes (biennial)		Yes (biennial)	ISPT; Biennial T22 metals (2015 and 2017), former T22 well, TWB/IRL-6 area
[d]MW-24B	MP	Semi-annual			Yes	Yes	Yes (biennial)		Yes (biennial)	ISPT; Biennial T22 metals (2015 and 2017), added for IRL-6 area coverage
MW-24BR	3V	Annual			Yes	Yes	Yes			
MW-25	MP	Semi-annual		Yes	Yes	Yes	Yes	Yes		
MW-26	MP	Semi-annual		Yes	Yes	Yes	Yes	Yes	Yes	
MW-27-020	MP	Annual			Yes	Yes	Yes			
MW-27-060	MP	Annual			Yes, F	Yes	Yes			Fluoride with COPCs
MW-27-085	MP	Semi-annual	Yes		Yes, F	Yes	Yes			Fluoride with COPCs
MW-28-025	MP	Semi-annual			Yes	Yes	Yes			
MW-28-090	MP	Semi-annual	Yes		Yes, F	Yes	Yes			
MW-29	MP	Semi-annual			Yes	Yes	Yes			
MW-30-030	MP	Annual			Yes	Yes	Yes			
MW-30-050	MP	Annual			Yes	Yes	Yes			
MW-31-60	MP	Semi-annual		Yes		Yes	Yes	Yes		
MW-31-135	MP	Annual				Yes	Yes			
MW-32-020	MP	Annual	Yes			Yes	Yes			
MW-32-035	MP	Semi-annual	Yes	Yes	Yes	Yes	Yes (biennial)	Yes	Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-33-040	MP	Semi-annual	Yes		Yes, F	Yes	Yes			Fluoride with COPCs
MW-33-090	MP	Semi-annual	Yes		Yes, F	Yes	Yes	Yes		Fluoride with COPCs
MW-33-150	MP	Semi-annual	Yes		Yes, F	Yes	Yes	Yes		Fluoride with COPCs

TABLE 7-1

Proposed Groundwater Monitoring Program Analytical Suite Modifications

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	[a]DTSC-approved Purge Method, beginning 3Q 2014	DTSC-approved Sampling Frequency, beginning 3Q 2014 [frequency for Cr(VI) and Cr sampling]	[c]Current IM Contingency Plan	Current IM Chemical Performance sampling (IMCP) (continues)	Current COPC Sampling (Mo, Se, NO3, and F where indicated) (continues)	Current By-Product Sampling (As, Mn) (continues)	*Proposed water quality sampling at approved annual or biennial frequency*	*Proposed sampling for stable isotopes*	*Proposed Annual T22 Metals Sampling*	Comments
MW-33-210	MP	Semi-annual	Yes		Yes, F	Yes	Yes	Yes		Fluoride with COPCs
MW-34-055	MP	Annual		Yes	Yes	Yes	Yes	Yes		
MW-34-080	MP	Semi-annual	Yes	Yes	Yes		Yes	Yes		
MW-34-100	MP	Quarterly	Yes	Yes	Yes	Yes	Yes	Yes		
MW-35-060	MP	Semi-annual			Yes	Yes	Yes	Yes	Yes	Annual T22 metals (2015, 2016, 2017). Added for northern floodplain coverage, remedy IRZ area.
MW-35-135	MP	Semi-annual			Yes	Yes	Yes	Yes	Yes	Annual T22 metals (2015, 2016, 2017). Added for northern floodplain coverage, remedy IRZ area.
MW-36-020	MP	Annual				Yes	Yes			
MW-36-040	MP	Annual			Yes	Yes	Yes			
MW-36-050	MP	Annual				Yes	Yes			
MW-36-070	MP	Annual	Yes			Yes	Yes			
MW-36-090	MP	Semi-annual				Yes	Yes	Yes		
MW-36-100	MP	Semi-annual			Yes	Yes	Yes	Yes		
MW-37D	MP	Semi-annual			Yes		Yes			
MW-37S	MP	Annual				Yes	Yes			
[d]MW-38D	**MP & 3V**	Semi-annual			Yes	Yes	Yes			ISPT
[d]MW-38S	**MP & 3V**	Quarterly			Yes	Yes	Yes			ISPT
MW-39-040	MP	Annual	Yes			Yes				
MW-39-050	MP	Annual				Yes	Yes			
MW-39-060	MP	Annual			Yes	Yes	Yes			
MW-39-070	MP	Annual					Yes	Yes		
MW-39-080	MP	Annual					Yes	Yes		
MW-39-100	MP	Semi-annual			Yes	Yes	Yes	Yes		
MW-40D	**MP & grab trial**	Semi-annual			Yes	Yes	Yes			
MW-40S	**MP & grab trial**	Annual			Yes	Yes				
MW-41D	MP	Semi-annual			Yes	Yes	Yes			
MW-41M	MP	Annual			Yes	Yes	Yes			
MW-41S	MP	Annual			Yes	Yes	Yes			
MW-42-030	MP	Annual			Yes	Yes	Yes			
MW-42-055	MP	Semi-annual	Yes			Yes	Yes			
MW-42-065	MP	Semi-annual	Yes			Yes	Yes			
MW-43-025	MP	Annual				Yes	Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-43-075	MP	Annual	Yes			Yes	Yes			
MW-43-090	MP	Annual	Yes			Yes	Yes			
MW-44-070	MP	Semi-annual	Yes			Yes	Yes			
MW-44-115	MP	Quarterly	Yes		Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-44-125	MP	Semi-annual	Yes		Yes	Yes	Yes			
MW-45-095a	MP	*Annual*								*key gradient well, not listed in 2013 GMP report recommendations Table 7-2, propose no further sampling: this well is close to PE-1 extraction well*
MW-46-175	MP	Quarterly	Yes		Yes		Yes			

TABLE 7-1

Proposed Groundwater Monitoring Program Analytical Suite Modifications

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	[a]DTSC-approved Purge Method, beginning 3Q 2014	DTSC-approved Sampling Frequency, beginning 3Q 2014 [frequency for Cr(VI) and Cr sampling]	[c]Current IM Contingency Plan	Current IM Chemical Performance sampling (IMCP) (continues)	Current COPC Sampling (Mo, Se, NO3, and F where indicated) (continues)	Current By-Product Sampling (As, Mn) (continues)	Proposed water quality sampling at approved annual or biennial frequency	Proposed sampling for stable isotopes	Proposed Annual T22 Metals Sampling	Comments
MW-46-205	MP	Semi-annual	Yes				Yes			
MW-47-055	MP	Semi-annual	Yes			Yes	Yes	Yes		
MW-47-115	MP	Semi-annual	Yes					Yes		
MW-48	MP	Semi-annual					Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-49-135	MP	Annual					Yes	Yes		
MW-49-275	MP	Annual					Yes	Yes		
MW-49-365	MP	Annual					Yes	Yes		
MW-50-095	MP	Semi-annual					Yes			
MW-50-200	MP	Semi-annual					Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-51	MP	Semi-annual			Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
MW-52S	MP	Semi-annual				Yes				
MW-52M	MP	Semi-annual				Yes				
MW-52D	MP	Semi-annual				Yes				
MW-53M	MP	Semi-annual				Yes				
MW-53D	MP	Semi-annual				Yes				
OW-3S	3V	Annual					Yes			
OW-3M	MP	Annual					Yes			
OW-3D	MP	Annual					Yes			
PGE-7BR	3V	Annual					Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
PGE-8	3V	Annual			Yes		Yes			
TEST WELLS										
PE-1	tap	Monthly					Yes			
TW-1	3V	Semi-annual			Yes		Yes		Yes (one round)	One round T22 metals 2015, evaluate, former T22 well
TW-2S	tap	Annual			Yes		Yes			
TW-2D	tap	Annual					Yes			
TW-3D	tap	Monthly					Yes			
TW-4	3V	Biennial					Yes			
TW-5	3V	Biennial					Yes			
PARK MOABI										
PM-03	tap	Annual					Yes			
PM-04	tap	Annual					Yes			
ARIZONA										
MW-54-085	MP	Semi-annual				Yes	Yes			
MW-54-140	MP	Semi-annual				Yes	Yes			
MW-54-195	MP	Semi-annual				Yes	Yes			
MW-55-045	MP	Semi-annual					Yes			
MW-55-120	MP	Semi-annual					Yes			
MW-56S	MP	Semi-annual					Yes			
MW-56M	MP	Semi-annual					Yes			
MW-56D	MP	Semi-annual					Yes			
EAST RAVINE - TOPOCK COMPRESSOR STATION										

TABLE 7-1

Proposed Groundwater Monitoring Program Analytical Suite Modifications

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	[a]DTSC-approved Purge Method, beginning 3Q 2014	DTSC-approved Sampling Frequency, beginning 3Q 2014 [frequency for Cr(VI) and Cr sampling]	[c]Current IM Contingency Plan	Current IM Chemical Performance sampling (IMCP) (continues)	Current COPC Sampling (Mo, Se, NO3, and F where indicated) (continues)	Current By-Product Sampling (As, Mn) (continues)	Proposed water quality sampling at approved annual or biennial frequency	Proposed sampling for stable isotopes	Proposed Annual T22 Metals Sampling	Comments
MW-57-050	MP	checked Q & post rain					Yes			
MW-57-070	MP	Semi-annual			Yes	Yes	Yes			
MW-57-185	3V	Semi-annual			Yes	Yes	Yes			
MW-58-065	MP	checked Q & post rain					Yes			
MW-58BR	**MP pending new plan**	Quarterly			Yes	Yes	Yes			
MW-59-100	MP	Semi-annual			Yes	Yes	Yes		Yes	Annual T22 metals (2015, 2016, 2017). Added to supplement MW-48
MW-60-125	MP	Semi-annual			Yes	Yes	Yes			
MW-60BR-245	3V	Quarterly			Yes	Yes	Yes			
MW-61-110	3V	Semi-annual			Yes	Yes	Yes			
MW-62-065	MP	Quarterly			Yes	Yes	Yes			
MW-62-110	3V	Quarterly			Yes	Yes	Yes			
MW-62-190	3V	Semi-annual			Yes	Yes	Yes			
MW-63-065	MP	Quarterly			Yes	Yes	Yes			
MW-64BR	**MP pending new plan**	Quarterly			Yes	Yes	Yes			
MW-65-160	MP	Quarterly			Yes	Yes	Yes			
MW-65-225	MP	Quarterly			Yes	Yes	Yes			
MW-66-165	MP	Semi-annual			Yes	Yes	Yes			
MW-66-230	MP	Semi-annual			Yes	Yes	Yes			
MW-66BR-270	3V	Semi-annual			Yes	Yes	Yes			
MW-67-185	MP	Semi-annual			Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, highest Se result in ER/TCS investigation
MW-67-225	MP	Semi-annual			Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, highest Se result in ER/TCS investigation
MW-67-260	MP	Semi-annual			Yes	Yes	Yes			
MW-68-180	MP	Quarterly			Yes	Yes	Yes			
MW-68-240	MP	Semi-annual			Yes	Yes	Yes			
MW-68BR-280	3V	Semi-annual			Yes	Yes	Yes			
MW-69-195	MP	Quarterly			Yes	Yes	Yes			
MW-70-105	MP	Semi-annual			Yes	Yes	Yes			
MW-70BR-225	3V	Semi-annual			Yes	Yes	Yes			
MW-71-035	MP	Semi-annual			Yes	Yes	Yes			
MW-72-080	MP	Quarterly			Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, evaluate. Added for ER southeast coverage.
MW-72BR-200	3V	Quarterly			Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, evaluate. Added for ER southeast coverage.
MW-73-080	MP	Quarterly			Yes	Yes	Yes			
MW-74-240	MP	Semi-annual			Yes	Yes	Yes		Yes (one round)	One round T22 metals 2015, highest As result (and among highest Mo) in ER/TCS investigation

TABLE 7-1

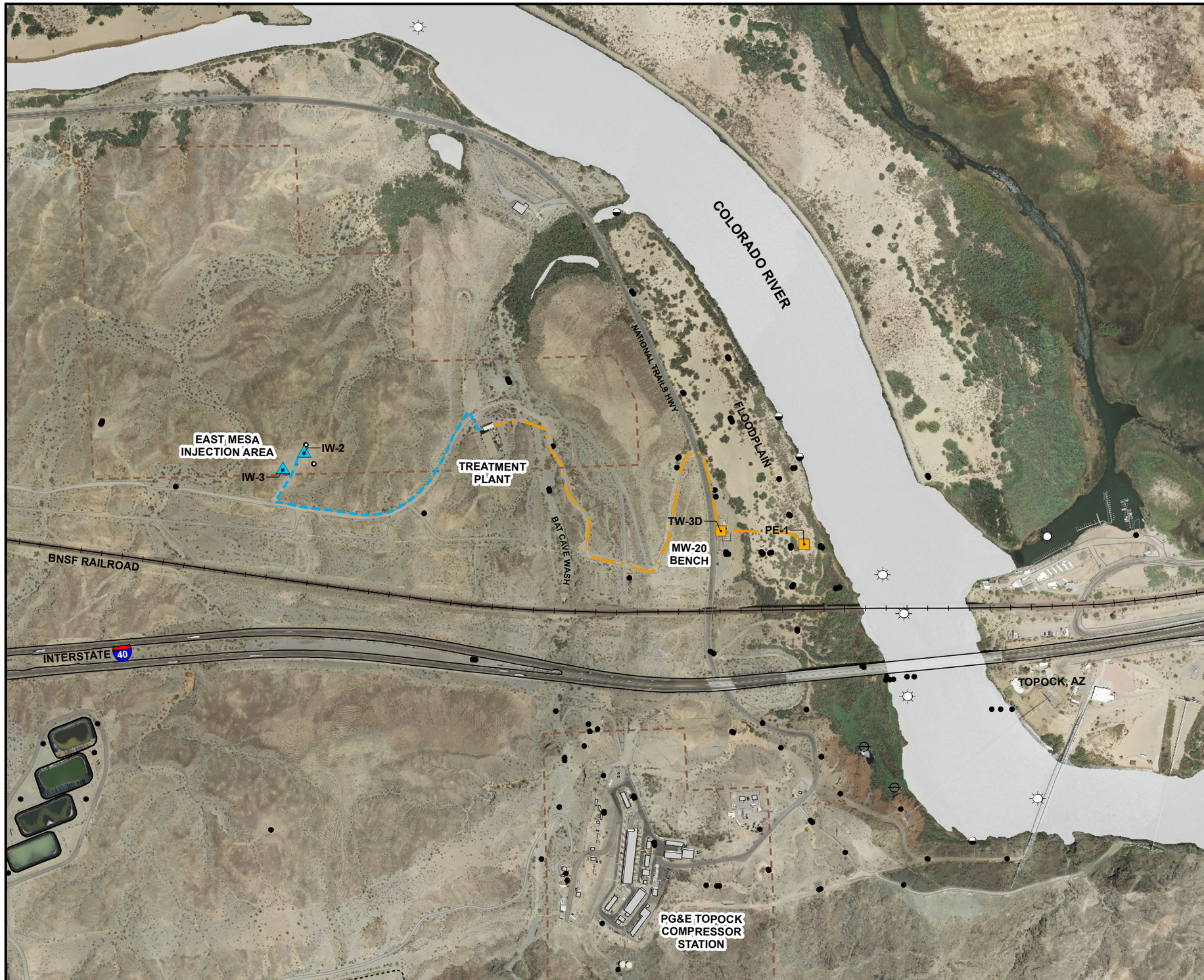
Proposed Groundwater Monitoring Program Analytical Suite Modifications

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Notes:

[a]Purge Method -	3V	Three volume purge sampling method
	MP	Micropurge sampling method
	grab trial	Both MP and HydraSleeve methods will be used 4Q 2014 and thru 2015 as grab sampling trial
	tap	Sampled from tap or port of extraction or supply well.
	pending new plan	A new sampling method will be proposed in 2015 for MW-58 and MW-64 and for selected long screen or bedrock wells not approved for MP
[b]Frequency -	BCW flow	To be sampled in the next quarterly event after a runoff event with flow throughout the Bat Cave Wash culverts (I-40 to IM3)
[c]IM Contingency Plan -		Set of 24 wells in the Interim Measure Contingency Plan with assigned Cr(VI) notification trigger levels.
[d]ISPT -		Well was used for monitoring in the upland in-situ pilot test and returned to GMP monitoring with the 4Q/Annual 2014 event.
Lab Analyses -	Contaminant of Potential Concern (COPC)	Mo, Se, and nitrate; and for specified wells, fluoride
	By-Products	arsenic (As) and manganese (Mn)
	Annual Water Quality	dissolved calcium (Ca), magnesium (Mg), sodium (Na), iron (Fe), manganese (Mn), bromide, chloride, sulfate total dissolved solids (TDS), alkalinity, and ammonia
	Stable Isotopes	Oxygen and Deuterium.
	T22 Metals	dissolved antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), mercury (Hg), molybdenum (Mo), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), vanadium (V), and zinc (Zn)
	IM Chemical Performance Monitoring Program	IMCP monitoring suite for 10 monitoring wells: dissolved Ca, Mg, Na, Mg, potassium, boron, bromide, chloride, sulfate, nitrate, TDS, alkalinity, and stable isotopes. Ammonia and iron will be added for internal evaluation of redox conditions.

Figures



VICINITY MAP

LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in Site-Wide Groundwater Monitoring Program (GMP)
- Monitoring Well in IM-3 Compliance Monitoring Program
- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- Groundwater Extraction/Influent Pipeline
- Treatment Plant Effluent Pipeline
- Property Line

Notes:

1. Location map shows Interim Measure No. 3 (IM-3) active facilities as of current report.
2. See Figures 1-2 and 1-3 for complete monitoring locations and identifications.

N

0 600 1,200 Feet

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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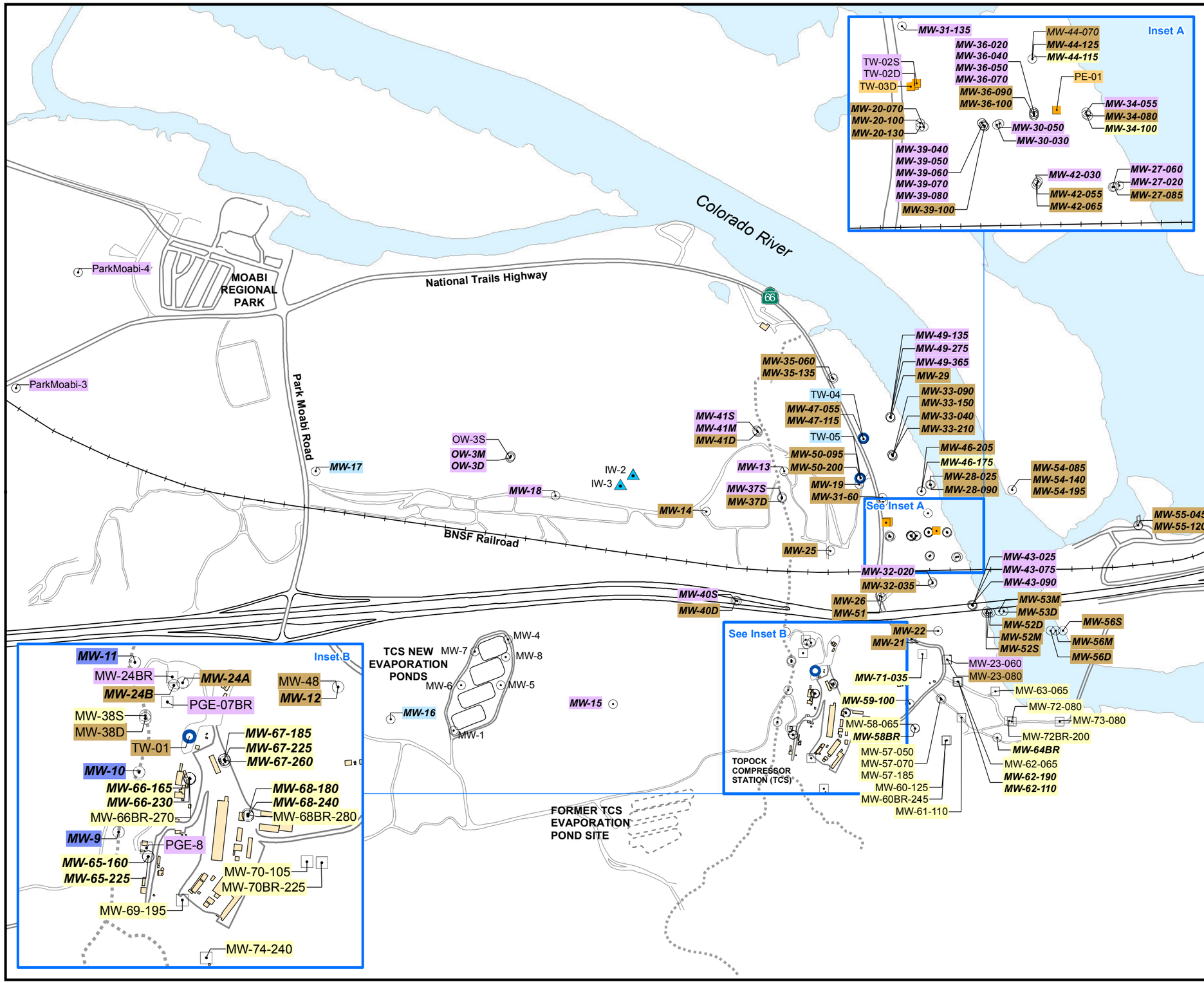
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE1-1_IM3_GMP_LOCS_2014Q4.MXD ECLARK1 2/5/2015 8:37:32 AM



LEGEND

- Groundwater Well Completed in Bedrock
- Injection Well
- Groundwater Monitoring Well
- Test Well or Supply Well (inactive)
- Extraction Well

Sampling Frequency for Groundwater Monitoring Program (GMP)

- MW-17 Biennial sampling
- MW-13 Annual sampling
- MW-09 Annual; plus the next quarterly event following any channel-wide flows in Bat Cave Wash with discharge through the highway culverts
- MW-21 Semiannual sampling
- TW-01 Quarterly sampling
- TW-3D Monthly sampling

Notes:
Bold/Italicized labels indicate sample collected using micropurge sampling method; otherwise, sample collected using the three-volume purge sampling method.

N

0 500 1,000 Feet

California State Plane NAD83 Zone 5 US Feet

FIGURE 1-2
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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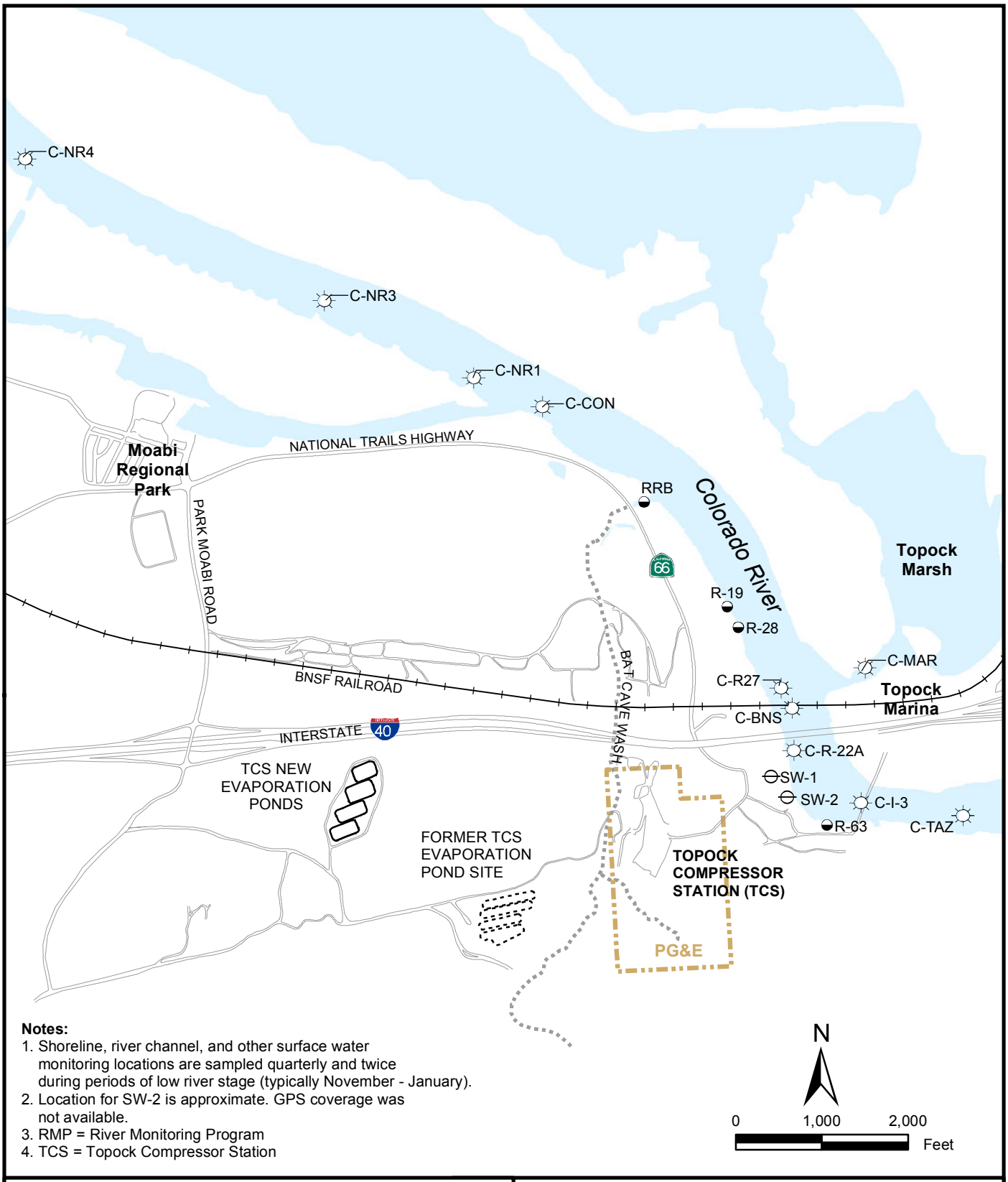

Notes:

1. Shoreline, river channel, and other surface water monitoring locations are sampled quarterly and twice during periods of low river stage (typically November - January).
2. Location for SW-2 is approximate. GPS coverage was not available.
3. RMP = River Monitoring Program
4. TCS = Topock Compressor Station

LEGEND

- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location

FIGURE 1-3
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR RMP

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE1-3_GMP_RIVER_SWLOCS_2014Q4.MXD ECLARK1 2/5/2015 8:40:23 AM

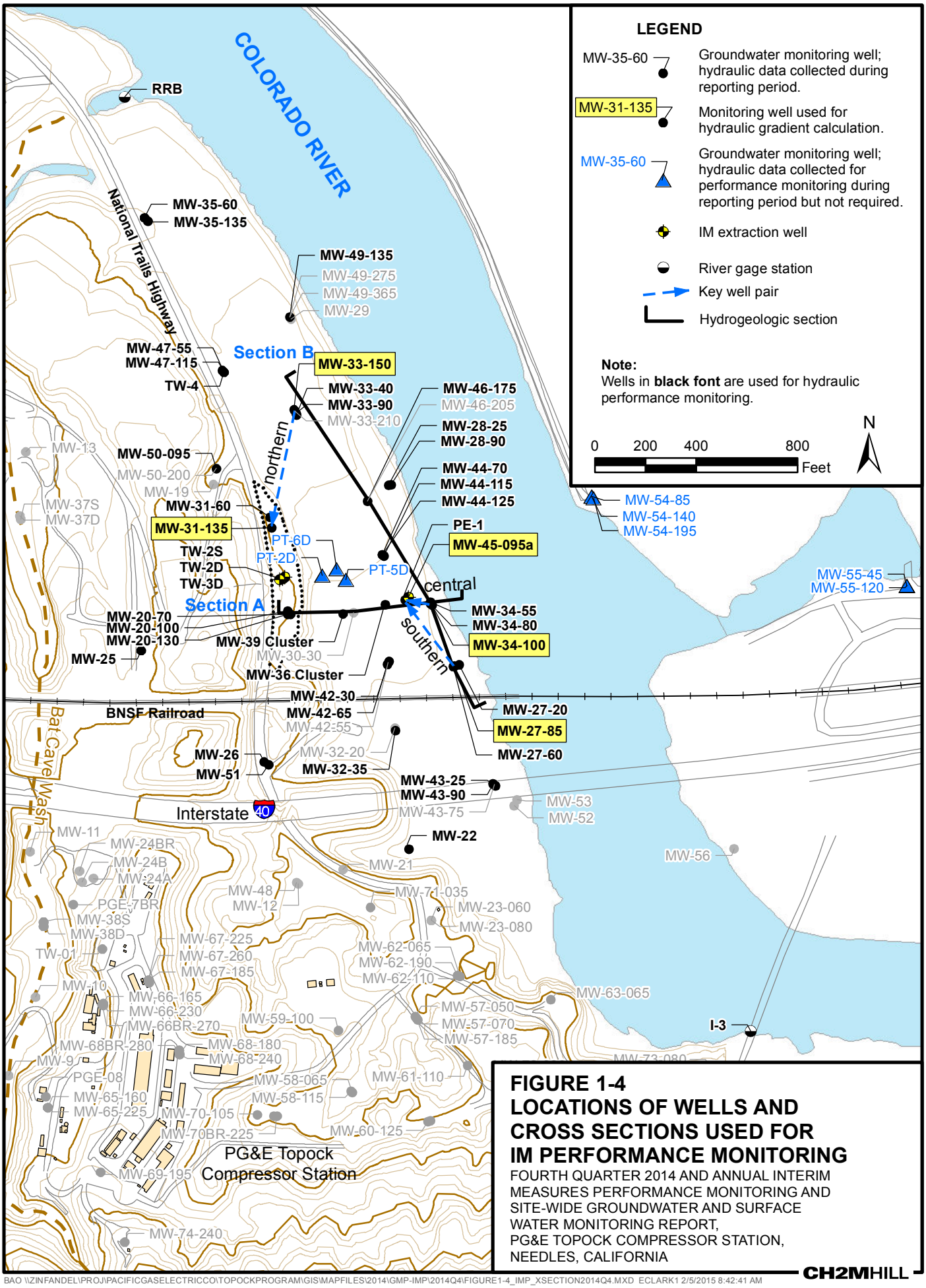

FIGURE 1-4
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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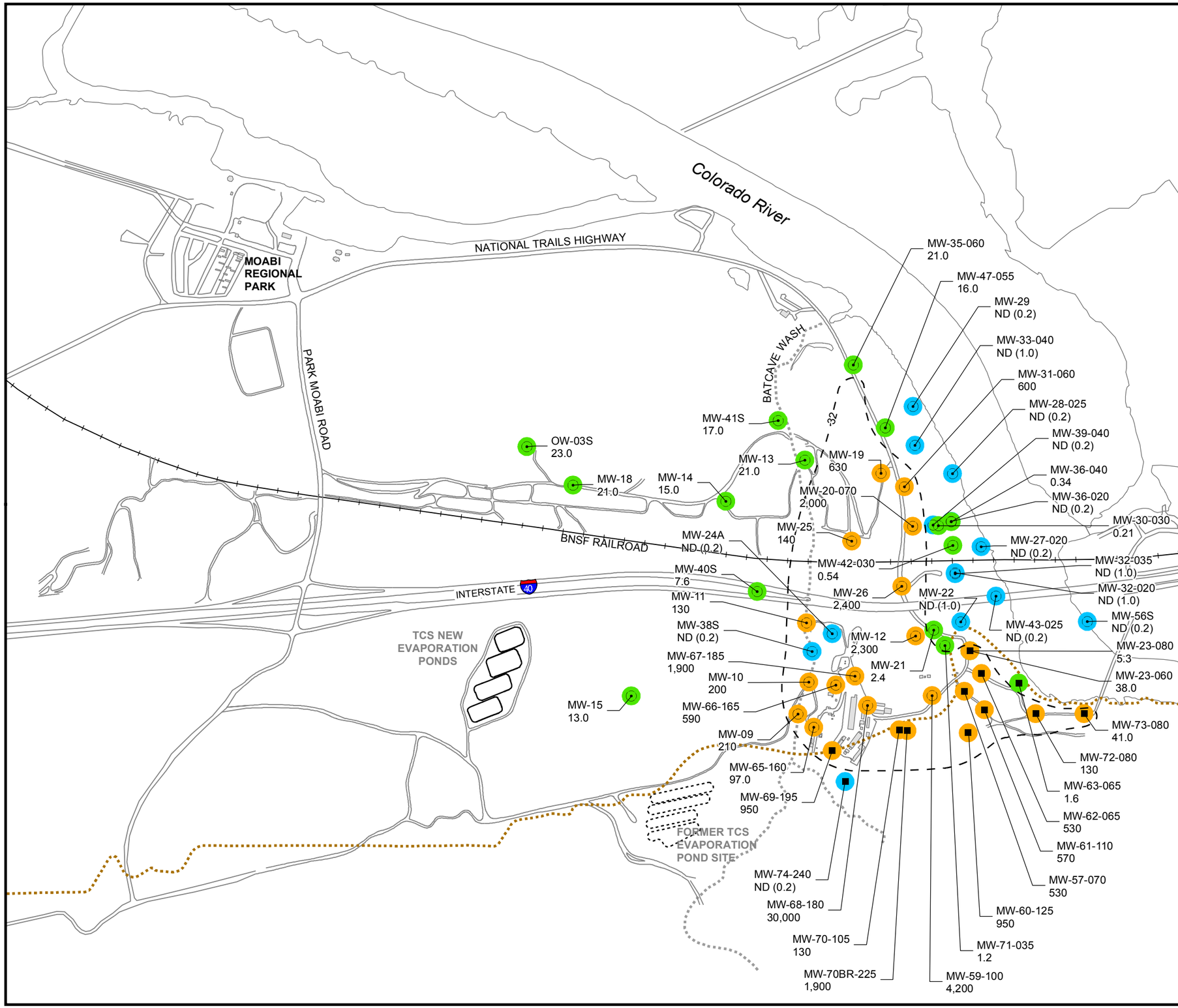
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE1-4_IMP_XSECTION2014Q4.MXD ECLARK1 2/5/2015 8:42:41 AM



LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Shallow zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations – Fourth Quarter 2014

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

-32- Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations > 32 ug/L based on Fourth Quarter 2014 groundwater sampling results.

Approximate bedrock contact at 455 feet above mean sea level.

Notes:
1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1a
Cr(VI) SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2014
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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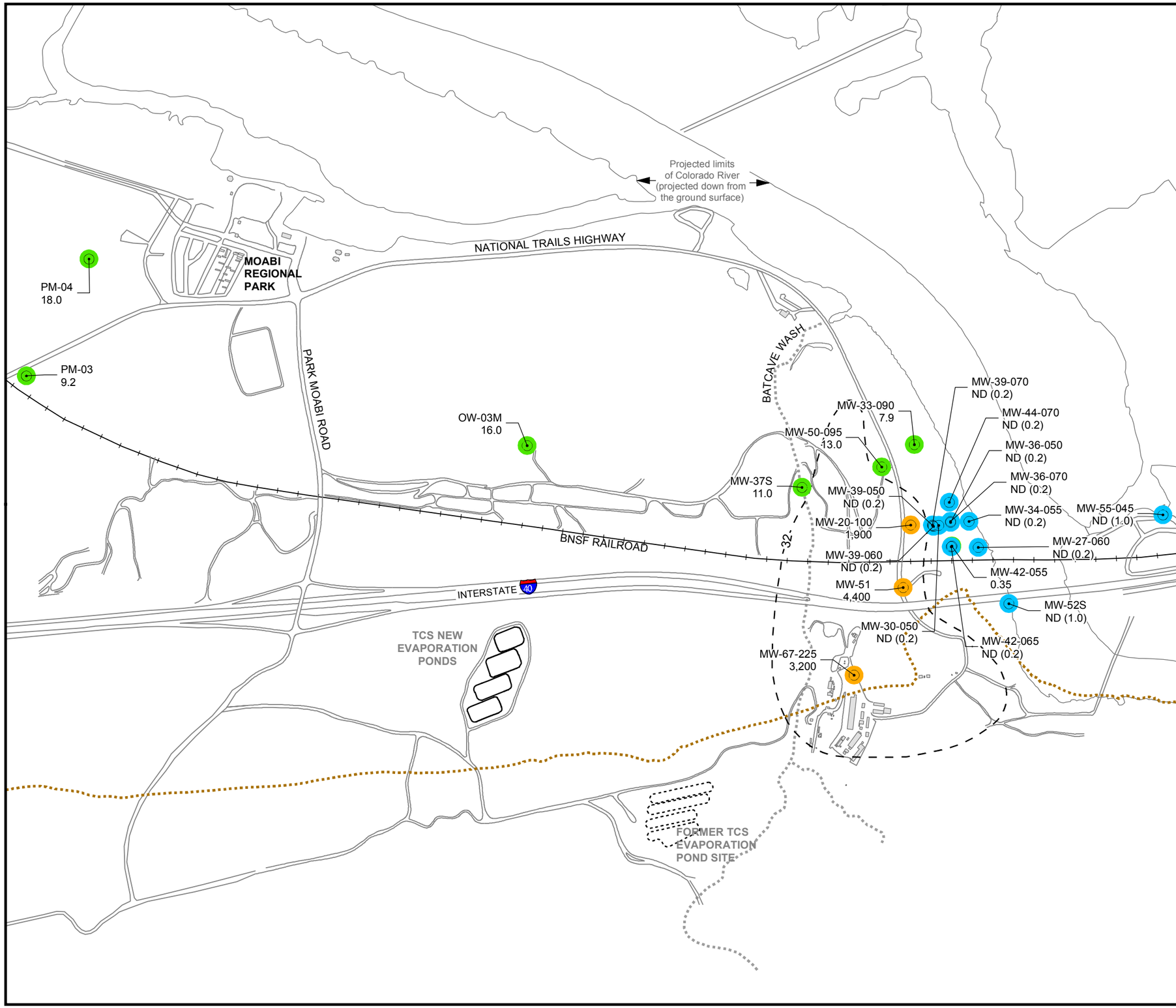
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE3-1A_IMP_CR6_2014Q4_SHALLOW.MXD ECLARK1 2/16/2015 9:09:00 AM



LEGEND

Alluvial Aquifer well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Mid-Depth zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations – Fourth Quarter 2014

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

32 Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations > 32 ug/L based on Fourth Quarter 2014 groundwater sampling results.

Approximate bedrock contact at 425 feet above mean sea level.

Notes:
1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1b
Cr(VI) SAMPLING RESULTS, MID-DEPTH WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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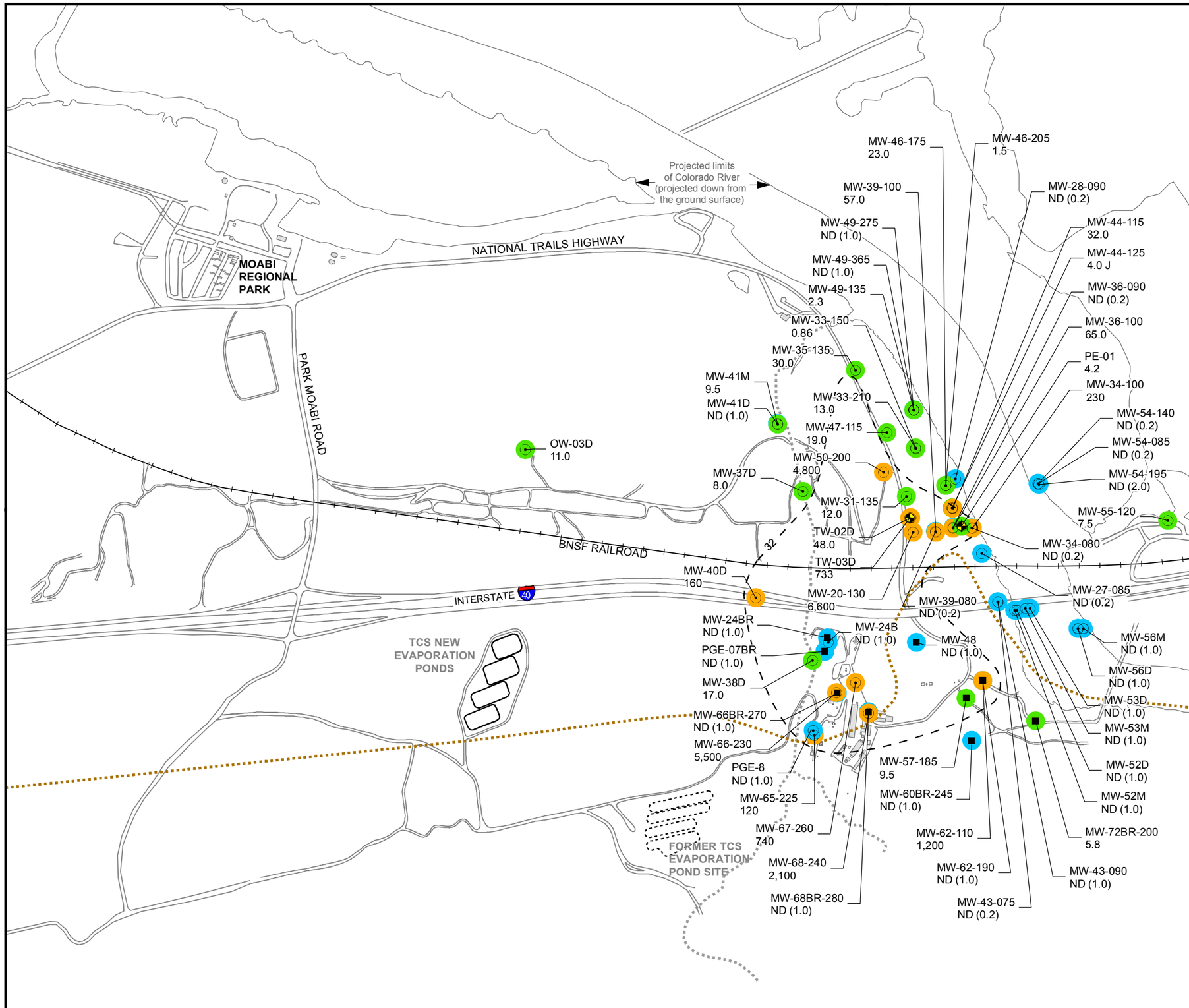

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)
Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Deep zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

J = concentration estimated by laboratory or data validation.

Cr(VI) Concentrations – Fourth Quarter 2014

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations > 32 ug/L based on Fourth Quarter 2014 groundwater sampling results.

Approximate bedrock contact at 395 feet above mean sea level.

Notes:

1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. In the floodplain area, the 32µg/L line for Cr(VI) in deep zone (80-90 feet below Colorado River) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.
3. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.
4. TCS - Topock Compressor Station

N

0 500 1,000 Feet

FIGURE 3-1c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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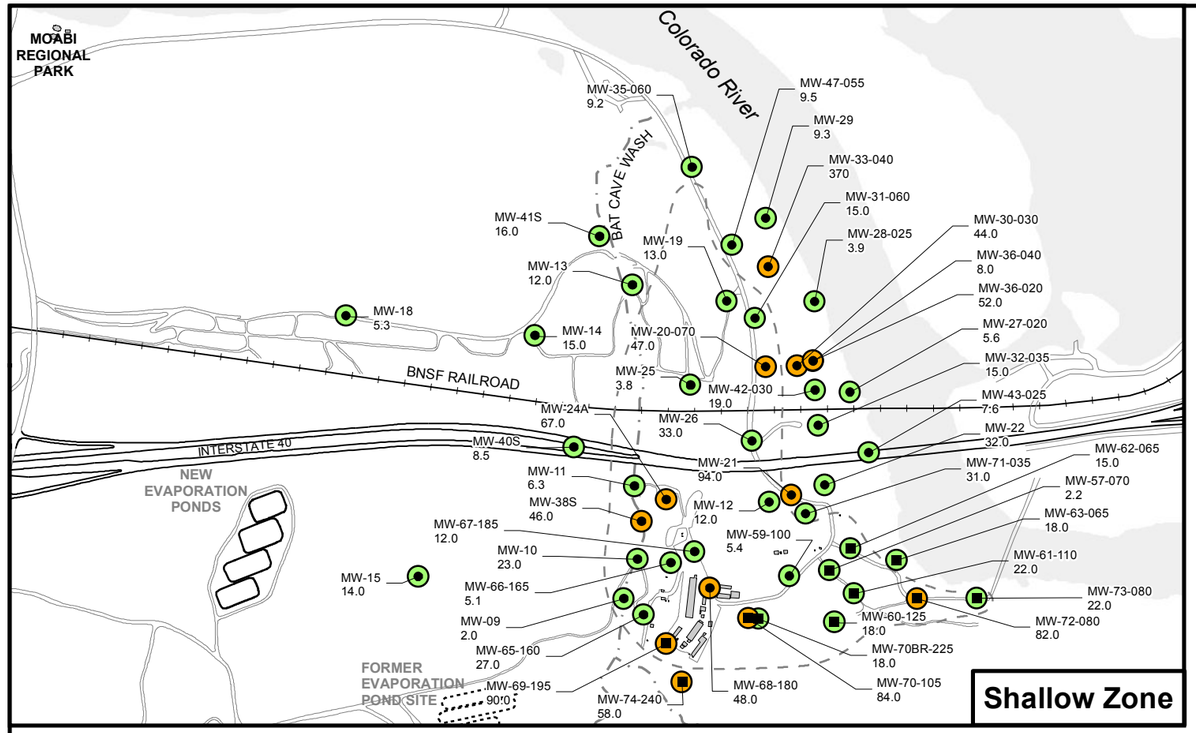
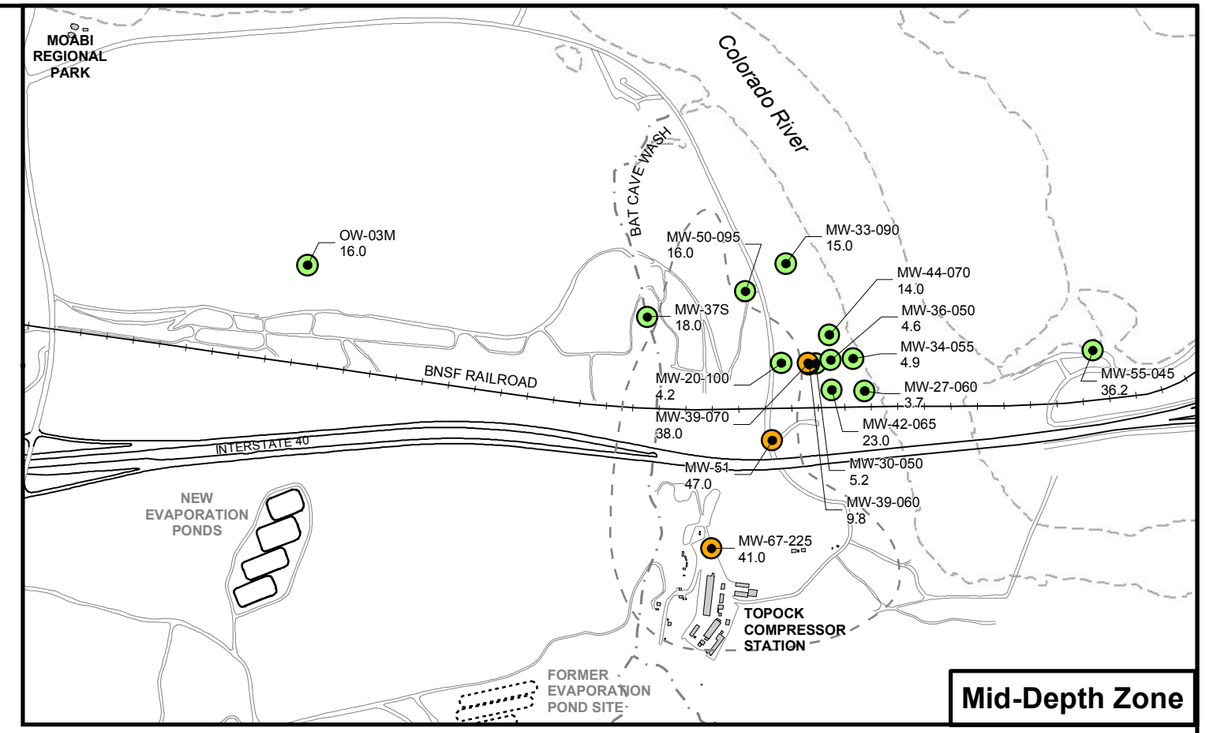
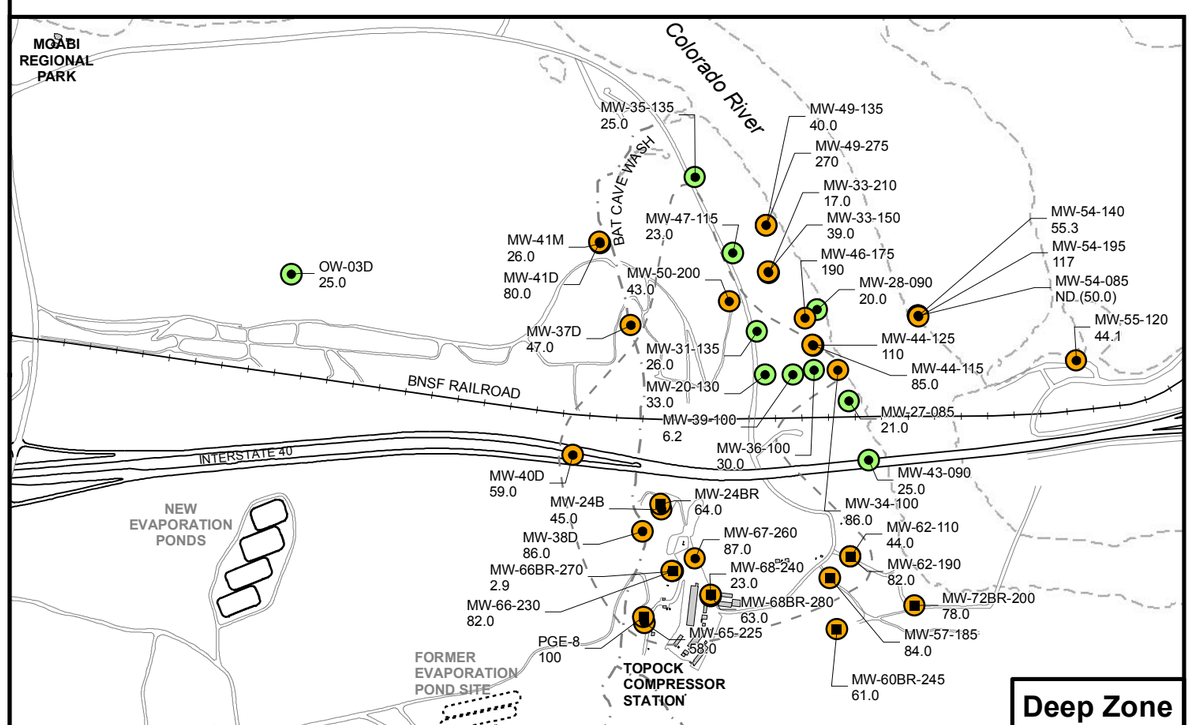
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE3-1C_IMP_CR6_2014Q4_DEEP.MXD ECLARK1 2/17/2015 11:52:30 AM







LEGEND

- Groundwater well completed in Alluvial Aquifer
- Groundwater well completed in bedrock
- Not detected
- Concentration ≤ 36.3 µg/L
- Concentration > 36.3 µg/L
- Approximate Outline of Cr(VI) in Alluvial Aquifer and Bedrock depth zone ≥ 32 µg/L, Fourth Quarter 2014

Dissolved Molybdenum Concentrations

MW-10 ← Well ID

5.8 ← Concentration in µg/L

µg/L = Micrograms per liter
Cr(VI) = Hexavalent Chromium
USEPA = United States Environmental Protection Agency

N

0 500 1,000 Feet

Notes:

1. Molybdenum background study upper tolerance limit (UTL) = 36.3 µg/L. The background study UTL was developed for alluvial wells only.
2. There is no USEPA and California maximum contaminant level for Molybdenum.
3. ND = Not detected at listed reporting limit (RL)
4. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

FIGURE 3-2a
MOLYBDENUM SAMPLING RESULTS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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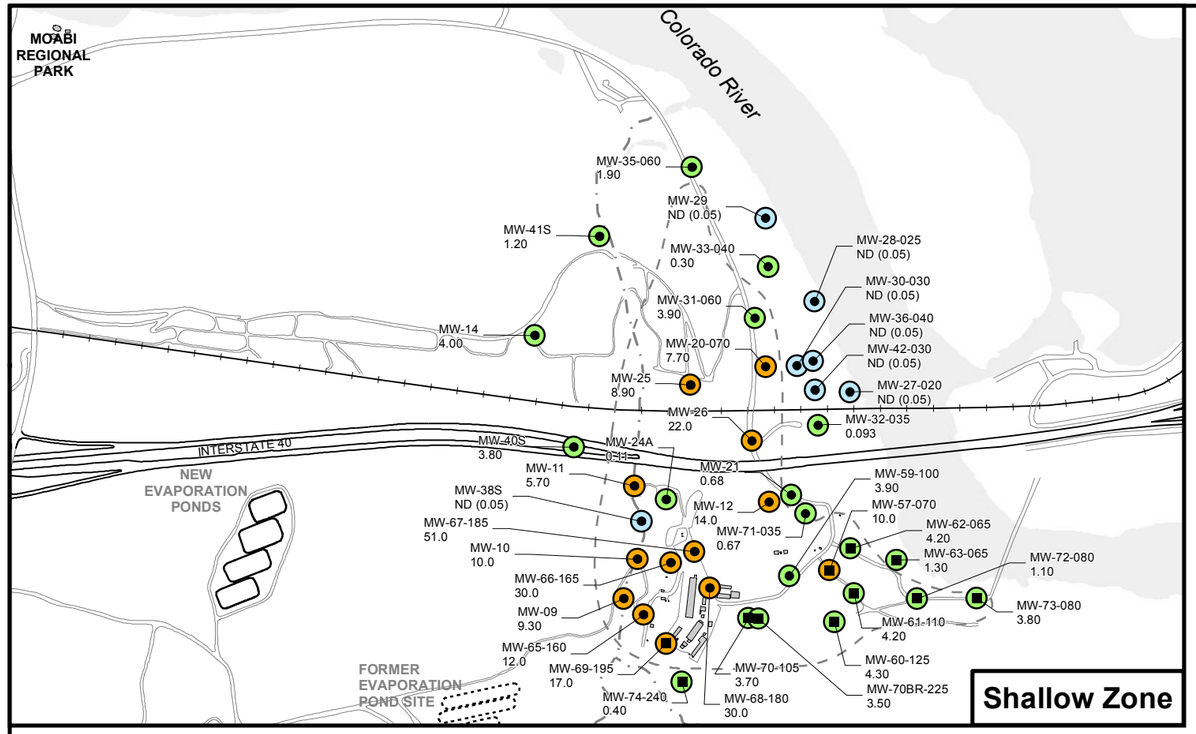

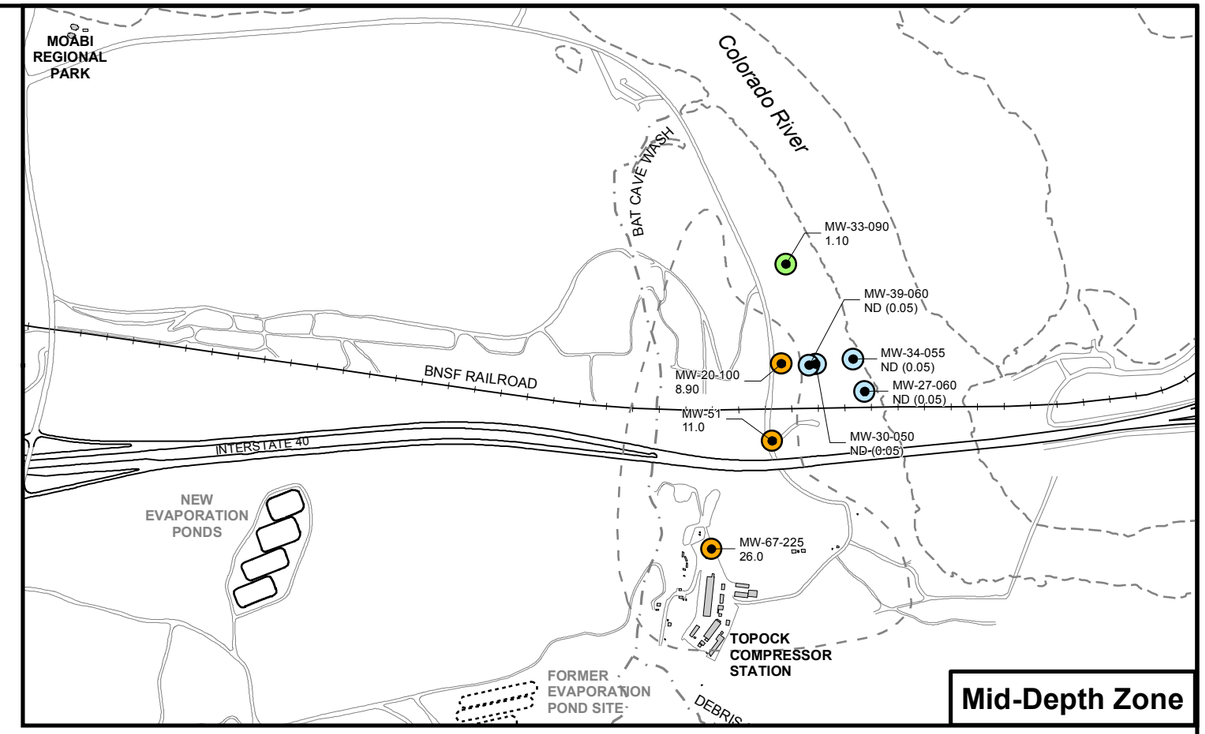

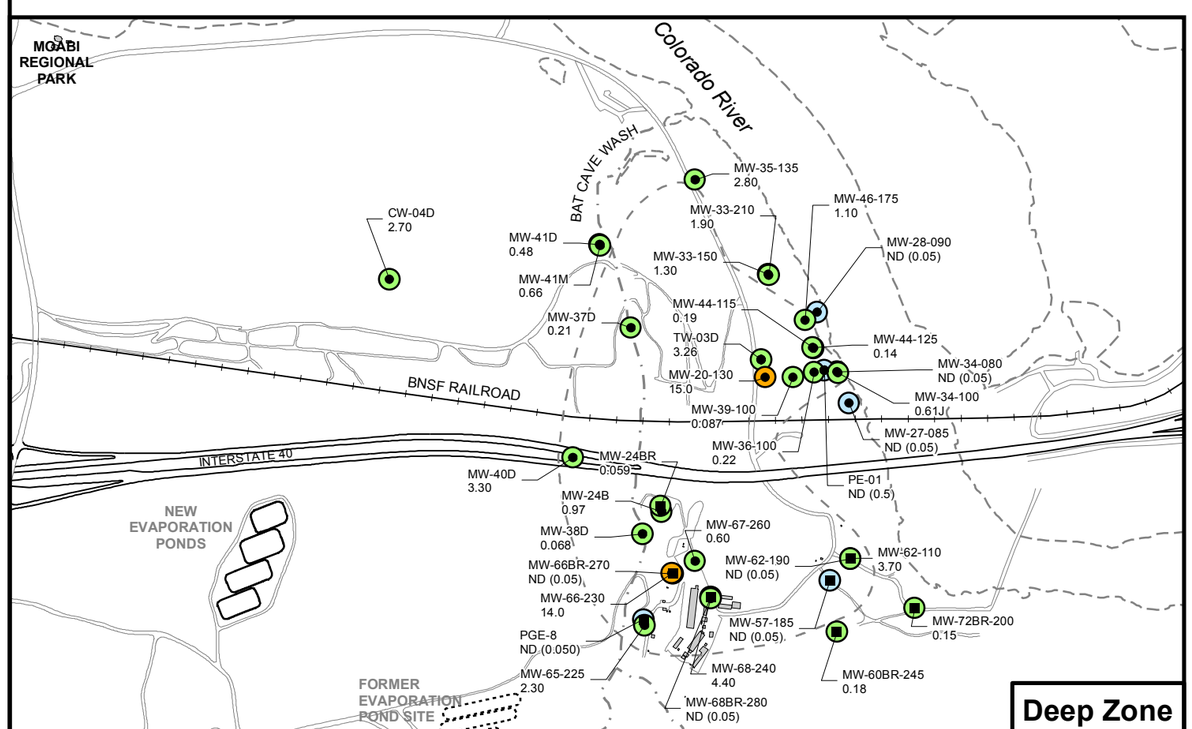

LEGEND

- Groundwater well completed in Alluvial Aquifer
- Groundwater well completed in bedrock
- Not detected
- Concentration ≤ 5.03 mg/L
- Concentration > 5.03 mg/L
- Approximate Outline of Cr(VI) in Alluvial Aquifer and Bedrock depth zone ≥ 32 µg/L, Fourth Quarter 2014

Notes:

1. Nitrate as N background study upper tolerance limit (UTL) = 5.03 mg/L
   The background study UTL was developed for alluvial wells only.
2. Nitrate as N maximum contaminant level = 10 mg/L
3. ND = not detected at listed reporting limit (RL)
4. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

Dissolved Nitrate as Nitrogen (N) Concentrations

MW-10 ← Well ID

5.8 ← Concentration in mg/L

mg/L = Milligrams per liter
Cr(VI) = Hexavalent Chromium

0 500 1,000 Feet

N

FIGURE 3-2b
NITRATE SAMPLING RESULTS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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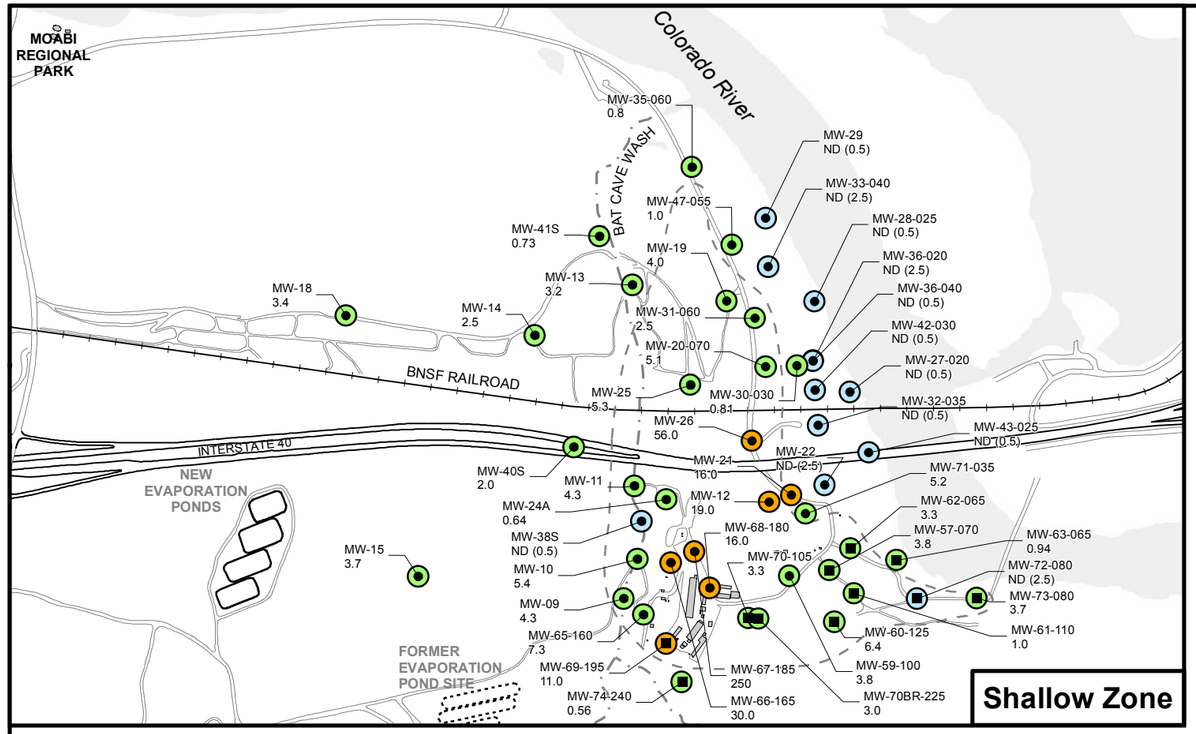

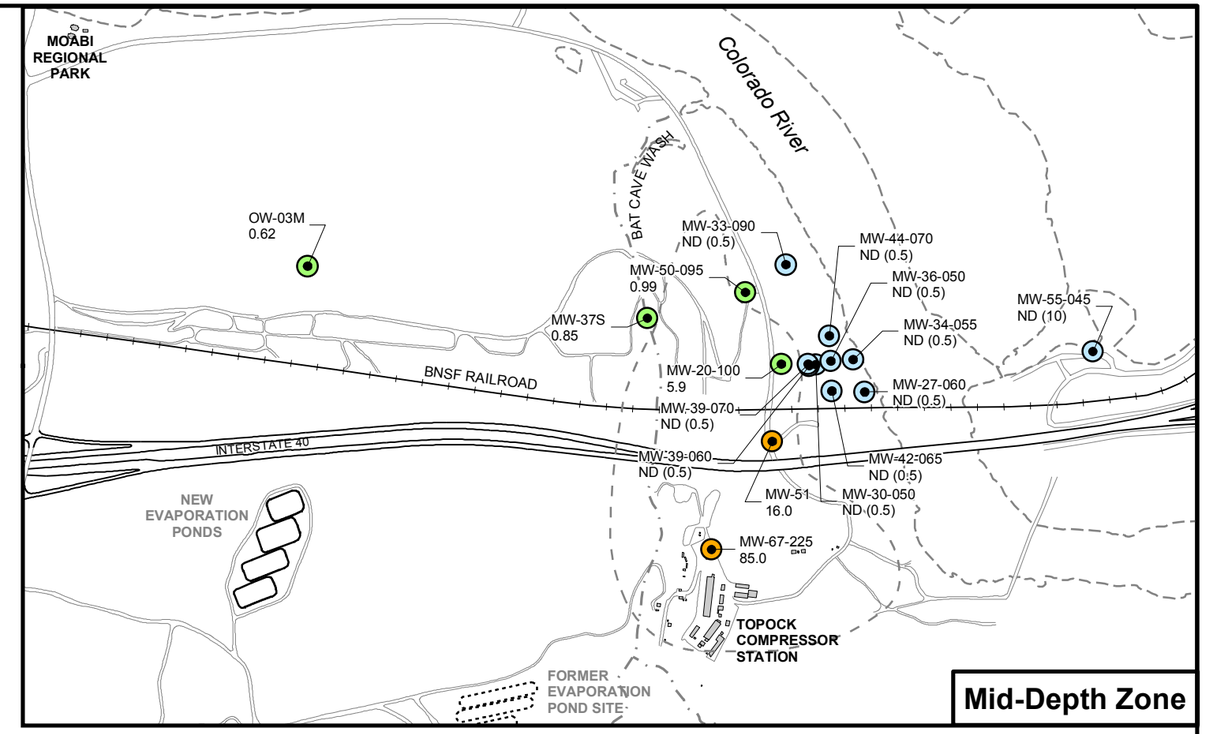

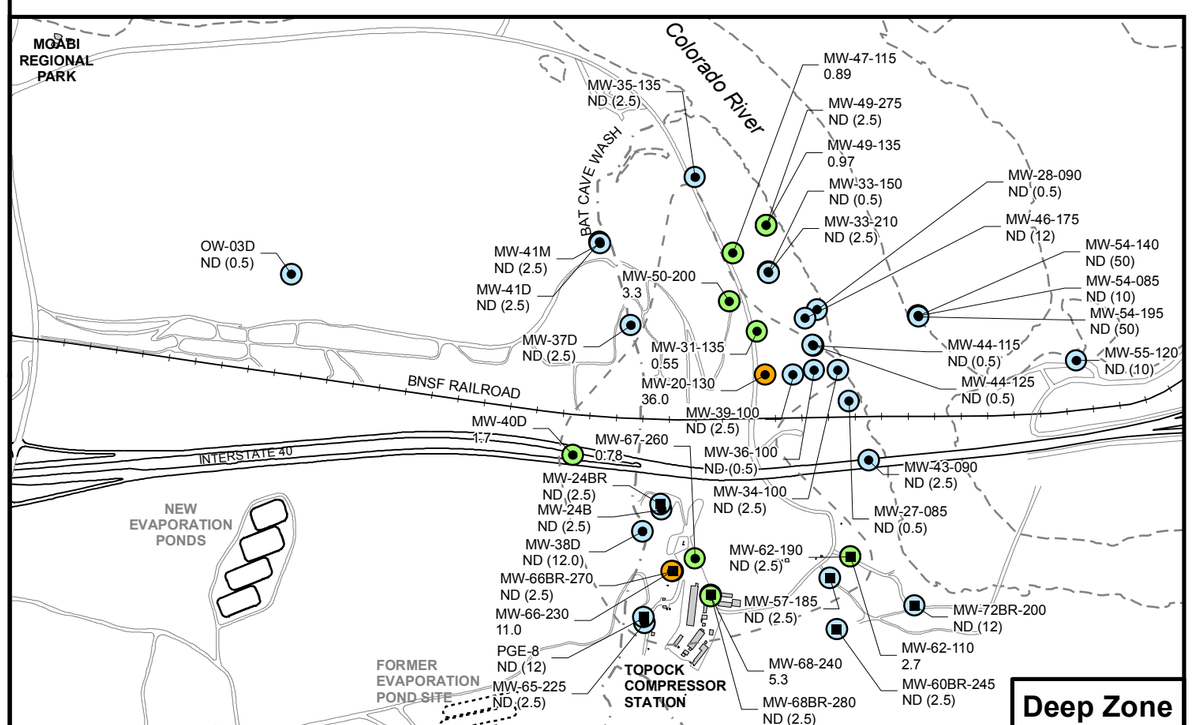

LEGEND

- Groundwater well completed in Alluvial Aquifer
- Groundwater well completed in bedrock
- Not detected
- Concentration ≤ 10.3 µg/L
- Concentration > 10.3 µg/L
- Approximate Outline of Cr(VI) in Alluvial Aquifer and Bedrock depth zone ≥ 32 µg/L, Fourth Quarter 2014

µg/L = Micrograms per liter
Cr(VI) = Hexavalent Chromium

Dissolved Selenium Concentrations

MW-10 ← Well ID
5.8 ← Concentration in µg/L

N

0 500 1,000 Feet

Notes:
1. Selenium background study upper tolerance limit (UTL) = 10.3 µg/L
   The background study UTL was developed for alluvial wells only.
2. Selenium applicable or relavant and appropriate requirement (ARAR) = 50.0 µg/L
3. ND = Not Detected at listed reporting limit (RL)
4. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

FIGURE 3-2c
SELENIUM SAMPLING RESULTS, FOURTH QUARTER 2014
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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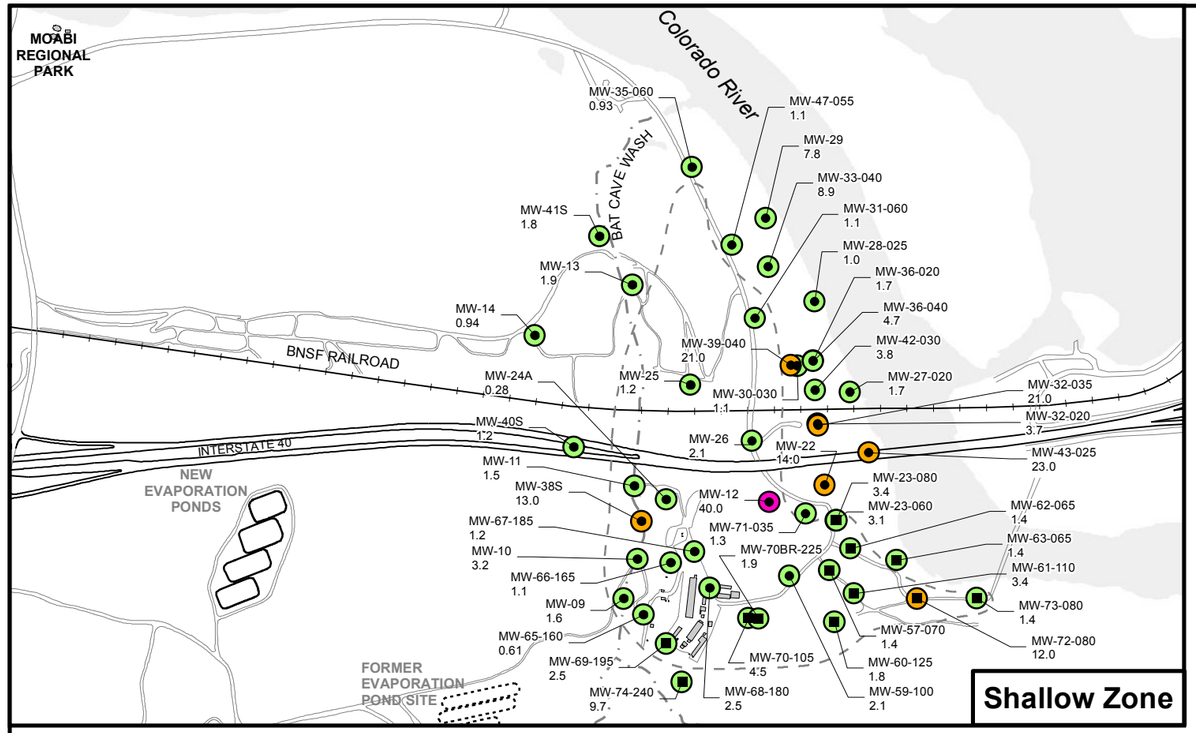

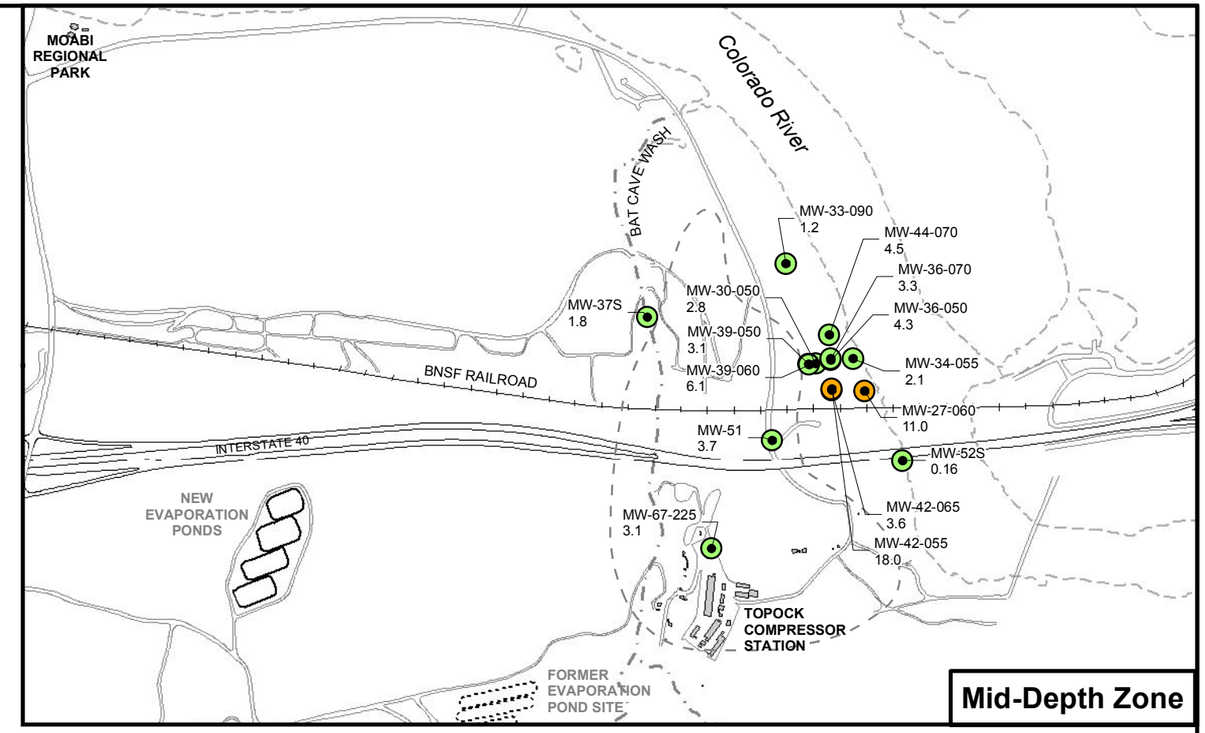

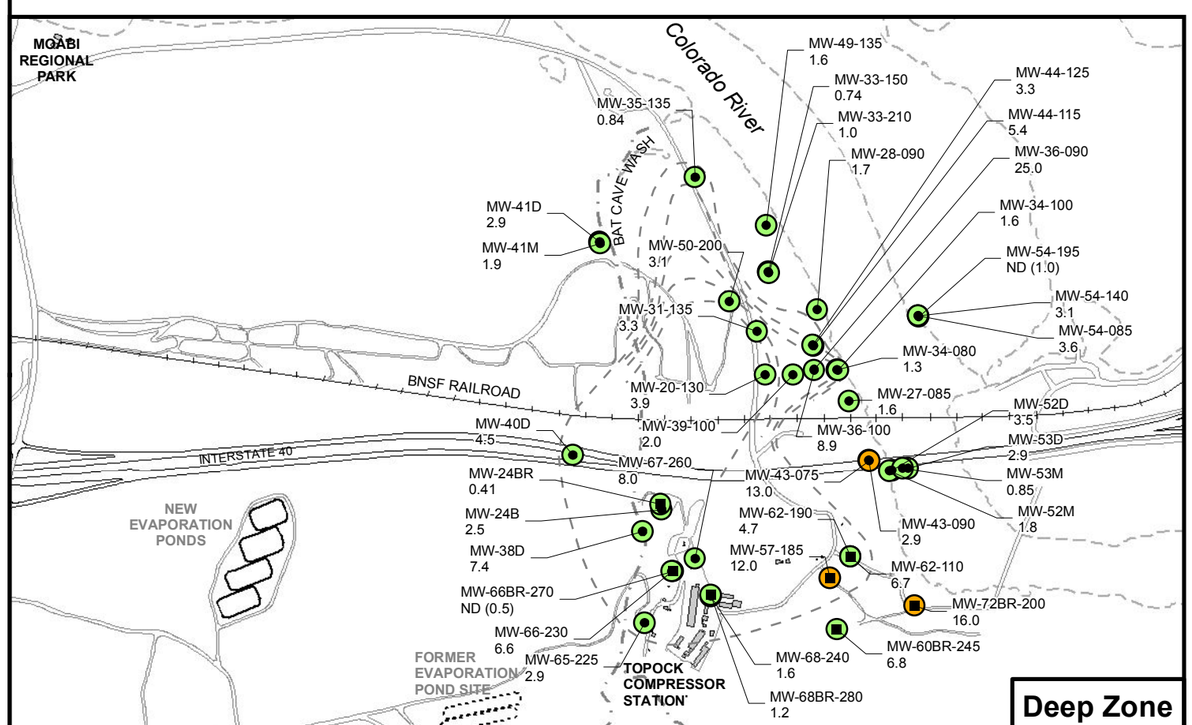

LEGEND

- Groundwater well completed in Alluvial Aquifer
- Groundwater well completed in bedrock
- Not detected
- Concentration ≤ 10 µg/L
- Concentration > 10.1 - ≤ 24.3 µg/L
- Concentration > 24.3 µg/L
- Approximate Outline of Cr(VI) in Alluvial Aquifer and Bedrock depth zone ≥ 32 µg/L, Fourth Quarter 2014

Dissolved Arsenic Concentrations

MW-10 ← Well ID

5.8 ← Concentration in µg/L

µg/L = Micrograms per liter
Cr(VI) = Hexavalent Chromium
USEPA = United States Environmental Protection Agency

N

0 500 1,000 Feet

Notes:

1. Arsenic background study upper tolerance limit (UTL) = 24.3 ug/L. The background study UTL was developed for alluvial wells only.
2. Arsenic maximum contaminant level = 10.0 ug/L.
3. ND = not detected at listed reporting limit (RL)
4. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

FIGURE 3-2d
ARSENIC SAMPLING RESULTS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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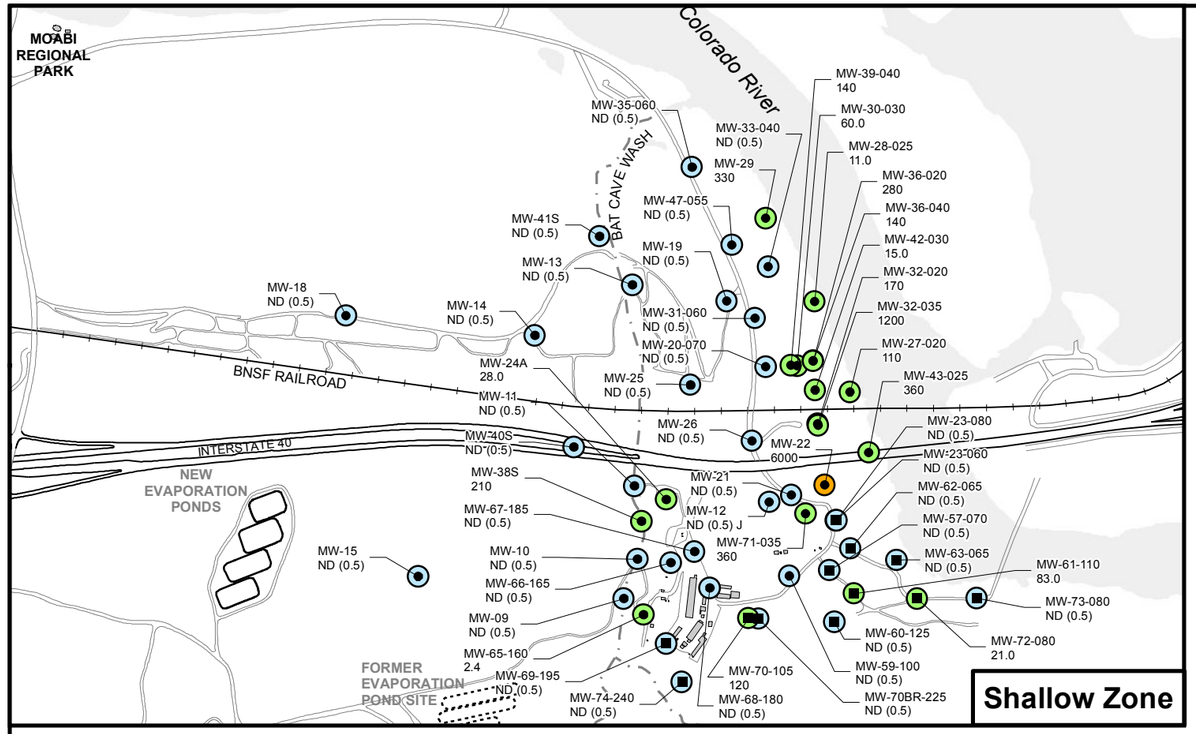

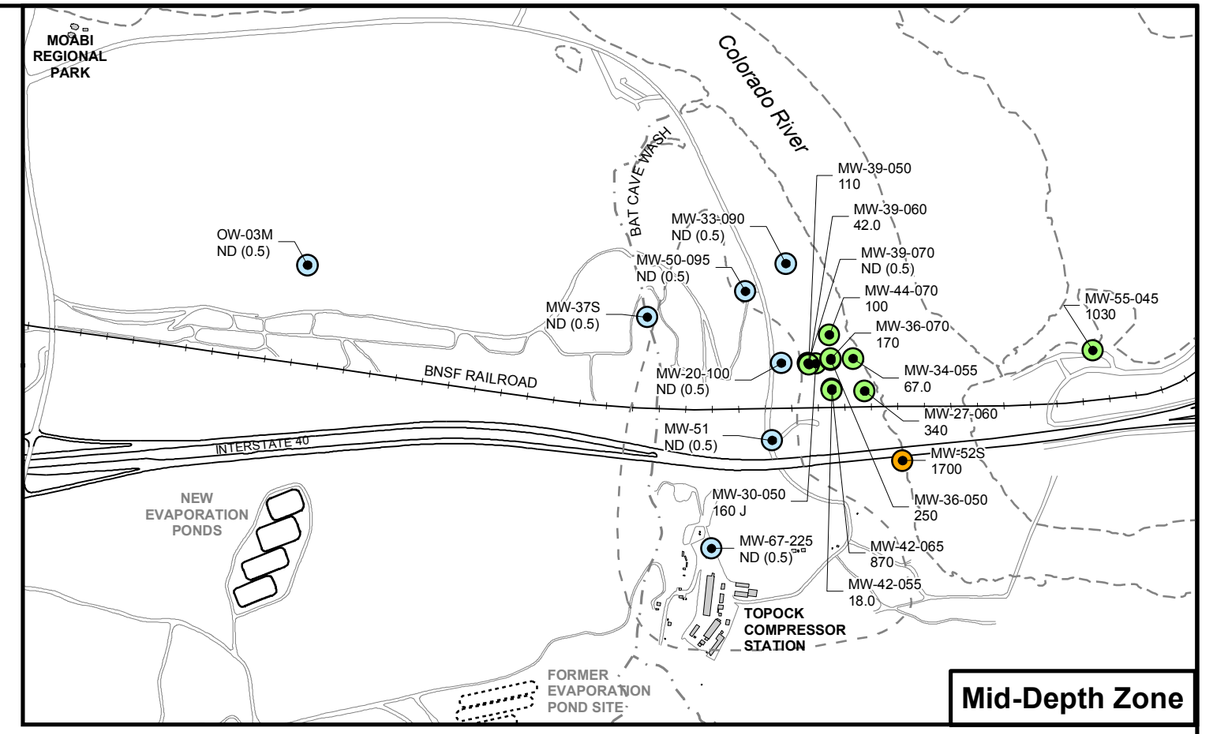

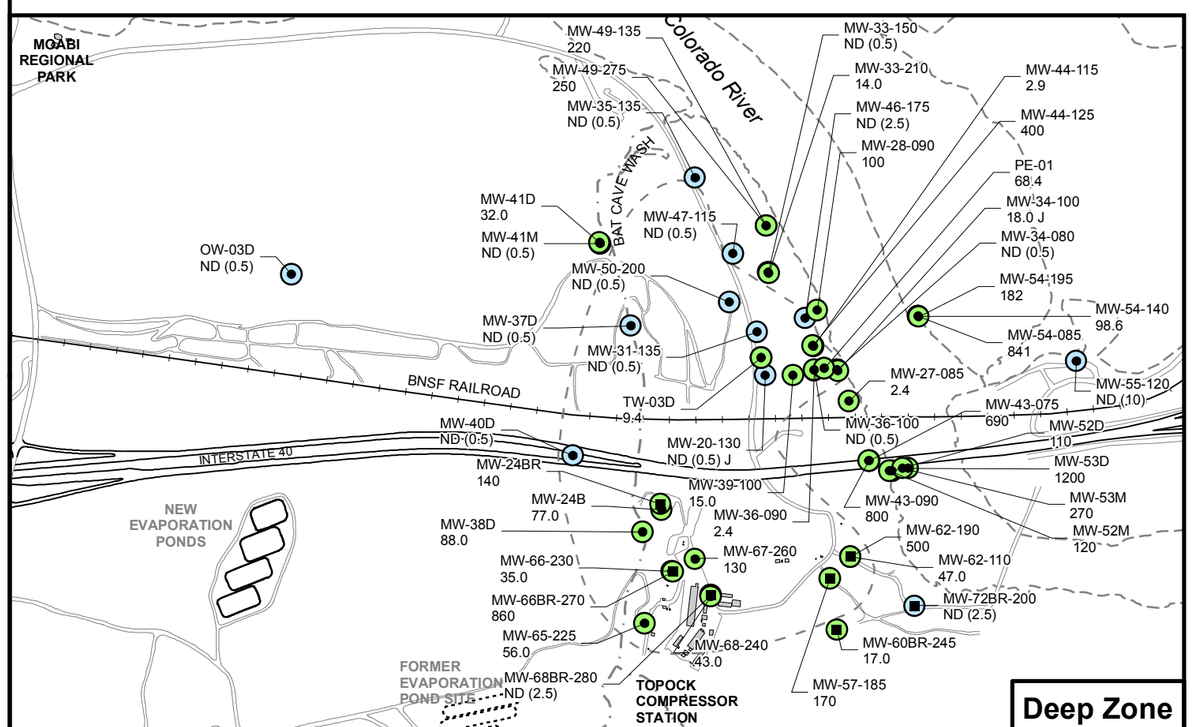

LEGEND

- Groundwater well completed in Alluvial Aquifer
- Groundwater well completed in bedrock
- Not detected
- Concentration ≤ 1,320 µg/L
- Concentration > 1,320 µg/L
- Approximate Outline of Cr(VI) in Alluvial Aquifer and Bedrock depth zone ≥ 32 µg/L, Fourth Quarter 2014

Dissolved Manganese Concentrations

MW-10 ← Well ID

5.8 ← Concentration in µg/L

µg/L = Micrograms per liter
Cr(VI) = Hexavalent Chromium
USEPA = United States Environmental Protection Agency
J = concentration or reporting limit (RL) estimated by laboratory or data validation

N

0 500 1,000 Feet

Notes:

1. Manganese background study report upper tolerance limit (UTL) = 1,320 ug/L. The background study UTL was developed for alluvial wells only.
2. There is no primary USEPA and California maximum contaminant level (MCL) for Manganese. The secondary MCL is 50 µg/L.
3. ND = not detected at listed reporting limit (RL)
4. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

FIGURE 3-2e
MANGANESE SAMPLING RESULTS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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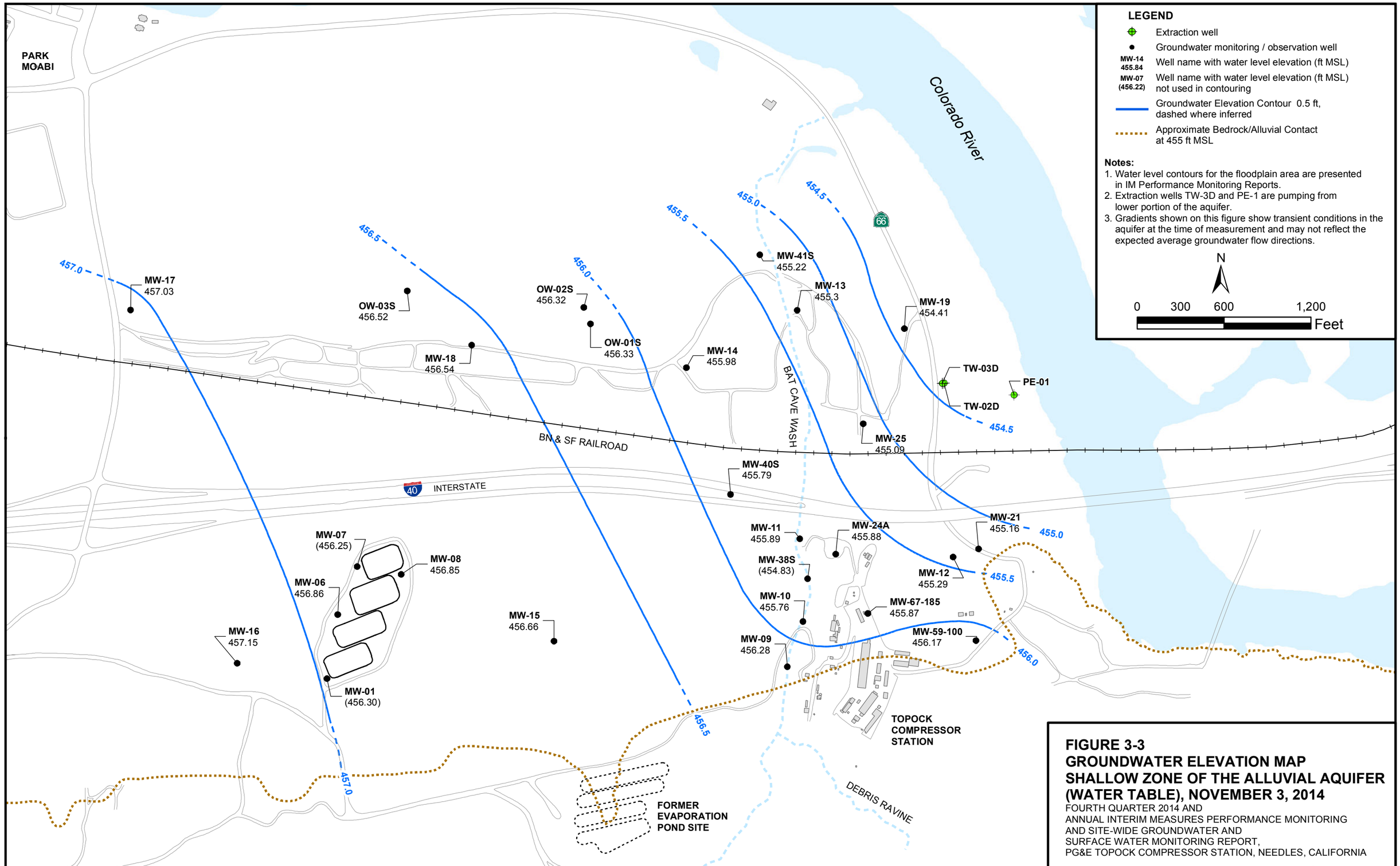

FIGURE 3-3
GROUNDWATER ELEVATION MAP
SHALLOW ZONE OF THE ALLUVIAL AQUIFER (WATER TABLE), NOVEMBER 3, 2014
FOURTH QUARTER 2014 AND
ANNUAL INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND
SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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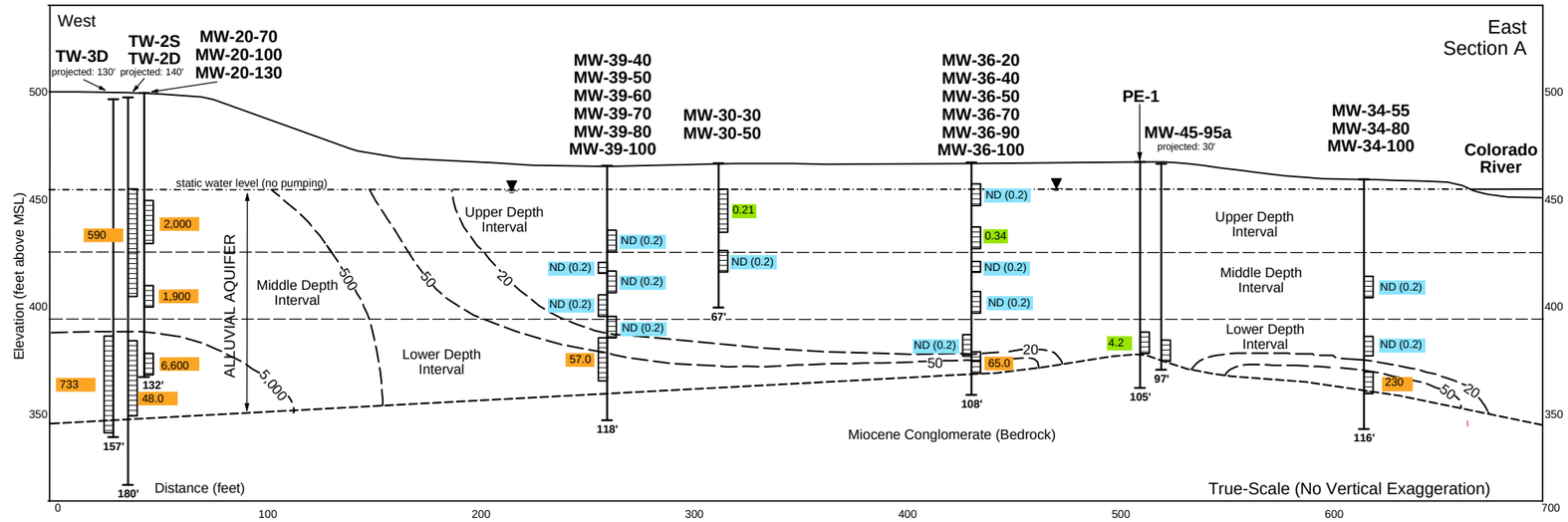
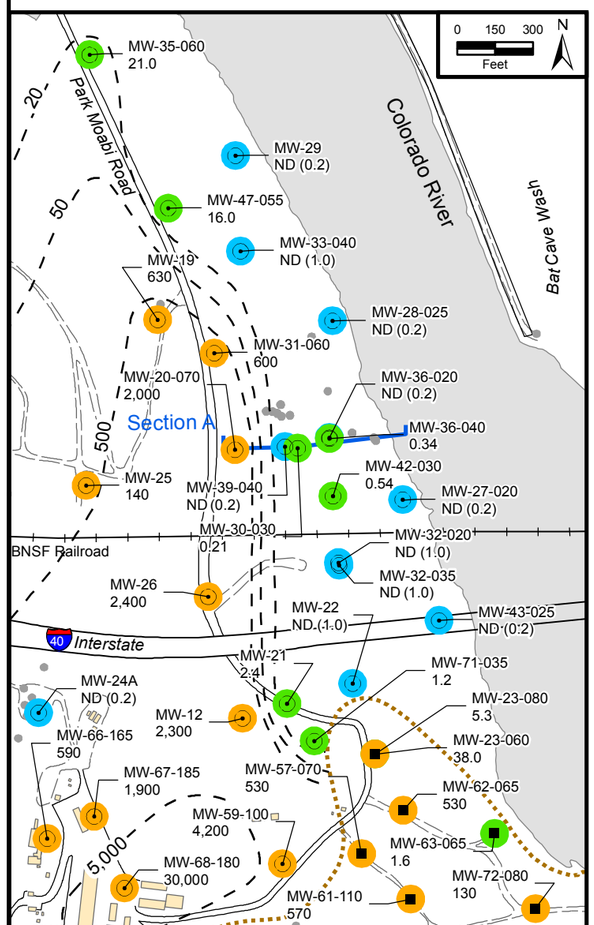
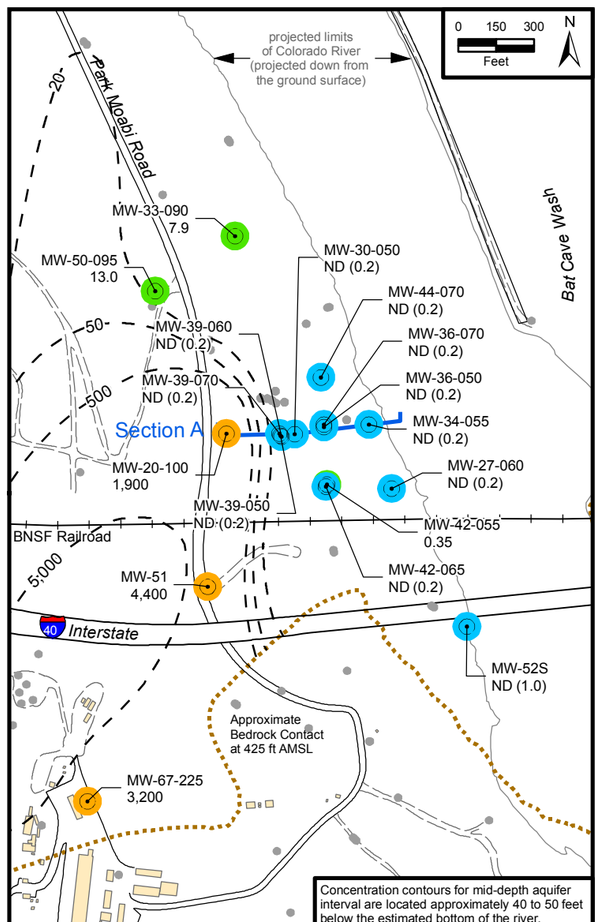
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE3-3_GWE_SNAPSHOTPLOT_2014Q4.MXD ECLARK1 2/24/2015 12:27:19 PM

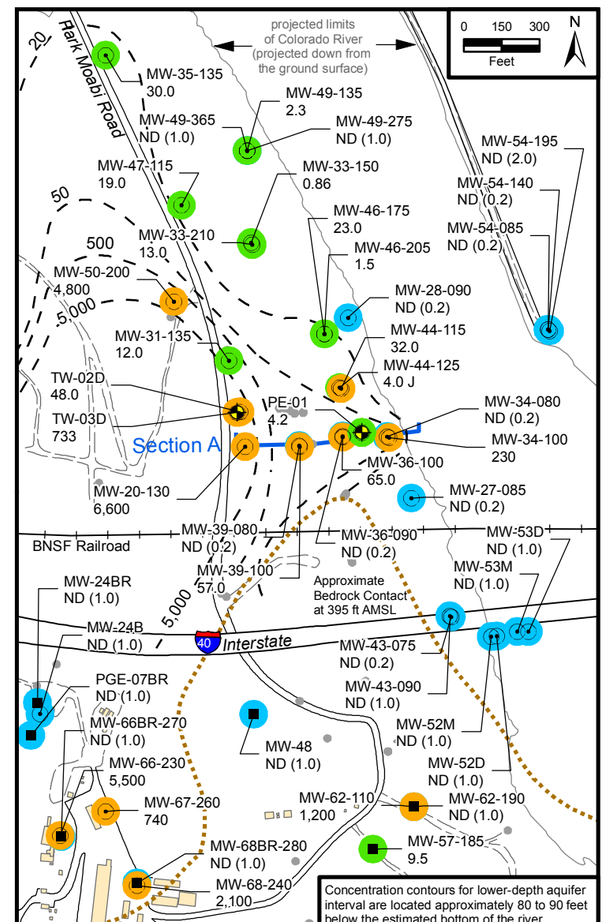




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Middle-Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event
- Well not sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L). Results posted are maximum Cr(VI) concentrations.

ND (0.2) Cr(VI) not detected at listed reporting limit

J = concentration or reporting limit (RL) estimated by laboratory or data validation.

Cr(VI) Concentrations – Fourth Quarter 2014

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

— - 50 — - Inferred Cr(VI) concentration contour within Alluvial Aquifer depth interval based on Fourth Quarter 2014 groundwater sampling results.

- Hydrogeologic Section A
- Approximate bedrock contact

Notes:

1. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with DTSC's 2005 IM performance monitoring directive. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 ug/L in the floodplain portion of the Alluvial Aquifer.
2. Extraction wells PE-01, TW-2S, TW-2D, and TW-3D are not included in contouring. These wells draw water from a larger area and do not represent Cr(VI) concentrations at their specific locations.
3. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

FIGURE 4-1
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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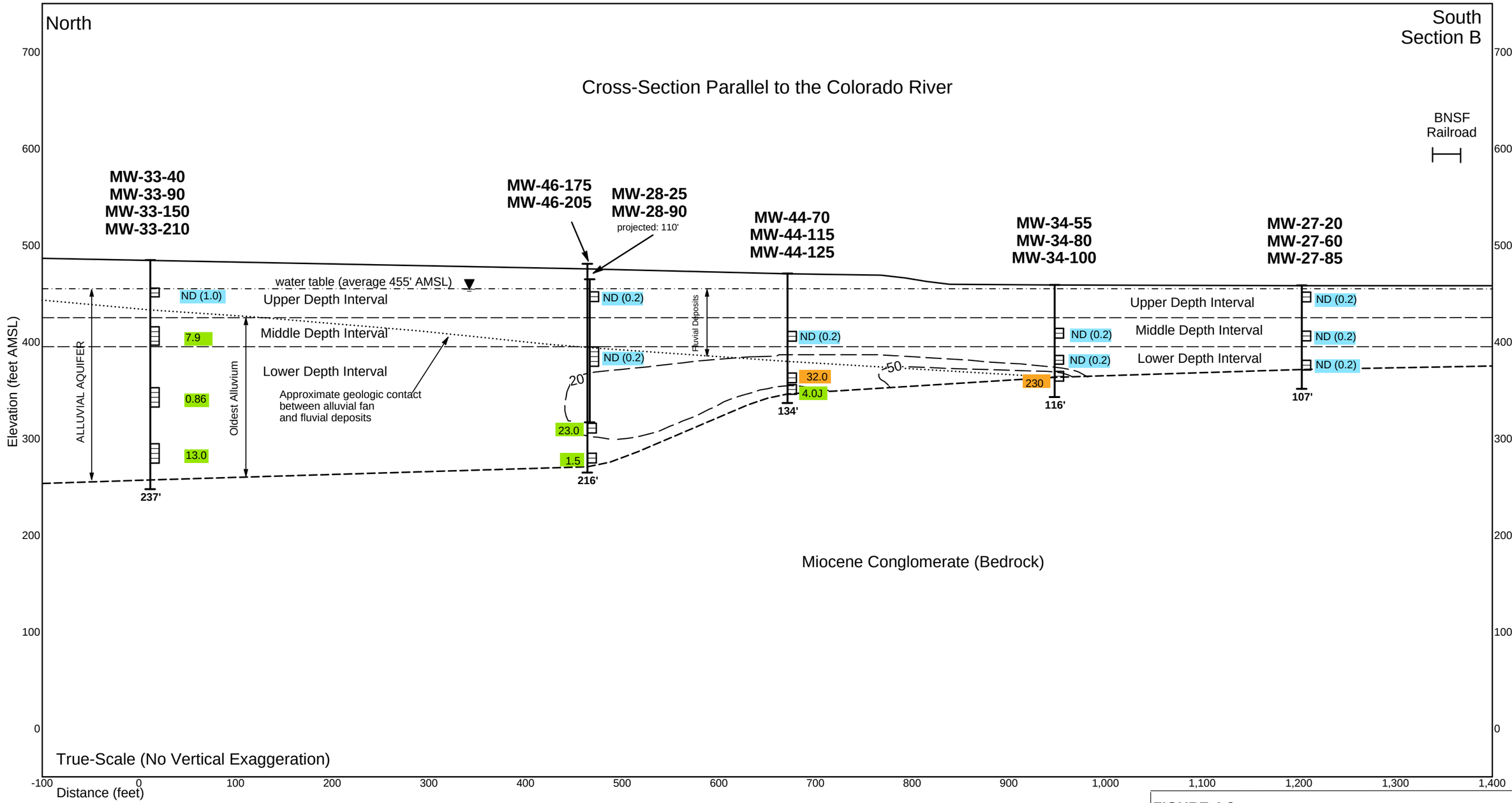

Notes:

AMSL = above mean sea level.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.

1. See Table 3-1 for additional sampling data and prior results for wells on this figure.

2. See Figure 1-4 for location of this cross-section.

water level

well screen 3,810

boring depth (feet) 103'

50

Inferred hexavalent chromium contours (µg/L) in Alluvial Aquifer from fourth quarter 2014.

Hexavalent Chromium [Cr(VI)] concentration in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

ND (0.2)	Not detected at listed reporting limit
24.2	Concentration between reporting limit and 32 µg/L
203	Concentration greater than or equal to 32 µg/L

FIGURE 4-2
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B,
FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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C:\USERS\AURORA\DOCUMENTS\TOPOCK\GINT\2014_4Q\FIGURE4-2_XSECB_CR_2014.GDW;

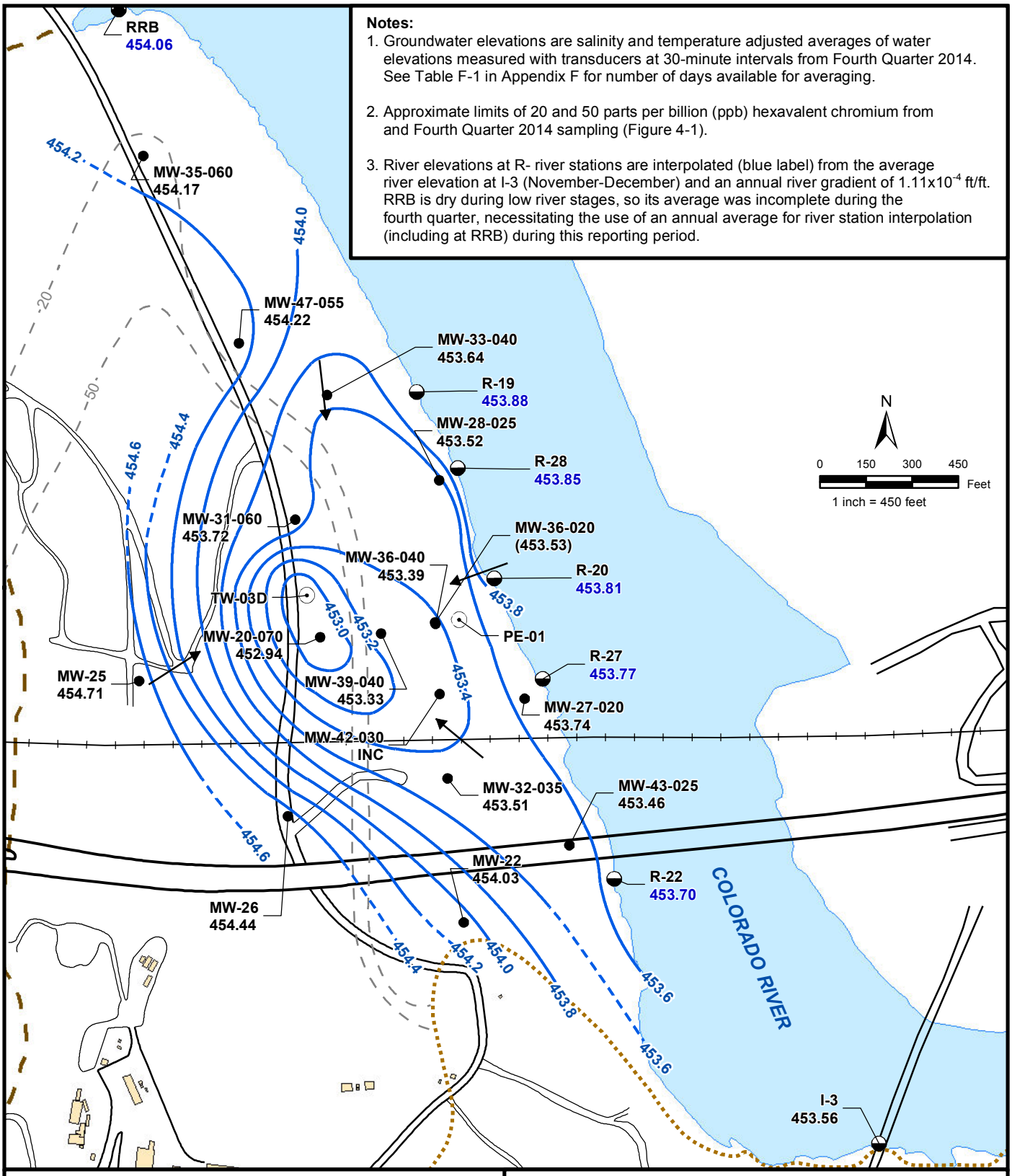


FIGURE 4-3a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

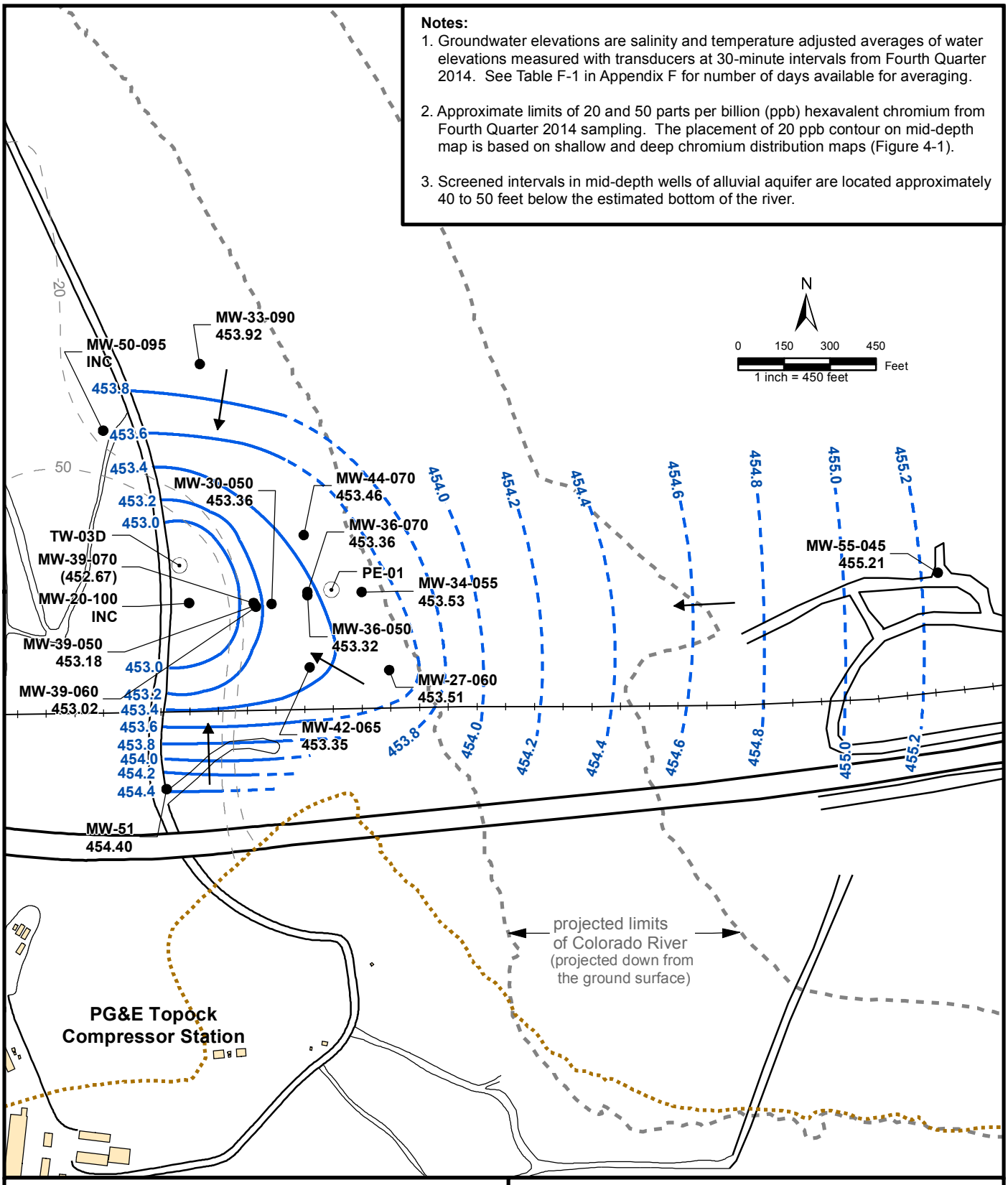
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE4-3A_PMR_GWE_2014Q4_SHALLOW.MXD ECLARK1 2/24/2015 12:36:08 PM

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from Fourth Quarter 2014. See Table F-1 in Appendix F for number of days available for averaging.

2. Approximate limits of 20 and 50 parts per billion (ppb) hexavalent chromium from Fourth Quarter 2014 sampling. The placement of 20 ppb contour on mid-depth map is based on shallow and deep chromium distribution maps (Figure 4-1).

3. Screened intervals in mid-depth wells of alluvial aquifer are located approximately 40 to 50 feet below the estimated bottom of the river.



MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft AMSL)
MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring
INC	Data Incomplete for Reporting Period
	Bedrock Contact at 425 ft AMSL elevation
	Monitoring Well
	Extraction Well
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)
	Interpreted Groundwater Flow Direction

FIGURE 4-3b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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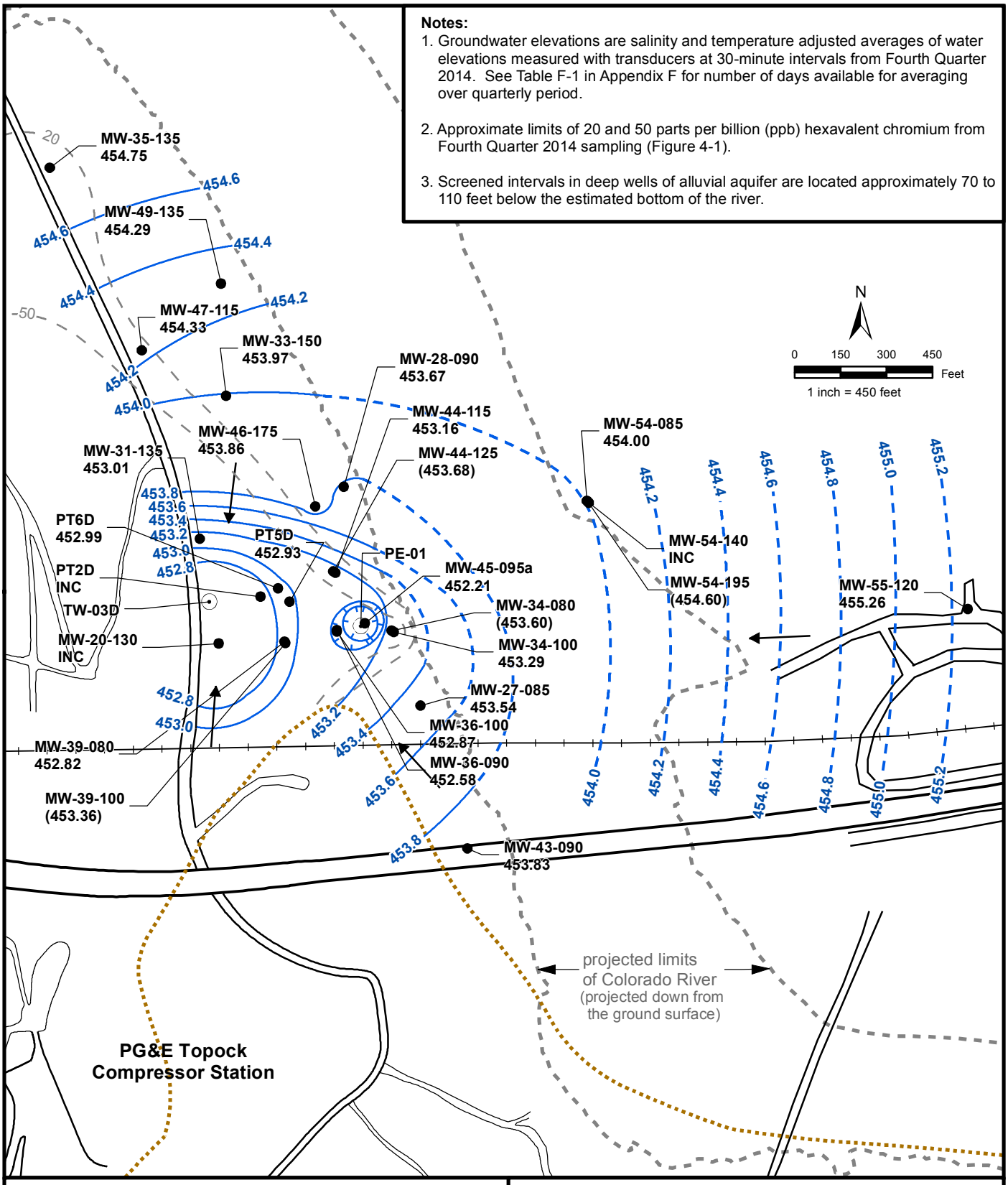
Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from Fourth Quarter 2014. See Table F-1 in Appendix F for number of days available for averaging over quarterly period.

2. Approximate limits of 20 and 50 parts per billion (ppb) hexavalent chromium from Fourth Quarter 2014 sampling (Figure 4-1).

3. Screened intervals in deep wells of alluvial aquifer are located approximately 70 to 110 feet below the estimated bottom of the river.



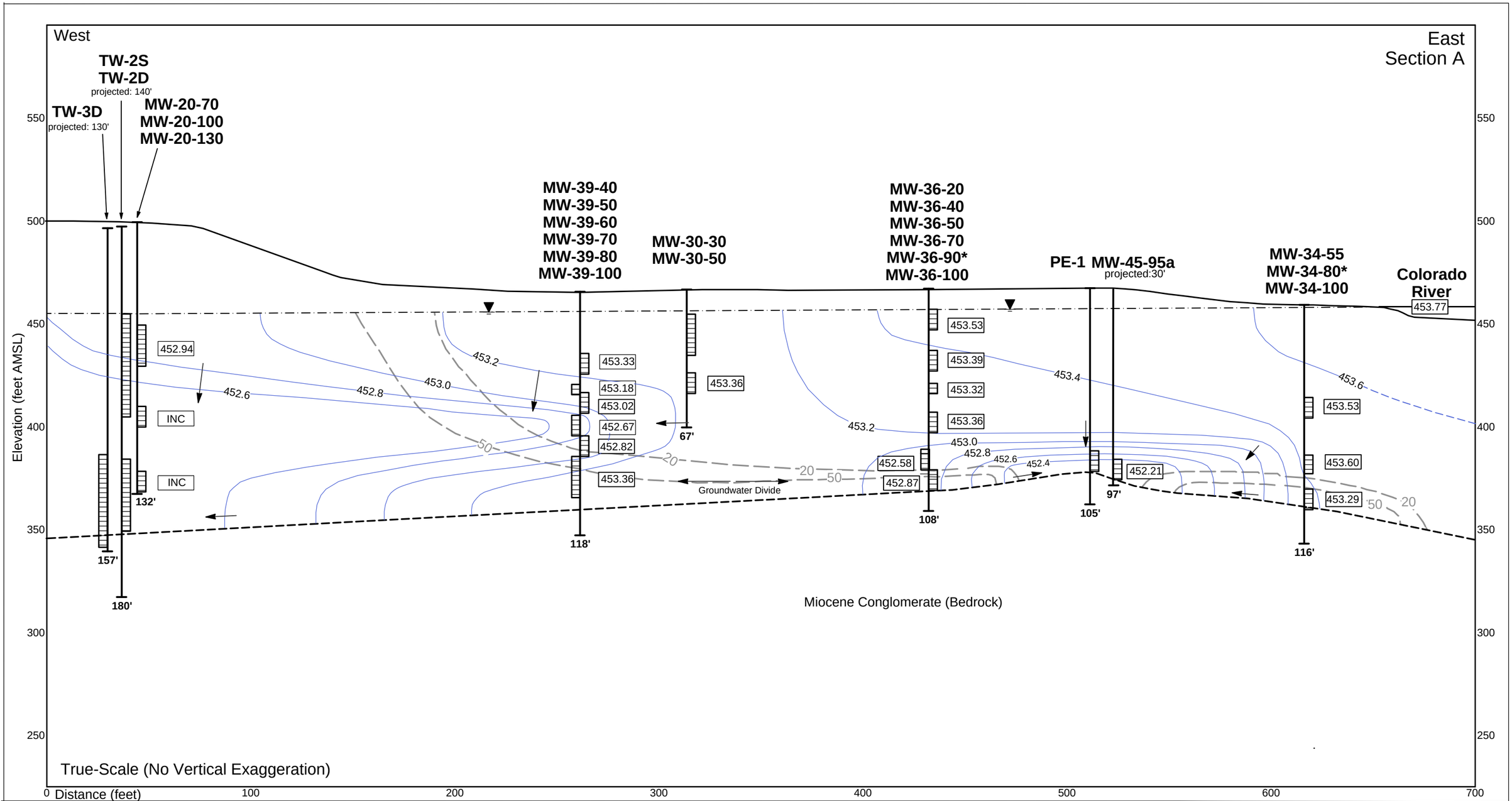
MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft AMSL)
MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring
INC	Data Incomplete for Reporting Period
Bedrock Contact at 395 ft AMSL elevation	
Monitoring Well	
Extraction Well	
Groundwater Elevation Contour 0.2 ft (dashed where inferred)	
Interpreted Groundwater Flow Direction	

FIGURE 4-3c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2014\GMP-IMP\2014Q4\FIGURE4-3C_PMR_GWE_2014Q4_DEEP.MXD ECLARK1 2/24/2015 12:39:22 PM



Notes:
1. Results show average groundwater elevations for Fourth Quarter 2014 measured with transducers at 30 minute intervals.

2. Groundwater elevations adjusted for salinity and temperature. Well MW-36-90* and MW-34-080* are excluded from contouring.River elevation (R-27) is the calculated average river level based upon the river gradient between RRB and I-3.

AMSL = above mean sea level.
INC = data incomplete for reporting period.

Legend:

MW-30-50

Inferred water table

well screen

455.23 — Average groundwater head (ft AMSL)

103 — boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer from Fourth Quarter 2014.

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

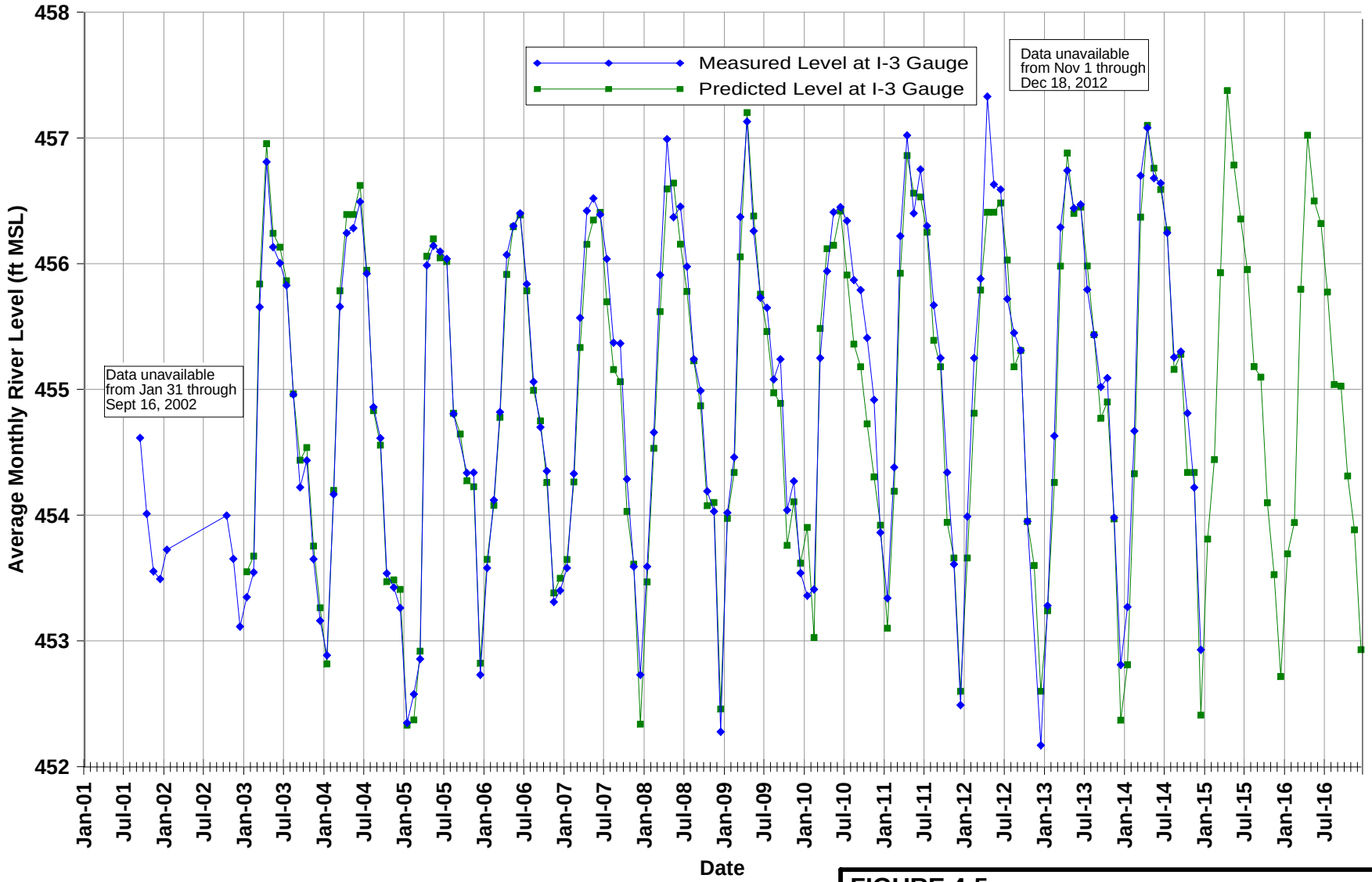
Interpreted groundwater flow direction

FIGURE 4-4
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

C:\USERS\AURORA\DOCUMENTS\TOPOCK\GINT\2014_4Q\FIGURE4-4_XSECA_GW.GDW;



Note:
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon January 2015 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf

FIGURE 4-5
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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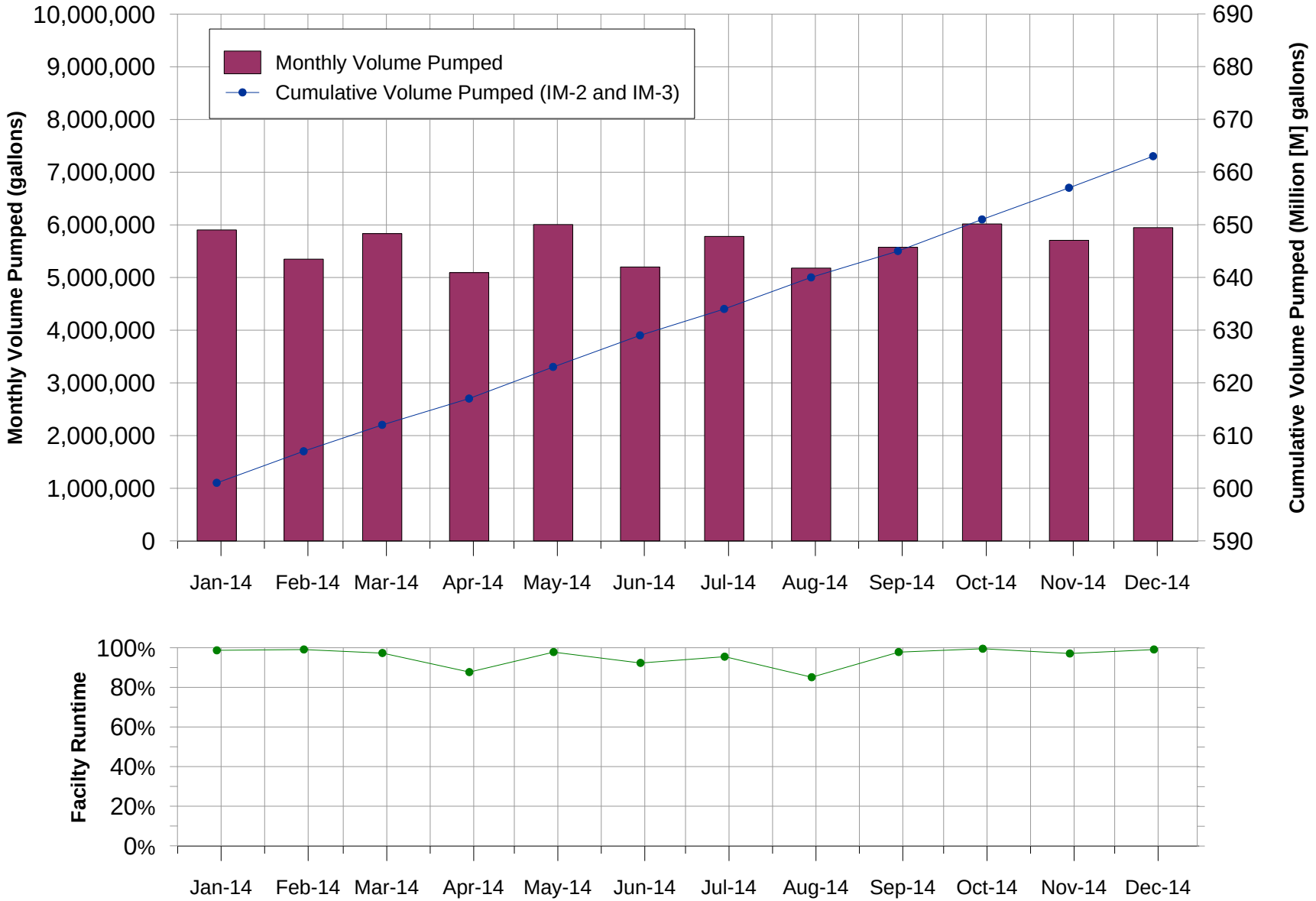

FIGURE 5-1
MONTHLY COMBINED PUMPING VOLUMES AND PERCENT UPTIME, 2014 REPORTING PERIOD
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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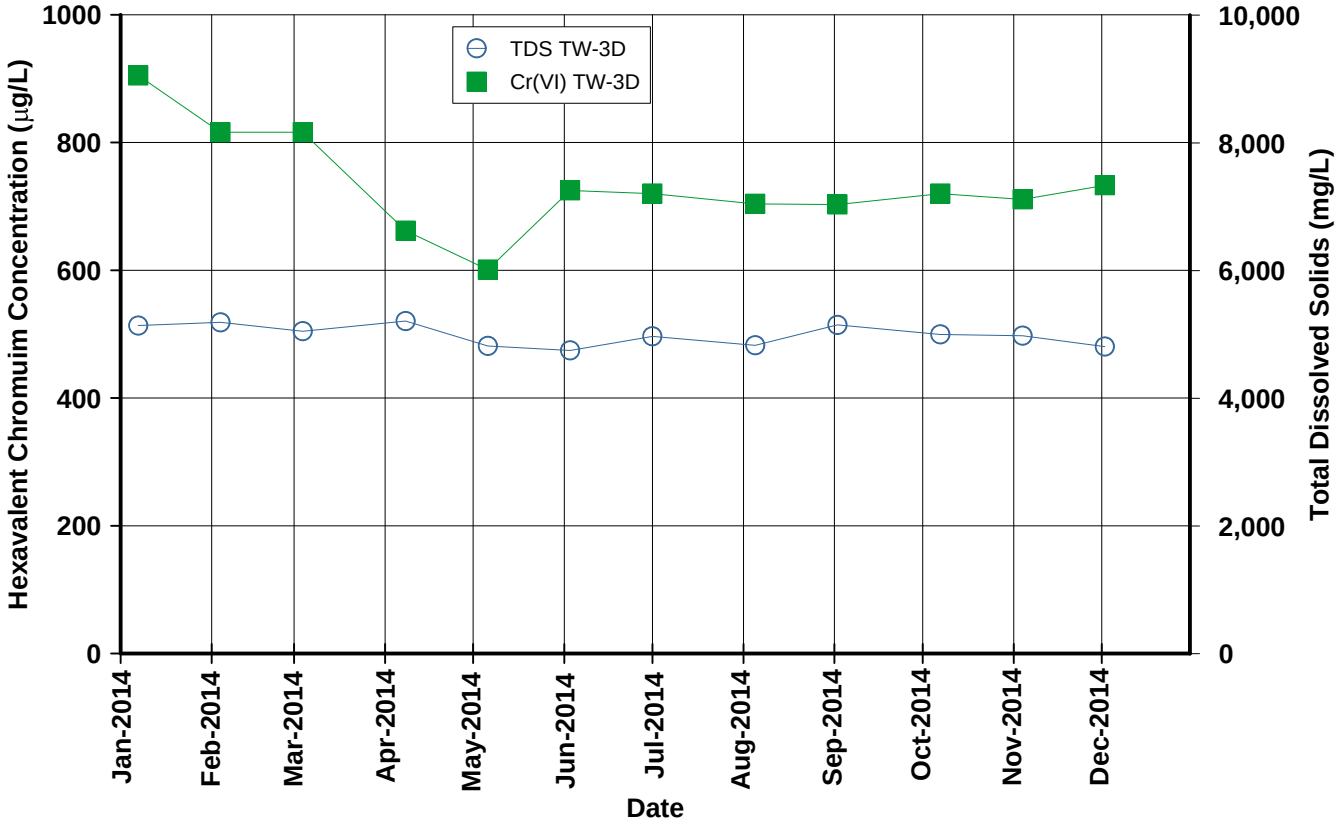

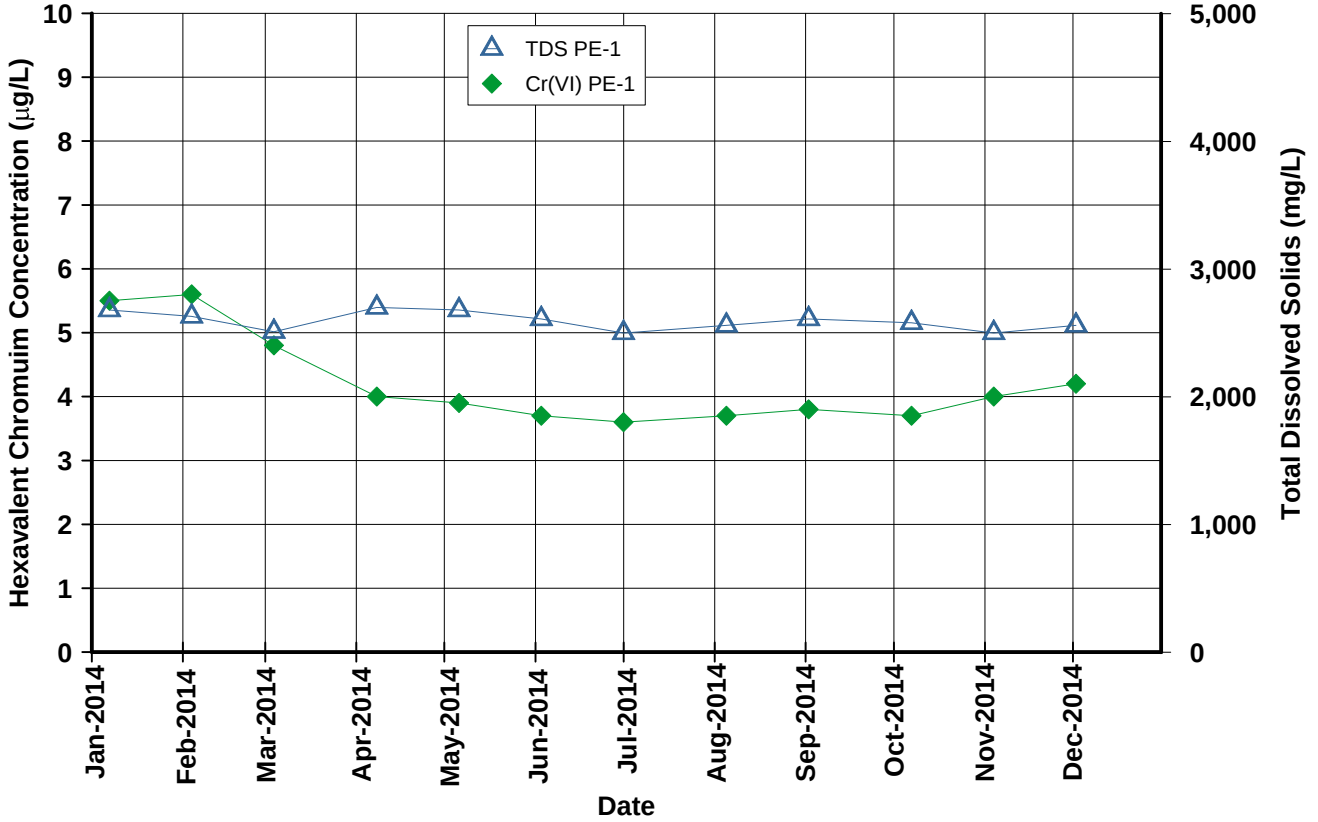

Notes:
gpm = gallons per minute.
µg/L = micrograms per liter.
mg/L = milligrams per liter.

TW-3D pumping began on 20-Dec-05.
PE-1 pumping began on 26-Jan-06.

For average pumping information see Table 5-1.

FIGURE 5-2
Cr(VI) AND TOTAL DISSOLVED SOLIDS CONCENTRATIONS IN EXTRACTION WELLS TW-3D AND PE-1, 2014 REPORTING PERIOD
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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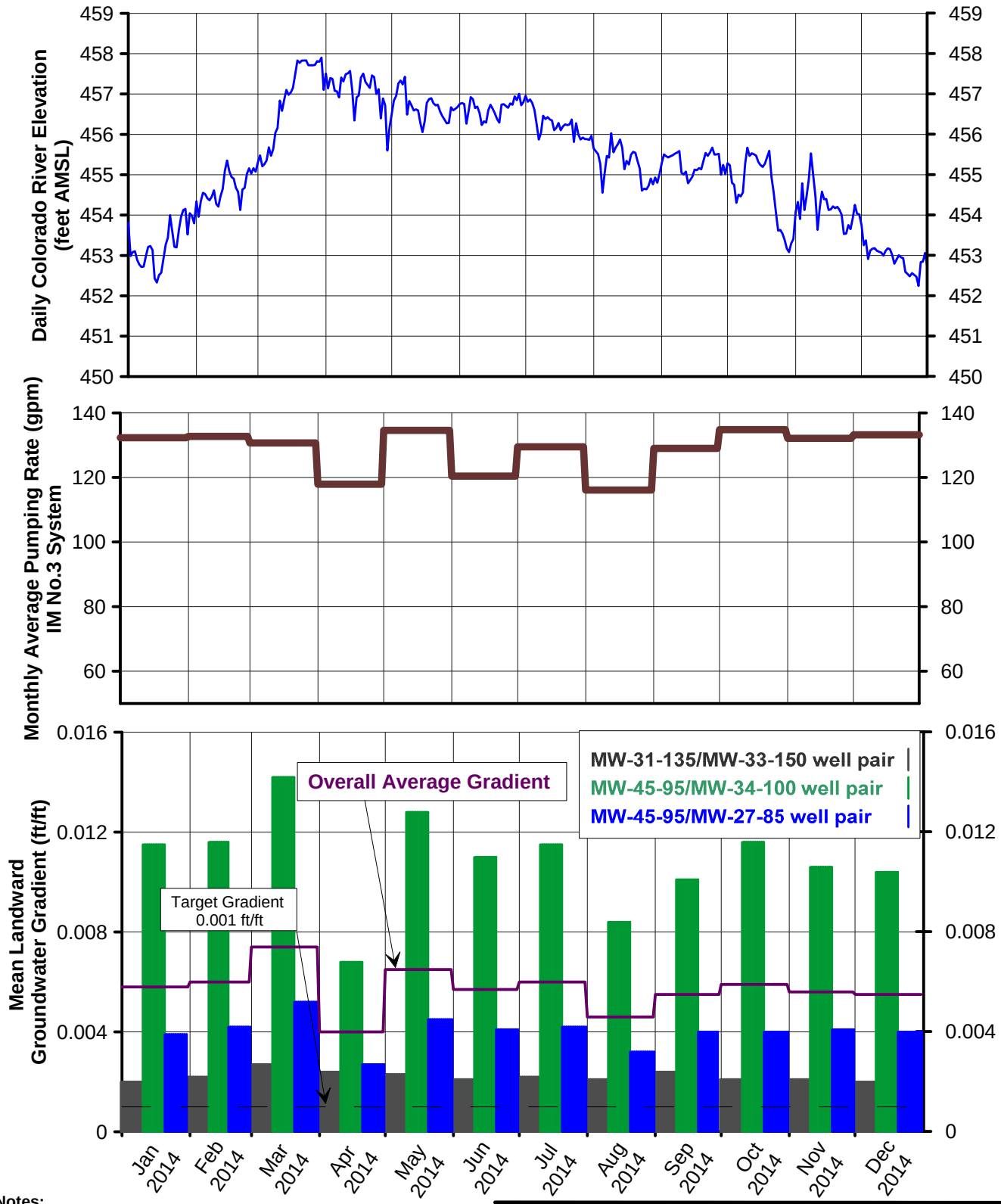

Notes:

1. For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2. Refer to Table 4-1 and Section 4.4 for discussion of pumping data.
3. Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4. Refer to Table 4-2 and Section 4.5 for discussion of gradient data.
5. AMSL = above mean sea level.

FIGURE 5-3
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION, AND PUMPING RATE, 2014 REPORTING PERIOD

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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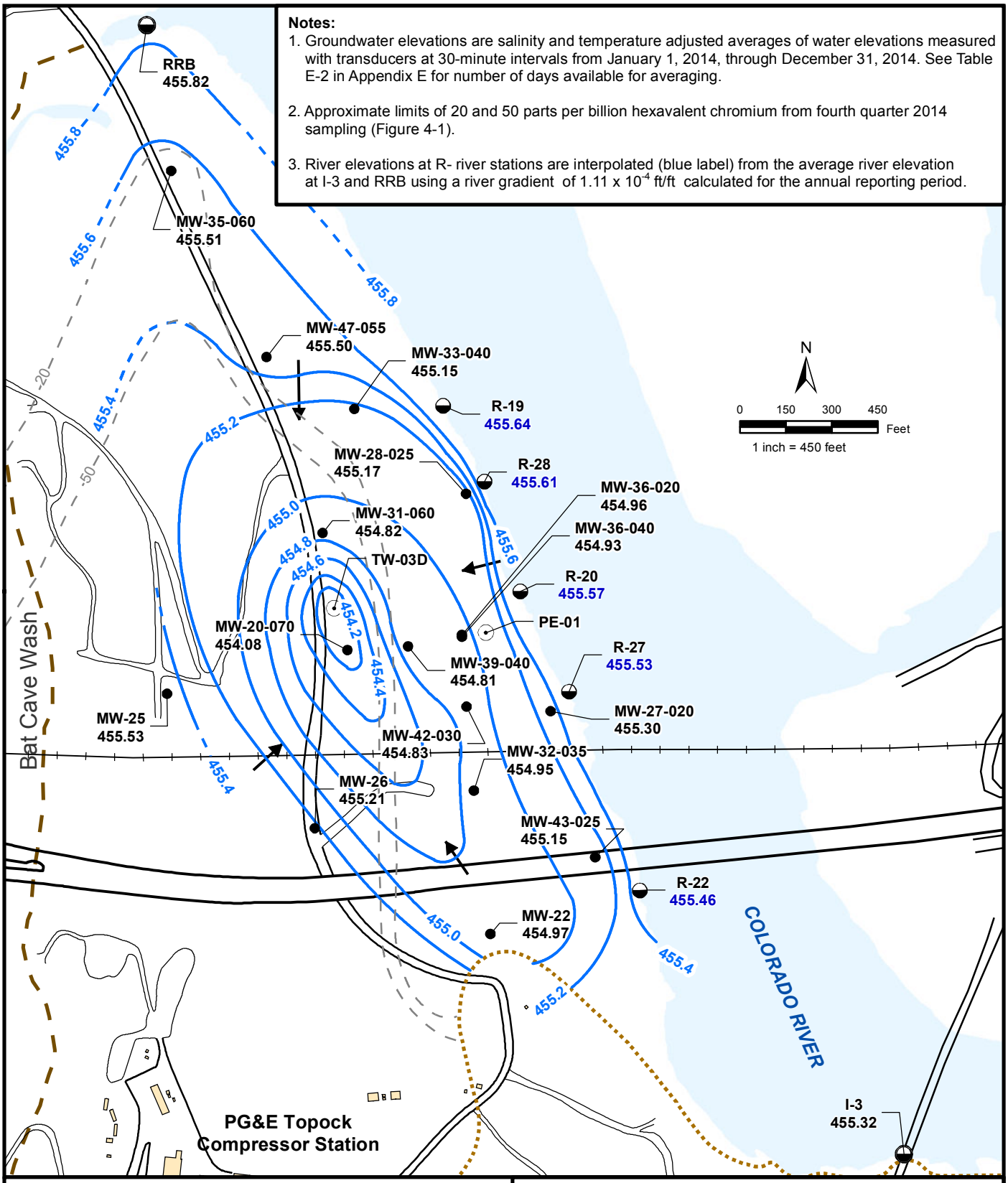

FIGURE 5-4a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, 2014 REPORTING PERIOD
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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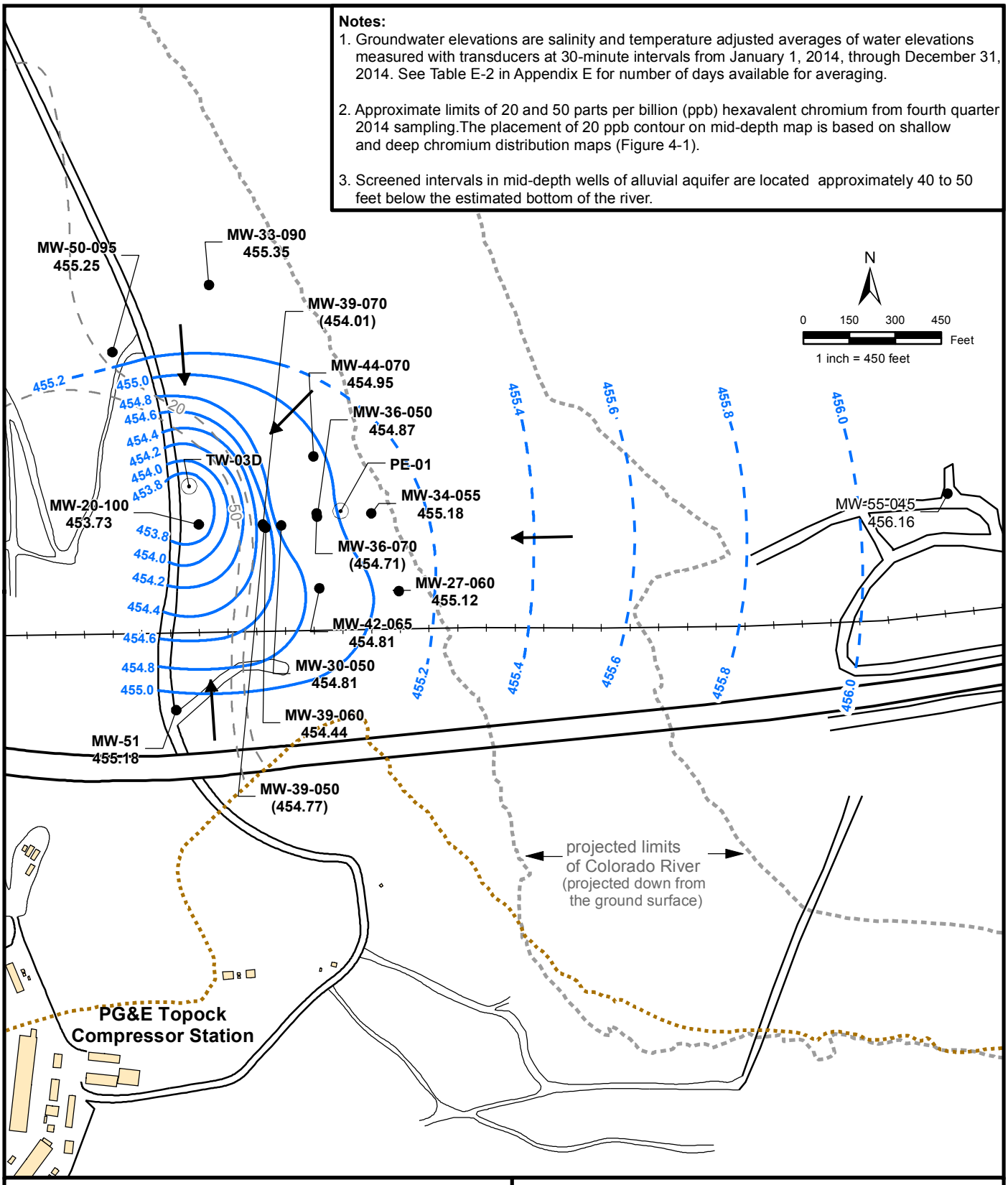
Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from January 1, 2014, through December 31, 2014. See Table E-2 in Appendix E for number of days available for averaging.

2. Approximate limits of 20 and 50 parts per billion (ppb) hexavalent chromium from fourth quarter 2014 sampling.The placement of 20 ppb contour on mid-depth map is based on shallow and deep chromium distribution maps (Figure 4-1).

3. Screened intervals in mid-depth wells of alluvial aquifer are located approximately 40 to 50 feet below the estimated bottom of the river.



MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft amsl)
MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft amsl) Not Used for Contouring
	Bedrock Contact at 425 ft elevation
	Interpreted Groundwater Flow Direction
	Monitoring Well
	River Station
	Extraction Well
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)

FIGURE 5-4b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS 2014 REPORTING PERIOD

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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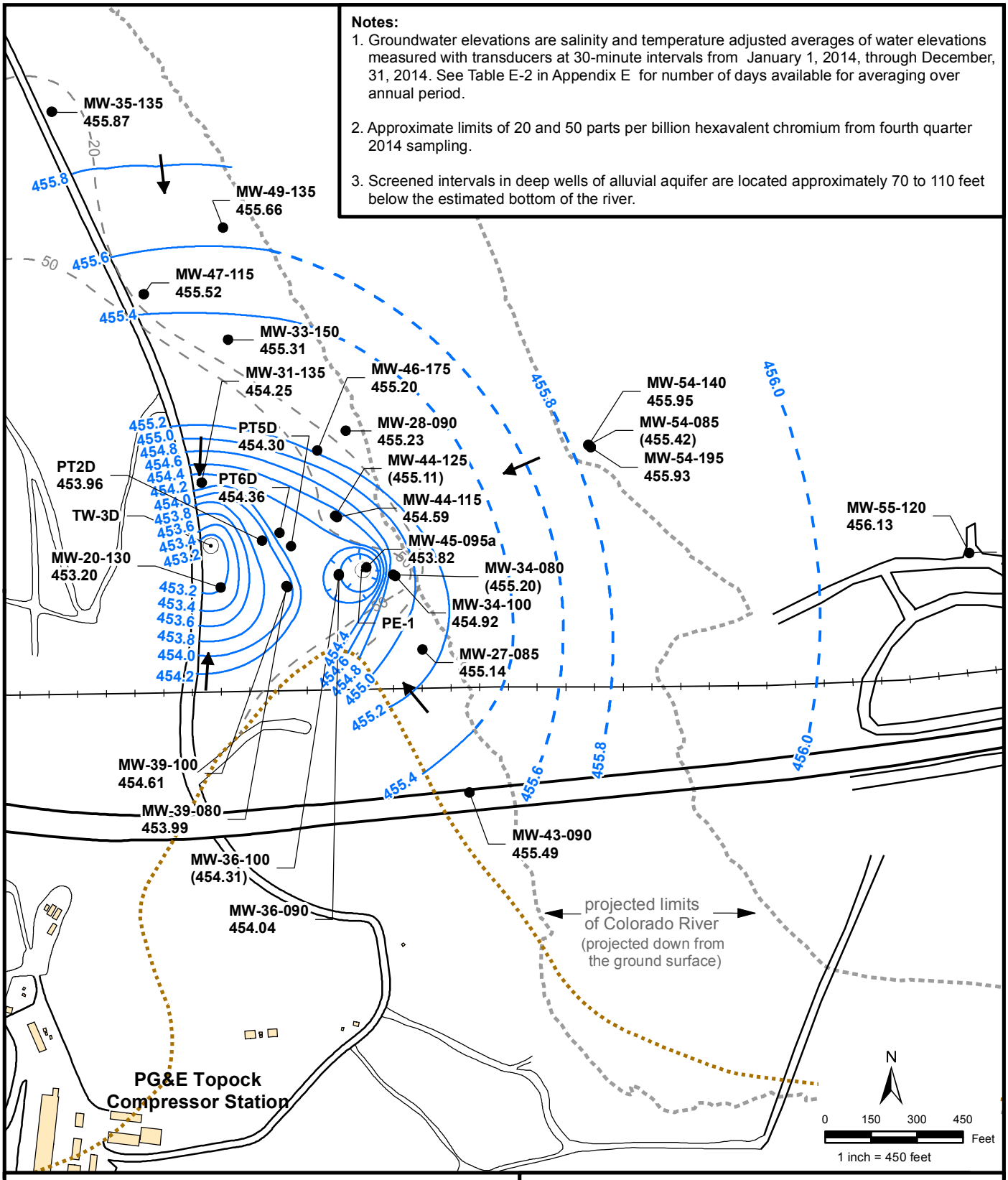
Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from January 1, 2014, through December, 31, 2014. See Table E-2 in Appendix E for number of days available for averaging over annual period.
2. Approximate limits of 20 and 50 parts per billion hexavalent chromium from fourth quarter 2014 sampling.
3. Screened intervals in deep wells of alluvial aquifer are located approximately 70 to 110 feet below the estimated bottom of the river.



MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft amsl)
MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft amsl) Not Used for Contouring
	Interpreted Groundwater Flow Direction
	Bedrock Contact at 395 ft elevation
	Monitoring Well
	River Station
	Extraction Well
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)

FIGURE 5-4c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, 2014 REPORTING PERIOD

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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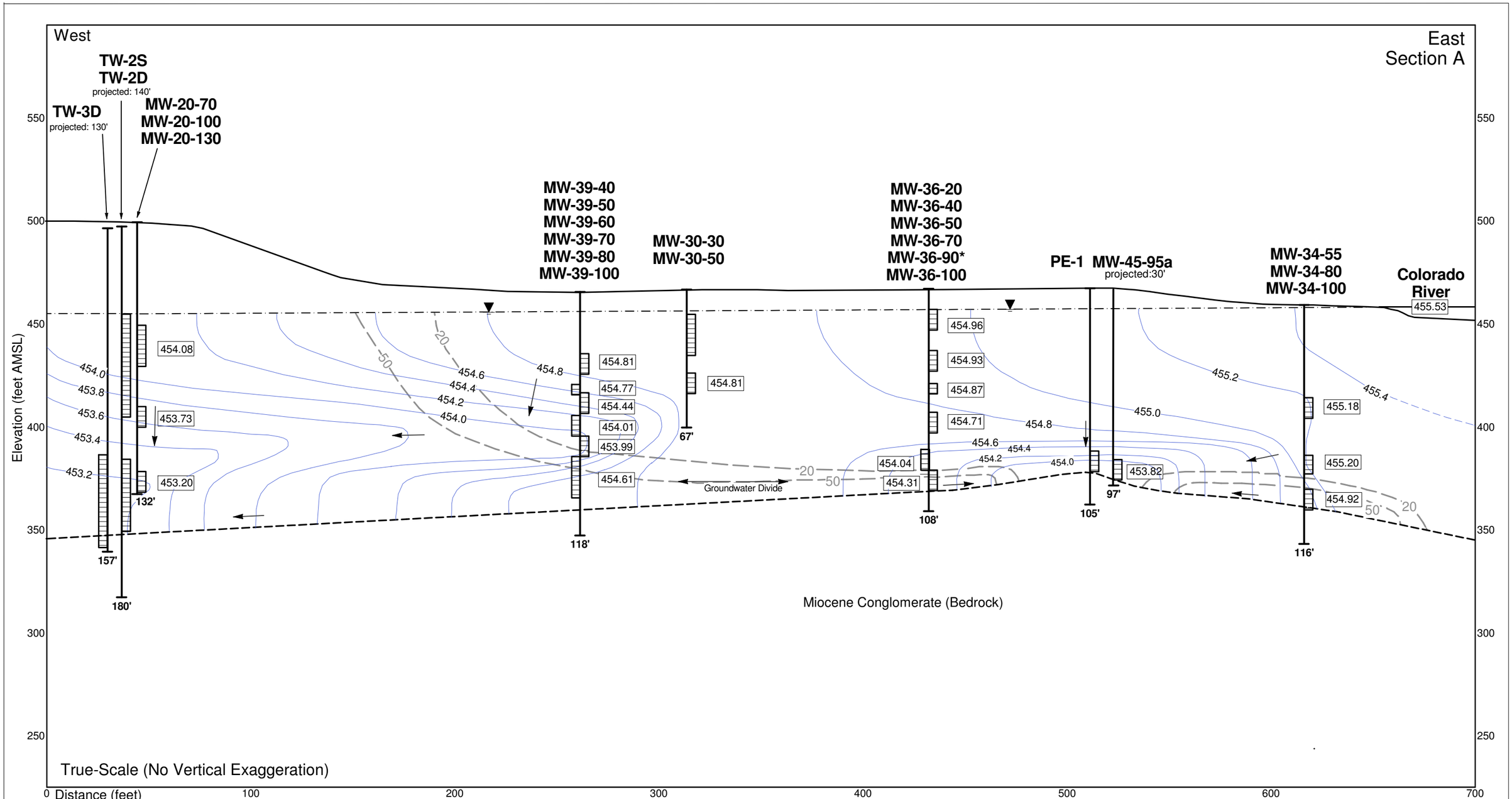

Notes:

1. Results show average groundwater elevations for January 1, 2014, through December 31, 2014, measured with transducers at 30-minute intervals.

2. Groundwater elevations adjusted for salinity and temperature. Well MW-36-90* is excluded from contouring. River elevation (R-27) is the calculated average river level based upon the river gradient between RRB and I-3.

AMSL = above mean sea level.

Legend:

MW-30-50 — Inferred water table; well screen; 455.23 — Average groundwater head (ft AMSL); 103 — boring depth (feet)

20 — Inferred hexavalent chromium contours (ppb) in Alluvial Aquifer from fourth quarter 2014.

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 5-5
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, 2014 REPORTING PERIOD

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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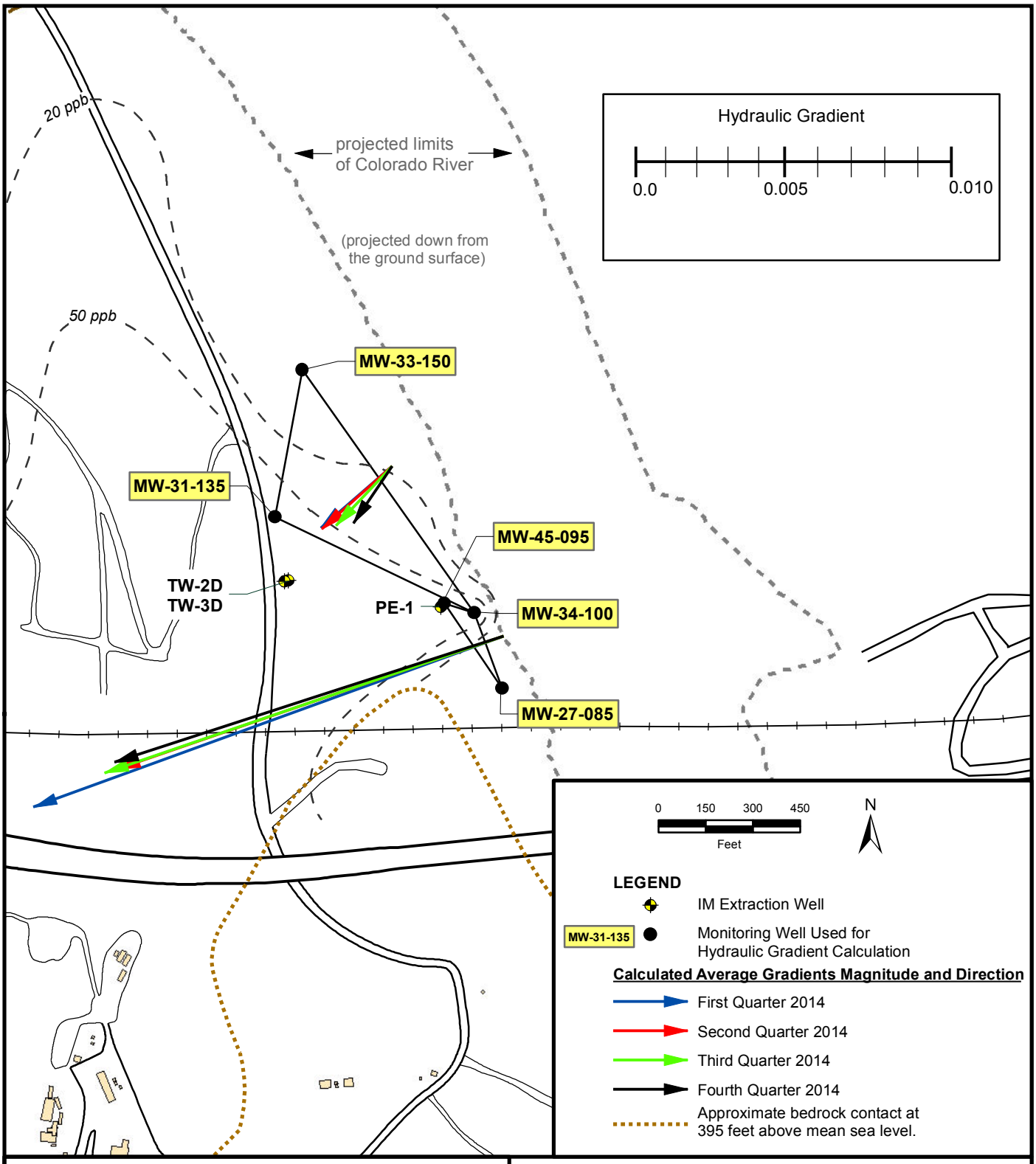
C:\USERS\CHRISTY.GITLIN\DOCUMENTS\TOPOCK\PMP\QUARTERLY REPORTS\2014\4TH QUARTER\FIGURES\WORK FILES\FIGURE5-5_XSECA_GW-ANNUAL.GDW;



Notes:

1. Direction and magnitude of hydraulic gradient for each well triad (MW-45-095, MW-33-150, MW-31-135 and MW-45-095, MW-34-100, MW-27-085) were calculated using triangulation with linear interpretation and average head values for each quaterly reporting period. See Table E-2 for days available for averaging.

2. Approximate limits of 20 and 50 parts per billion hexavalent chromium from Fourth Quarter 2014 sampling event.

3. Screened intervals in deep wells of alluvial aquifer are located approximately 70 to 110 feet below the estimated bottom of the river.

FIGURE 5-6
MAGNITUDE AND DIRECTION OF HYDRAULIC GRADIENTS IN LOWER DEPTH INTERVAL DURING 2014 ANNUAL PERIOD

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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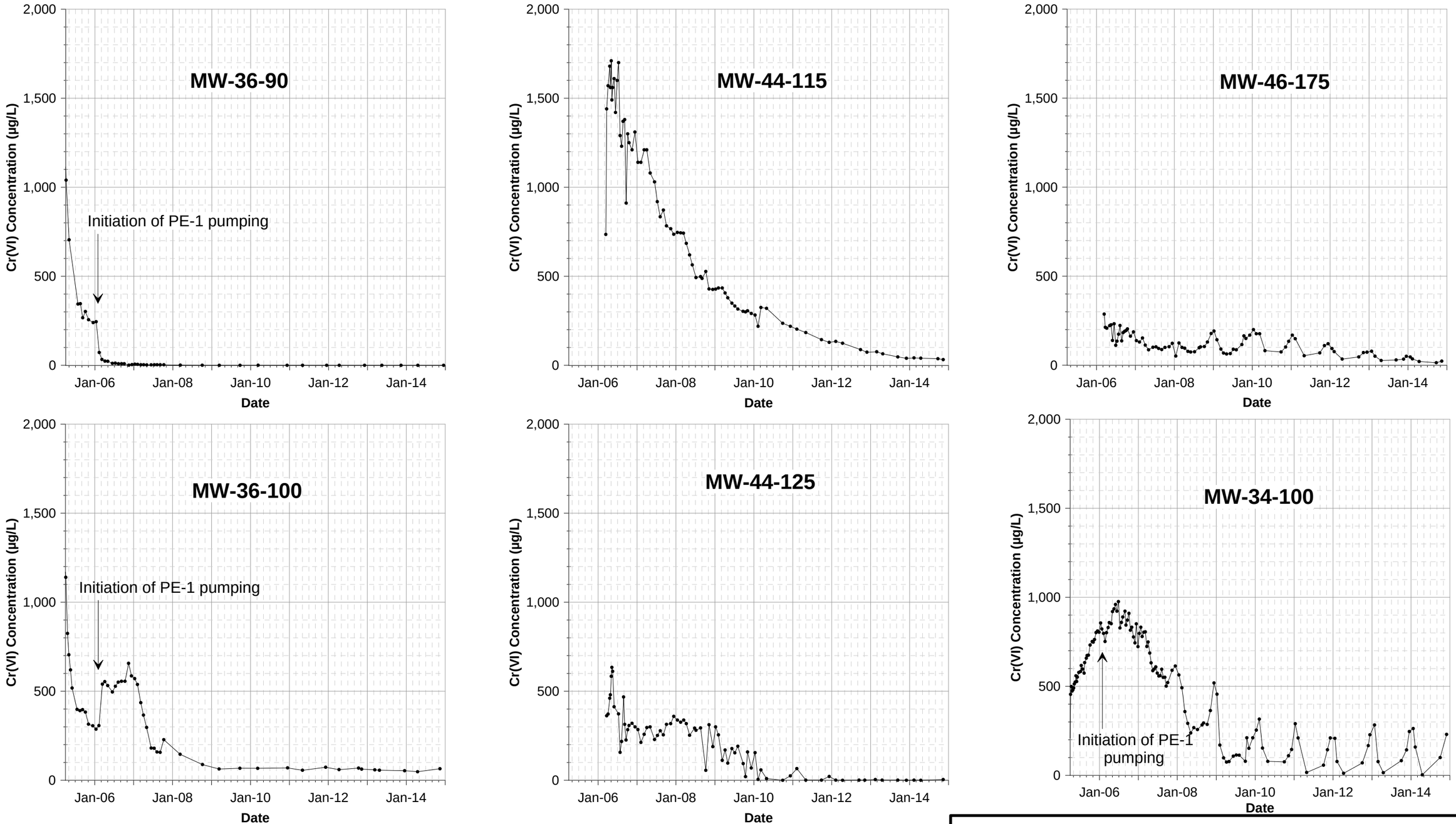

Notes:

1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west of PE-1. MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.

FIGURE 5-7
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS, APRIL 2005 THROUGH DECEMBER 2014
FOURTH QUARTER 2014 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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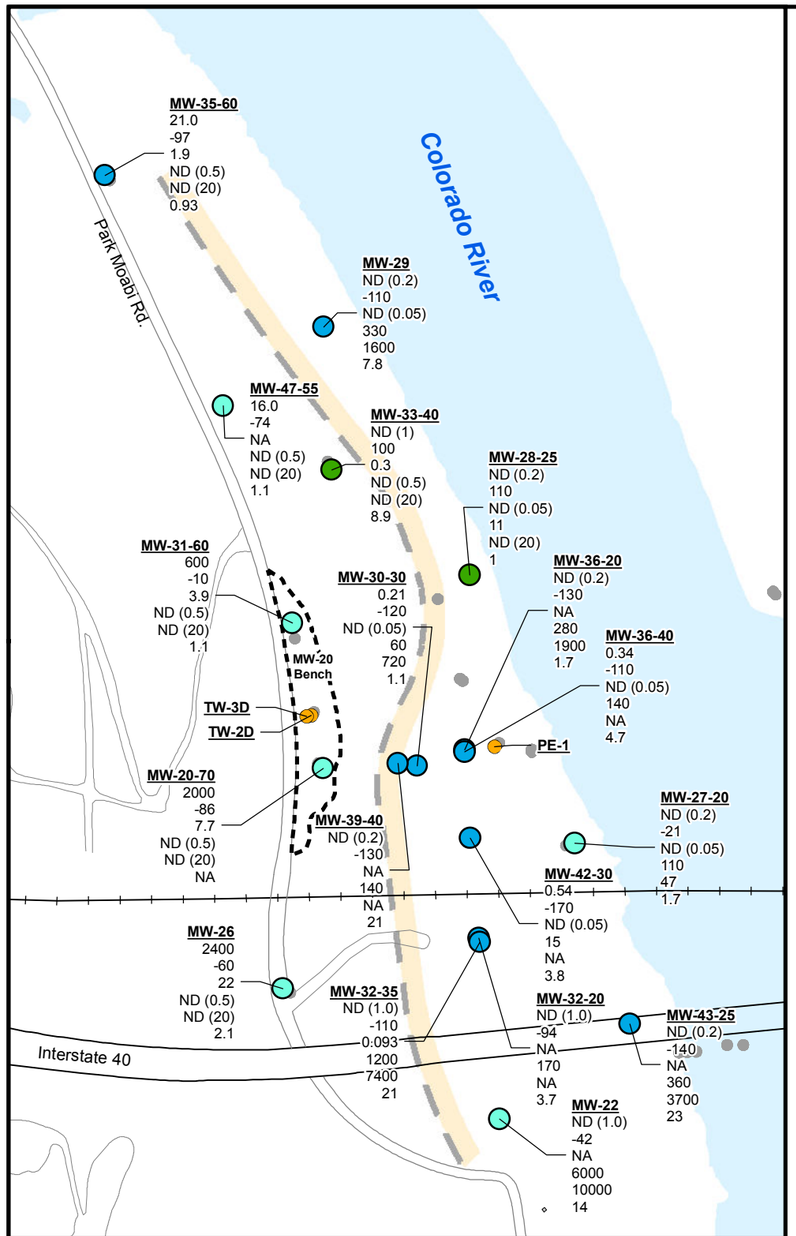
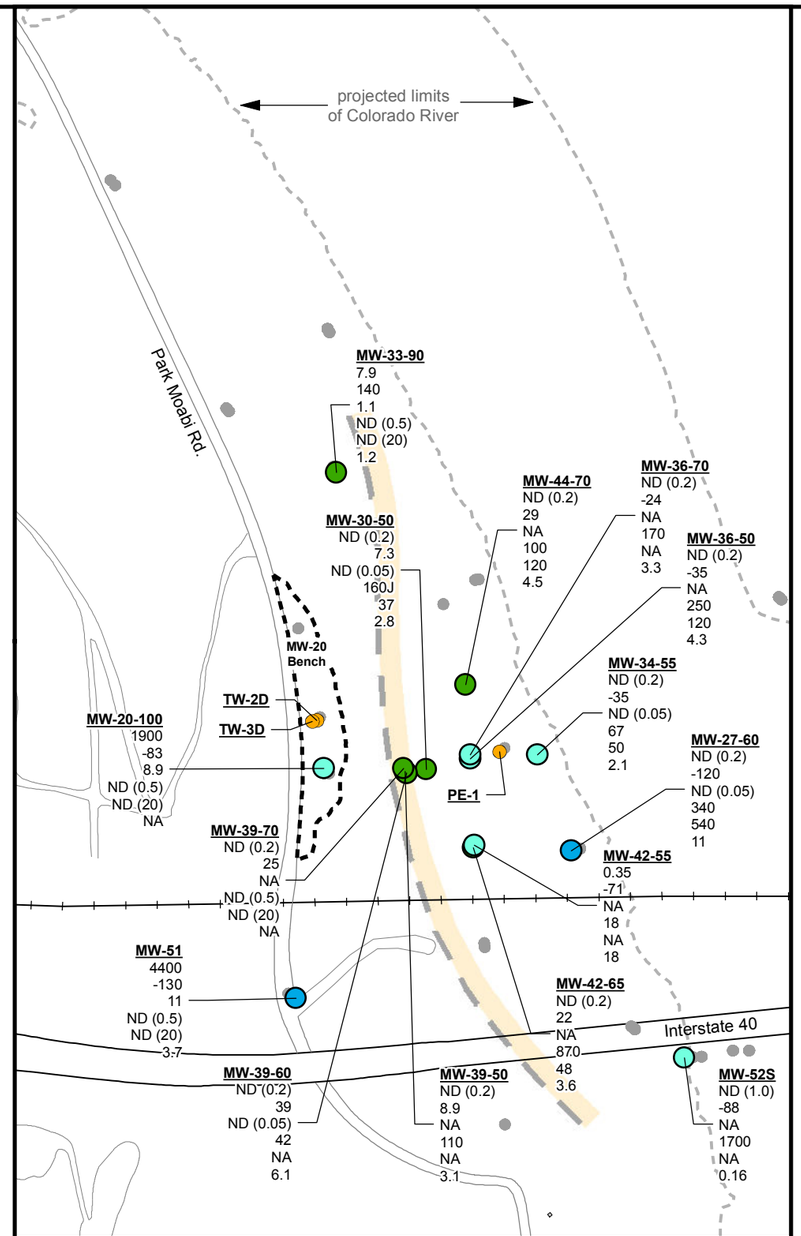
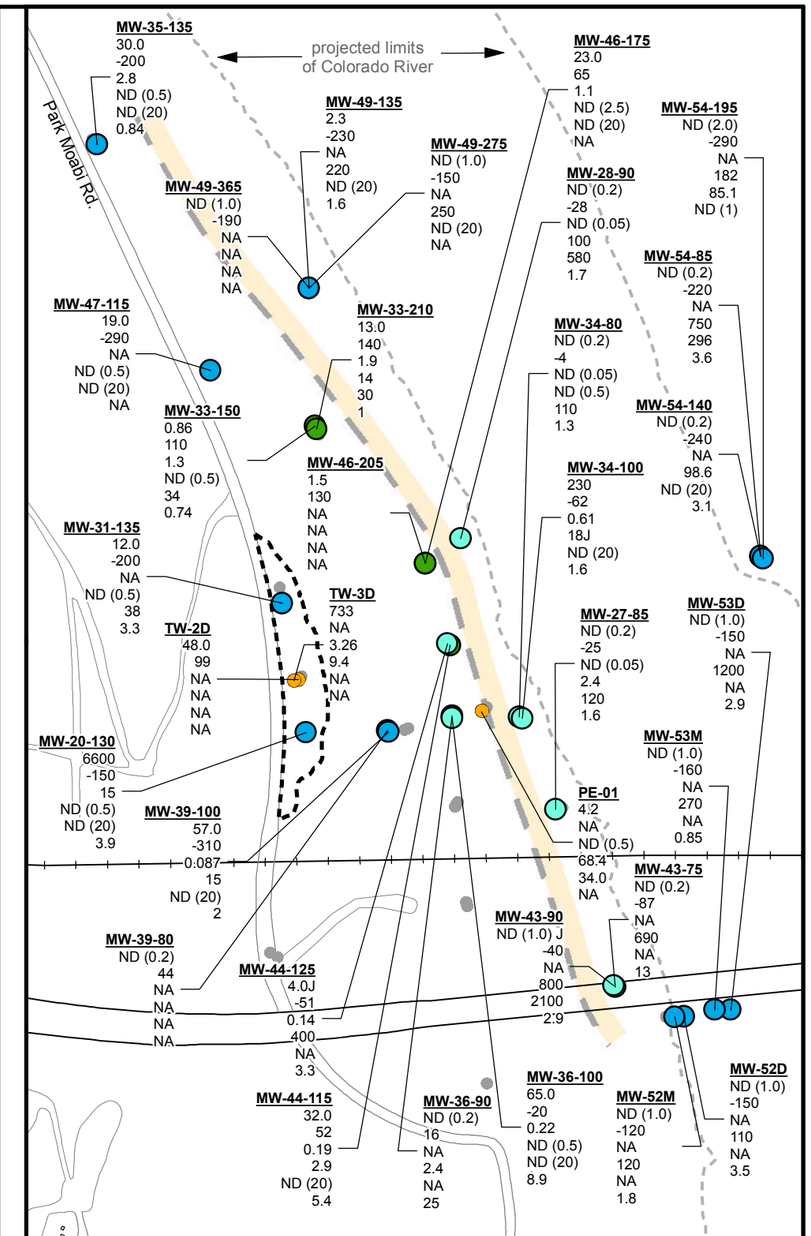


Shallow Wells (Upper Depth Interval) - 2014



Intermediate Wells (Middle Depth Interval) - 2014



Deep Wells (Lower Depth Interval) - 2014

LEGEND

- Approximate limit of reducing groundwater based upon a **combination** of redox indicator parameters.
- Groundwater ORP < -90 mV
- Groundwater -90 mV < ORP < 1 mV
- Groundwater ORP > 1 mV
- IM3 Extraction Wells (TW-2D, TW-3D, and PE-1)

MW-22	Groundwater Results, Fourth Quarter 2014
ND (1)	Hexavalent chromium, micrograms per liter (µg/L)
-65.7	Oxidation reduction potential (ORP), millivolts (mV)
ND (2.5)	Nitrate/Nitrite as N, milligrams per liter (mg/L)
4400	Manganese (Mn), mircrograms per liter (µg/L)
9400	Iron (Fe), mircrograms per liter (µg/L)
12	Arsenic (As), mircrograms per liter (µg/L)

Notes:
ND = not detected at listed reporting limit
NA = data not collected during reporting period
J = the value is an estimate

N

0 400 800 Feet

FIGURE 5-8
DISTRIBUTION OF Cr(VI), GEOCHEMICAL INDICATOR PARAMETERS, AND IN SITU BYPRODUCTS IN FLOODPLAIN WELLS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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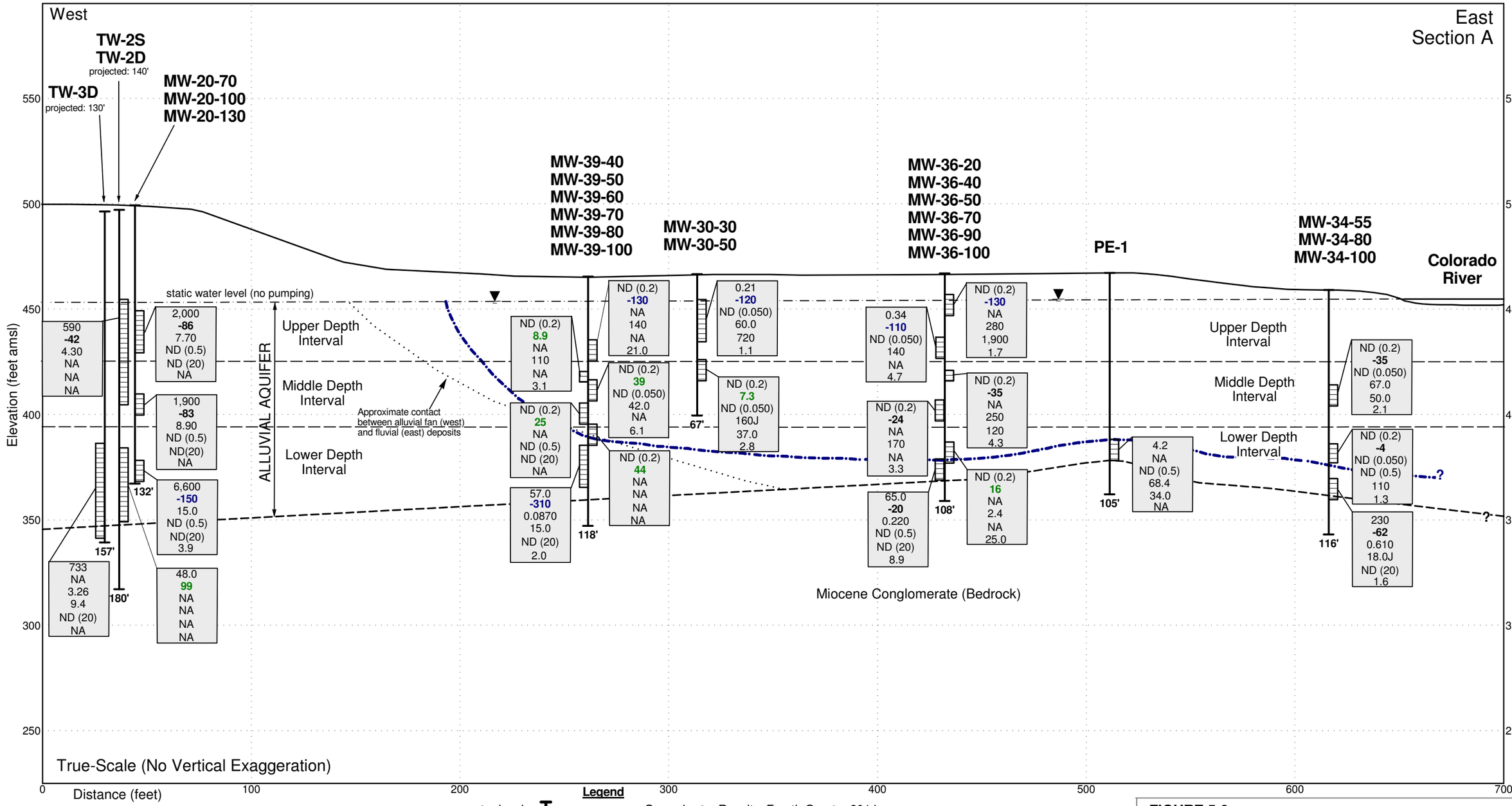

Notes:
ND = not detected at listed reporting limit.
NA = data not collected during reporting period.
amsl = above mean sea level.

Legend

water level

well screen

boring depth (feet) 103

3,130
75.2
16
ND (10)
ND (20)
16.0

Groundwater Results, Fourth Quarter 2014

Hexavalent chromium, micrograms per liter (µg/L)
Oxidation reduction potential, millivolts (mV)
Nitrate/Nitrite as N or Nitrate as N, milligrams per liter (mg/L)
Manganese (Mn), micrograms per liter (µg/L)
Iron (Fe), micrograms per liter (µg/L)
Arsenic (As), micrograms per liter (µg/L)

ORP values less than -90 mV highlighted blue.
Positive ORP values highlighted green.

Approximate limit of reducing water; based on a combination of redox indicator parameters.

Groundwater ORP <-90mV
Groundwater ORP -90mV <ORP<1mV
Groundwater ORP >1mV

FIGURE 5-9
DISTRIBUTION OF Cr(VI), GEOCHEMICAL INDICATOR PARAMETERS, AND IN SITU BYPRODUCTS IN FLOODPLAIN WELLS CROSS-SECTION A, FOURTH QUARTER 2014

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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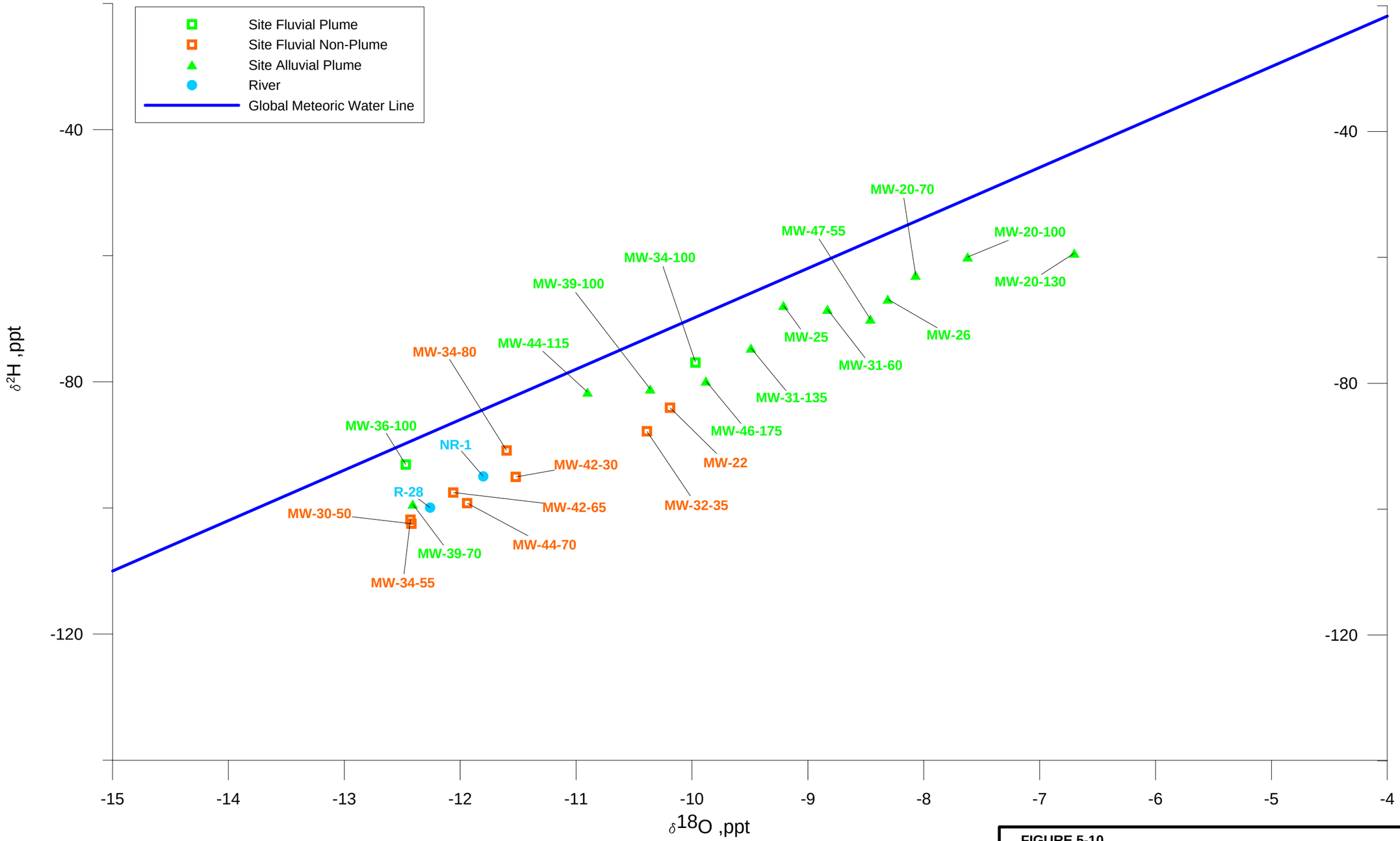

Notes:
ppt = parts per thousand.

1. Values for Performance Monitoring Program wells are averages from the 2014 reporting period.
2. Values from background wells are cumulative averages from all years.

FIGURE 5-10
AVERAGE STABLE ISOTOPES OF OXYGEN AND DEUTERIUM
JANUARY 2014 THROUGH DECEMBER 2014
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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Appendix A
Well Inspections and Construction Information

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-9	Bat Cave Wash	536.56	77 - 87	Alluvial	4 in PVC	89.4	80.6	Minimal Drawdown	
MW-10	Bat Cave Wash	530.65	74 - 94	Alluvial	4 in PVC	96.9	75.1	Minimal Drawdown	
MW-11	Bat Cave Wash	522.61	62.5 - 82.5	Alluvial	4 in PVC	86.1	66.9	Minimal Drawdown	
MW-12	East of Station	484.01	27.5 - 47.5	Alluvial	4 in PVC	50.4	29.3	Minimal Drawdown	
MW-13	Bat Cave Wash	488.64	28.5 - 48.5	Alluvial	4 in PVC	52.0	33.2	Minimal Drawdown	
MW-14	East Mesa	570.99	111 - 131	Alluvial	4 in PVC	133.8	114.8	Minimal Drawdown	
MW-15	East of New Ponds	641.52	180.5 - 200.5	Alluvial	4 in PVC	203.0	184.8	Minimal Drawdown	
MW-16	Near New Ponds	657.31	198 - 218	Alluvial	4 in PVC	218.1	200.1	Temp. pump	
MW-17	West of Mesa Area	589.96	130 - 150	Alluvial	4 in PVC	153.6	132.9	Temp. pump	
MW-18	West Mesa	545.32	85 - 105	Alluvial	4 in PVC	106.7	88.8	Minimal Drawdown	
MW-19	Route 66	499.92	46 - 66	Alluvial	4 in PVC	65.8	45.9	Minimal Drawdown	
MW-20-70	MW-20 bench	500.15	50 - 70	Alluvial	4 in PVC	69.6	47.5	Minimal Drawdown	
MW-20-100	MW-20 bench	500.58	89.5 - 99.5	Alluvial	4 in PVC	101.4	48.4	Minimal Drawdown	
MW-20-130	MW-20 bench	500.66	121 - 131	Alluvial	4 in PVC	132.3	49.2	Minimal Drawdown	
MW-21	Route 66	505.55	39 - 59	Alluvial	4 in PVC	58.5	50.4	Minimal Drawdown	low recharge well; typically purges dry at 1 casing volume
MW-22	Floodplain	460.72	5.5 - 10.5	Fluvial	2 in PVC	12.4	7.0	Minimal Drawdown	
MW-23-060	East Ravine	504.08	50 - 60	Bedrock	2 in Sch 40 PVC	60.2	49.0	Three Volume	
MW-23-080	East Ravine	504.13	75 - 80	Bedrock	2 in Sch 40 PVC	80.8	51.0	Three Volume	
MW-24A	MW-24 Bench	567.16	104 - 124	Alluvial	4 in PVC	127.5	111.2	Minimal Drawdown	
MW-24B	MW-24 Bench	564.76	193 - 213	Alluvial	4 in PVC	214.8	109.6	Minimal Drawdown	
MW-24BR	MW-24 Bench	563.95	378 - 437	Bedrock	4 in PVC	441.0	108.2	Fixed Volume	low recharge well; typically purges dry at 1 casing volume

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-25	Near Bat Cave Wash	542.90	84.5 - 104.5	Alluvial	4 in PVC	106.5	88.0	Minimal Drawdown	
MW-26	Route 66	502.22	51.5 - 71.5	Alluvial	2 in PVC	70.1	48.0	Minimal Drawdown	
MW-27-20	Floodplain	460.56	7 - 17	Fluvial	2 in PVC	14.4	6.2	Minimal Drawdown	
MW-27-60	Floodplain	461.38	47.3 - 57.3	Fluvial	2 in PVC	59.0	7.2	Minimal Drawdown	
MW-27-85	Floodplain	460.99	77.5 - 87.5	Fluvial	2 in PVC	80.0	6.7	Minimal Drawdown	
MW-28-25	Floodplain	466.77	13 - 23	Fluvial	2 in PVC	21.1	12.5	Minimal Drawdown	
MW-28-90	Floodplain	467.53	70 - 90	Fluvial	2 in PVC	98.4	12.7	Minimal Drawdown	
MW-29	Floodplain	485.21	29.5 - 39.5	Fluvial	2 in PVC	41.5	30.2	Minimal Drawdown	
MW-30-30	Floodplain	468.12	12 - 32	Fluvial	2 in PVC	26.9	14.0	Minimal Drawdown	
MW-30-50	Floodplain	468.81	40 - 50	Fluvial	4 in PVC	52.6	14.8	Minimal Drawdown	
MW-31-60	MW-20 Bench	496.81	41.5 - 61.5	Alluvial	4 in PVC	64.0	43.0	Minimal Drawdown	
MW-31-135	MW-20 Bench	498.11	113 - 133	Alluvial	2 in PVC	135.4	46.0	Minimal Drawdown	
MW-32-20	Floodplain	461.51	10 - 20	Fluvial	2 in PVC	19.6	7.5	Minimal Drawdown	
MW-32-35	Floodplain	461.63	27.5 - 35	Fluvial	4 in PVC	37.2	7.8	Minimal Drawdown	
MW-33-40	Floodplain	487.38	29 - 39	Fluvial	2 in PVC	41.8	33.4	Minimal Drawdown	
MW-33-90	Floodplain	487.55	69 - 89	Alluvial	4 in PVC	88.3	33.5	Minimal Drawdown	
MW-33-150	Floodplain	487.77	132 - 152	Alluvial	2 in PVC	155.4	34.0	Minimal Drawdown	
MW-33-210	Floodplain	487.25	190 - 210	Alluvial	2 in PVC	223.0	33.7	Minimal Drawdown	
MW-34-55	Floodplain	460.95	45 - 55	Fluvial	4 in PVC	56.6	7.1	Minimal Drawdown	
MW-34-80	Floodplain	461.20	73 - 83	Fluvial	4 in PVC	84.3	7.5	Minimal Drawdown	
MW-34-100	Floodplain	460.97	89.5 - 99.5	Fluvial	2 in PVC	117.0	7.6	Minimal Drawdown	

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-35-60	Route 66	484.33	41 - 61	Alluvial	2 in PVC	56.8	29.6	Minimal Drawdown	
MW-35-135	Route 66	484.24	116 - 136	Alluvial	2 in PVC	158.7	29.3	Minimal Drawdown	
MW-36-20	Floodplain	469.33	10 - 20	Fluvial	1 in PVC	20.3	16.2	Minimal Drawdown	
MW-36-40	Floodplain	469.59	30 - 40	Fluvial	1 in PVC	40.3	15.6	Minimal Drawdown	
MW-36-50	Floodplain	469.62	46 - 51	Fluvial	1 in PVC	108.0	15.4	Minimal Drawdown	
MW-36-70	Floodplain	469.27	60 - 70	Fluvial	1 in PVC	70.3	15.5	Minimal Drawdown	
MW-36-90	Floodplain	469.64	80 - 90	Fluvial	1 in PVC	90.3	13.8	Minimal Drawdown	
MW-36-100	Floodplain	469.65	88 - 98	Fluvial	2 in PVC	108.0	16.2	Minimal Drawdown	
MW-37D	Bat Cave Wash	486.19	180 - 200	Alluvial	2 in PVC	226.7	31.5	Minimal Drawdown	
MW-37S	Bat Cave Wash	485.97	64 - 84	Alluvial	2 in PVC	85.0	31.0	Minimal Drawdown	
MW-38D	Bat Cave Wash	525.31	163 - 183	Alluvial	2 in PVC	190.9	70.4	Temp. pump	
MW-38S	Bat Cave Wash	525.51	75 - 95	Alluvial	2 in PVC	98.1	71.2	Temp. pump	
MW-39-40	Floodplain	468.02	30 - 40	Fluvial	1 in PVC	42.1	15.0	Minimal Drawdown	
MW-39-50	Floodplain	467.93	47 - 52	Fluvial	1 in PVC	54.6	15.0	Minimal Drawdown	
MW-39-60	Floodplain	468.00	49 - 59	Alluvial	1 in PVC	66.3	15.2	Minimal Drawdown	
MW-39-70	Floodplain	468.02	60 - 70	Alluvial	1 in PVC	71.7	15.6	Minimal Drawdown	
MW-39-80	Floodplain	467.92	70 - 80	Alluvial	1 in PVC	82.6	15.5	Minimal Drawdown	
MW-39-100	Floodplain	468.12	80 - 100	Alluvial	2 in PVC	117.7	15.0	Minimal Drawdown	
MW-40D	I-40 Median	566.08	240 - 260	Alluvial	2 in PVC	266.0	111.0	Temp. pump	
MW-40S	I-40 Median	566.04	115 - 135	Alluvial	2 in PVC	134.0	110.5	Temp. pump	
MW-41D	Bat Cave Wash	479.42	271 - 291	Alluvial	2 in PVC	311.5	24.3	Minimal Drawdown	

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-41M	Bat Cave Wash	479.84	170 - 190	Alluvial	2 in PVC	190.0	24.4	Minimal Drawdown	
MW-41S	Bat Cave Wash	480.07	40 - 60	Alluvial	2 in PVC	60.0	24.8	Minimal Drawdown	
MW-42-30	Floodplain	463.74	9.8 - 29.8	Fluvial	2 in Sch 40 PVC	30.1	10.4	Minimal Drawdown	
MW-42-55	Floodplain	463.85	42.5 - 52.5	Fluvial	2 in PVC	52.8	9.8	Minimal Drawdown	
MW-42-65	Floodplain	463.37	56.2 - 66.2	Fluvial	2 in PVC	80.0	9.4	Minimal Drawdown	
MW-43-25	Floodplain	462.54	15 - 25	Fluvial	2 in PVC	25.0	8.5	Minimal Drawdown	
MW-43-75	Floodplain	462.71	65 - 75	Fluvial	2 in PVC	75.0	9.0	Minimal Drawdown	
MW-43-90	Floodplain	462.76	80 - 90	Fluvial	2 in PVC	97.0	9.3	Minimal Drawdown	
MW-44-70	Floodplain	471.90	61 - 71	Fluvial	2 in PVC	70.0	18.8	Minimal Drawdown	
MW-44-115	Floodplain	472.01	105 - 115	Alluvial	2 in PVC	113.5	18.4	Minimal Drawdown	
MW-44-125	Floodplain	472.04	116 - 125	Alluvial	2 in PVC	128.8	18.1	Minimal Drawdown	
MW-45-095a	Floodplain	470.03	83 - 93	Fluvial	2 in PVC	97.0	18.3	Temp. pump	pressure transducer location
MW-46-175	Floodplain	482.16	165 - 175	Alluvial	2 in PVC	175.5	28.5	Minimal Drawdown	
MW-46-205	Floodplain	482.23	196.5 - 206.5	Alluvial	2 in PVC	206.5	28.9	Minimal Drawdown	
MW-47-55	Floodplain	484.04	45 - 55	Alluvial	2 in PVC	55.0	29.4	Minimal Drawdown	
MW-47-115	Floodplain	484.17	105 - 115	Alluvial	2 in PVC	115.0	29.8	Minimal Drawdown	
MW-48	East of Station	486.22	124 - 134	Bedrock	2 in PVC	138.0	31.2	Three Volume	low recharge well; typically purges dry at 1 casing volume
MW-49-135	Floodplain	484.02	125 - 135	Alluvial	1.5 in PVC	135.0	30.9	Minimal Drawdown	
MW-49-275	Floodplain	483.95	255 - 275	Alluvial	2 in PVC	274.7	31.1	Minimal Drawdown	
MW-49-365	Floodplain	484.01	346 - 366	Alluvial	2 in PVC	367.4	32.6	Minimal Drawdown	
MW-50-095	Route 66	496.49	85 - 95	Alluvial	2 in PVC	95.0	42.0	Minimal Drawdown	

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-50-200	Route 66	496.35	190 - 200	Alluvial	2 in PVC	204.5	43.1	Minimal Drawdown	
MW-51	Route 66	501.56	97 - 112	Alluvial	4 in PVC	113.3	47.5	Minimal Drawdown	
MW-52D	Floodplain	462.16	85 - 87	Fluvial	0.75 in MLABS	89.5	14.9	Fixed Volume	
MW-52M	Floodplain	462.16	66 - 68	Fluvial	0.75 in MLABS	70.5	11.3	Fixed Volume	
MW-52S	Floodplain	462.16	47 - 49	Fluvial	0.75 in MLABS	51.5	9.8	Fixed Volume	
MW-53D	Floodplain	461.32	123.5 - 125	Fluvial	0.75 in MLABS	---	14.3	Fixed Volume	
MW-53M	Floodplain	461.32	98.5 - 100	Fluvial	0.75 in MLABS	---	13.7	Fixed Volume	
MW-54-85	Arizona	466.10	77 - 87	Fluvial	2 in PVC	93.2	11.3	Minimal Drawdown	
MW-54-140	Arizona	465.98	128 - 138	Fluvial	2 in PVC	138.0	11.3	Minimal Drawdown	
MW-54-195	Arizona	466.32	185 - 195	Fluvial	2 in PVC	195.0	12.1	Minimal Drawdown	
MW-55-45	Arizona	465.66	37 - 47	Fluvial	2 in PVC	54.0	10.2	Minimal Drawdown	
MW-55-120	Arizona	465.46	108 - 118	Fluvial	2 in PVC	120.3	10.1	Minimal Drawdown	
MW-56D	Arizona	461.36	103.5 - 105.5	Fluvial	0.75 in MLABS	---	16.3	Fixed Volume	
MW-56M	Arizona	461.36	73.5 - 75.5	Fluvial	0.75 in MLABS	---	15.2	Fixed Volume	
MW-56S	Arizona	461.36	33.5 - 35.5	Fluvial	0.75 in MLABS	---	14.1	Fixed Volume	
MW-57-050	East Ravine	508.76	40 - 50	Bedrock	2 in Sch 40 PVC	50.0	51.6	Three Volume	
MW-57-070	East Ravine	509.37	55 - 70	Bedrock	2 in Sch 40 PVC	70.0	53.4	Three Volume	
MW-57-185	East Ravine	508.97	70 - 184	Bedrock	4 in Sch 40 PVC	184.7	52.5	Three Volume	
MW-58-065	East Ravine	523.26	54 - 64	Bedrock	2 in Sch 40 PVC	66.0	67.5	Three Volume	
MW-58BR	East Ravine	---	0 - 0	Bedrock	---	---	67.8	Minimal Drawdown	
MW-59-100	East Ravine	541.61	86 - 101	Alluvial	2 in Sch 40 PVC	101.0	86.0	Minimal Drawdown	

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-60-125	East Ravine	555.47	103 - 123	Bedrock	2 in Sch 40 PVC	122.5	99.8	Three Volume	
MW-60BR-245	East Ravine	554.95	136 - 245	Bedrock	5 in	244.1	99.8	Three Volume	
MW-61-110	East Ravine	544.03	92 - 112	Bedrock	2 in Sch 40 PVC	112.5	88.6	Three Volume	
MW-62-065	East Ravine	503.56	44.5 - 64.5	Bedrock	2 in Sch 40 PVC	67.4	48.8	Three Volume	
MW-62-110	East Ravine	504.05	85 - 110	Bedrock	---	110.0	37.5	Flute	
MW-62-190	East Ravine	504.05	155 - 192	Bedrock	---	190.0	36.5	Flute	
MW-63-065	East Ravine	504.47	46 - 66	Bedrock	2 in Sch 40 PVC	65.6	50.2	Three Volume	
MW-64BR	East Ravine	575.60	2 - 258	Bedrock	3 in	260.0	120.6	Minimal Drawdown	
MW-65-160	Topock Compressor Station	596.59	150 - 160	Alluvial	2 in PVC	160.1	141.2	Minimal Drawdown	
MW-65-225	Topock Compressor Station	596.58	215 - 225	Alluvial	2 in PVC	225.1	141.2	Minimal Drawdown	
MW-66-165	Topock Compressor Station	586.16	142 - 162	Alluvial	2 in PVC	162.1	130.6	Minimal Drawdown	
MW-66-230	Topock Compressor Station	586.22	218 - 228	Alluvial	2 in PVC	228.1	131.2	Minimal Drawdown	
MW-66BR-270	Topock Compressor Station	586.15	248 - 271	Bedrock	5 in	270.6	153.0	Three Volume	
MW-67-185	Topock Compressor Station	625.91	177 - 187	Alluvial	2 in	186.7	170.4	Minimal Drawdown	
MW-67-225	Topock Compressor Station	625.83	210 - 225	Alluvial	2 in PVC	225.0	170.4	Minimal Drawdown	
MW-67-260	Topock Compressor Station	625.81	250 - 260	Alluvial	2 in PVC	260.0	170.5	Minimal Drawdown	
MW-68-180	Topock Compressor Station	621.17	165 - 180	Alluvial	2 in PVC	180.1	165.9	Minimal Drawdown	
MW-68-240	Topock Compressor Station	621.17	220 - 240	Alluvial	2 in PVC	240.1	166.1	Minimal Drawdown	
MW-68BR-280	Topock Compressor Station	620.64	257 - 279	Bedrock	5 in	278.2	165.3	Three Volume	
MW-69-195	Topock Compressor Station	631.36	176 - 196	Bedrock	2 in	195.5	175.5	Three Volume	
MW-70-105	East Ravine	541.47	85 - 105	Bedrock	2 in PVC	107.8	84.8	Three Volume	

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP Monitoring Wells									
MW-70BR-225	East Ravine	539.84	120 - 227	Bedrock	5 in	229.3	83.5	Three Volume	
MW-71-035	East Ravine	483.69	26 - 36	Alluvial	2 in	36.2	28.6	Minimal Drawdown	
MW-72-080	East Ravine	513.32	60 - 80	Bedrock	2 in	80.1	59.1	Three Volume	
MW-72BR-200	East Ravine	513.79	107 - 200	Bedrock	in	200.0	58.8	Three Volume	
MW-73-080	East Ravine	505.84	60.2 - 80.2	Bedrock	2 in	79.9	51.4	Three Volume	
MW-74-240	East Ravine	672.34	220 - 240	Bedrock	2 in	239.7	215.9	Three Volume	
OW-3D	West Mesa	558.63	242 - 262	Alluvial	2 in Sch 40 PVC	272.5	102.1	Minimal Drawdown	
OW-3M	West Mesa	558.90	180 - 200	Alluvial	2 in Sch 40 PVC	200.3	102.3	Minimal Drawdown	
OW-3S	West Mesa	558.58	86 - 116	Alluvial	2 in Sch 40 PVC	116.3	102.0	Three Volume	
PGE-7BR	MW-24 Bench	---	249 - 300	Bedrock	7 in	300.0	110.5	Three Volume	inactive supply
PGE-8	Station	596.01	405 - 554	Bedrock	6.75 in Steel	564.0	141.1	Three Volume	inactive injection
Other Site Wells not in GMP									
MW-1	New Ponds	661.76	201 - 211	Alluvial	4 in PVC	217.0	205.4	Ded. RF	active PG&E pond monitoring well
MW-3	New Ponds	650.51	193 - 203	Alluvial	4 in PVC	205.0	194.6	Ded. RF	active PG&E pond monitoring well
MW-4	New Ponds	625.73	164.5 - 174.5	Alluvial	4 in PVC	176.3	169.1	Ded. RF	active PG&E pond monitoring well
MW-5	New Ponds	635.69	175.9 - 184.9	Alluvial	4 in PVC	186.2	178.8	Ded. RF	active PG&E pond monitoring well
MW-6	New Ponds	642.84	184.5 - 193.5	Alluvial	4 in PVC	194.9	185.9	Ded. RF	active PG&E pond monitoring well
MW-7	New Ponds	631.91	172.7 - 182.7	Alluvial	4 in PVC	185.0	175.6	Ded. RF	active PG&E pond monitoring well
MW-8	New Ponds	627.54	169 - 178	Alluvial	4 in PVC	179.9	170.7	Ded. RF	active PG&E pond monitoring well
Test and Extraction Wells									
PE-1	Floodplain	457.52	79 - 89	Fluvial	6 in Sch 40 PVC	99.0	16.4	Extraction Well	active IM extraction well
TW-1	Plan B Test	620.55	169 - 269	Alluvial	5 in PVC	271.0	160.0	Three Volume	inactive pilot test well

TABLE A-1

Well Construction and Sampling Summary, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
Test and Extraction Wells									
TW-2D	MW-20 bench	493.29	113 - 148	Alluvial	6 in Sch 80 PVC	150.0	69.3	Extraction Well	inactive IM extraction well
TW-2S	MW-20 bench	499.05	42.5 - 92.5	Alluvial	6 in Sch 80 PVC	97.5	40.9	Extraction Well	inactive IM extraction well
TW-3D	MW-20 bench	498.09	111 - 156	Alluvial	8 in PVC	156.0	46.5	Extraction Well	active IM extraction well
TW-4	Floodplain	484.11	210 - 250	Alluvial	4 in PVC	255.0	31.1	Temp. pump	
TW-5	Route 66	496.30	110 - 150	Alluvial	4 in PVC	155.0	43.0	Temp. pump	
Water Supply Wells									
Park Moabi-3	Park Moabi	518.55	80 - 200	Alluvial	8 in Steel	252.0	61.3	Active supply well	call Park Ranger to schedule sampling
Park Moabi-4	Park Moabi	---	93 - 140	Alluvial	Steel	---	---	Active supply well	

Notes:

amsl = above mean sea level.
bgs = below ground surface.
btoc = below top of casing.
CD pump = dedicated constant-discharge electric submersible pump.
Ded. RF = dedicated Redi - Flo submersible pump.
Flute = Flexible Liner Underground Technologies.
GMP = Groundwater Monitoring Program.
NA = not known or available.
PVC = polyvinyl chloride.
Redi-Flo AR = adjustable-rate electric submersible pump.
Temp pump = temporary pump.

Depth to water shown is the most recently measured depth to water.

All GMP wells except low recharge wells, active IM extraction wells, and Park Moabi wells are purged and sampled using well-volume method.

Table A-2
Well Inspection Log, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Notes	Required Actions	Action Completed? (Y/N)	Action Completed Date
CW-1D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-1M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-2D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-2M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-3D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-3M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-4D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-4M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-01	12/02/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	needs paint			
MW-03	12/02/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	needs paint			
MW-04	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-05	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-06	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-07	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-08	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-09	12/02/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-10	12/02/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-11	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-12	12/15/14	Y	N	Y	N	Y	Y	*	N *	Y	Y	N	Y	NA	Soil deposition around well. No change.			
MW-13	11/13/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	Needs paint	Needs paint.		
MW-14	11/12/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-15	11/11/04	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-16	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-17	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs lid painted			
MW-18	11/13/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-19	12/10/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-20-070	12/15/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint	Needs paint.		
MW-20-100	12/15/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint	Needs paint.		
MW-20-130	12/15/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint	Needs paint.		
MW-21	11/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-22	12/18/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-23-060 MW-23-080	11/10/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-24 BR	12/04/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-24A	11/04/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-24B	12/18/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-25	12/02/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-26	12/15/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-27-020	11/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-27-060	11/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-27-085	11/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-28-025	11/11/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-28-090	11/11/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-29	11/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-30-030	11/10/14	Y	N	Y	N	Y	NA	Y	N*	Y	Y	N	Y	NA	Sand deposited over pad.			
MW-30-050	11/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-31-060	12/03/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-31-135	11/05/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint	Needs paint.		
MW-32-020	11/11/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-32-035	11/11/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				

Table A-2
Well Inspection Log, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Notes	Required Actions	Action Completed? (Y/N)	Action Completed Date
MW-33-150	11/12/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-33-210	11/12/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-33-040	11/11/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-33-090	11/12/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-34-055	11/06/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-34-080	11/06/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-34-100	12/01/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-35-135	11/13/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-35-60	11/13/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-36-020 MW-36-070	12/15/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-36-090 MW-36-040	12/15/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-36-050 MW-36-100	11/13/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-37D	12/02/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-37S	11/12/14	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	NA	No bollards. No change.			
MW-38S	11/05/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-38D	11/05/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-39-040 MW-39-070	12/16/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-39-050 MW-39-080	12/16/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-39-060 MW-39-100	12/01/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-40D	12/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-40S	12/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-41D	12/17/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	Slight erosion under pad, 1"; no change.			
MW-41M	11/04/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-41S	11/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-42-030	11/05/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-42-055	11/06/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-42-065	11/06/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-43-025	11/05/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-43-075	11/05/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-43-090	11/05/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-44-125 MW-44-070	11/11/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA	erosion around concrete pad but not at wellhead.			
MW-44-115	11/12/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-45-095a MW-45-095b	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-46-175 MW-46-205	11/13/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-47-055 MW-47-115	11/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-48	11/04/14	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	NA	found pump to be tough to install. pump did not want to move down the well with ease.			

Table A-2
Well Inspection Log, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Notes	Required Actions	Action Completed? (Y/N)	Action Completed Date
MW-49-135 MW-49-275 MW-49-365	12/17/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-50-095 MW-50-200	11/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-51	12/15/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-52	12/17/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-53	12/17/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-54-085 MW-54-140	11/18/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-54-195	11/18/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-55-045 MW-55-120	11/18/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-56 D/S/M	12/18/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-57-050	12/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-57-070	12/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-57-185	11/10/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-58BR	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-58-065	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-60-125	12/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-60BR-245	12/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-61-110	12/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-59-100	12/15/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-62-110 MW-62-190	12/09/14	N *	N	NA	N	Y	NA	Y	N	Y	NA	N	Y	NA	* Static WL not measured in FLUTE wells			
MW-62-065	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-63-065	11/05/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-64-BR	12/08/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-65-160 MW-65-225	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-66-165 MW-66-230	12/10/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-66BR-270	12/16/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-67-185	12/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-67-225 MW-67-260	12/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-68BR	12/18/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-68-180 MW-68-290	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-69-195	12/11/04	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-70BR-225	12/16/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-70-105	12/02/14	Yes	No	Yes	No	Yes	NA	Yes	No	Yes	Yes	No	Yes	NA				
MW-71-035	11/06/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-72-080	12/01/14	Y	N	Y	N	Y	NA	Y	N *	Y	Y	N	Y	NA	Soil deposition on pad. No change.			
MW-72BR-200	11/17/14	Y	N	Y	N	Y	NA	Y	N *	Y	Y	N	Y	NA	Soil deposition on pad. No change.			
MW-73-080	12/02/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-74-240	12/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MWP-08	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				

Table A-2
Well Inspection Log, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Notes	Required Actions	Action Completed? (Y/N)	Action Completed Date
MWP-10	12/02/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
OW-1D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-1M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-1S	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-2D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-2M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-2S	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-3D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-3M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-3S	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-5D	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	slight erosion beneath pad			
OW-5M	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	slight erosion beneath pad			
OW-5S	12/03/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	slight erosion beneath pad			
P2	12/03/14	Y	N	Y	N	*Y	NA	Y	N	Y	Y	N	Y	NA	*see note from Q3 2013 - no change			
PG&E-8	12/10/14	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
PGE-7	12/04/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	Needs resurveyed.	Needs resurveyed.		
PT-1 3 WELLS	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	vis. erosion under pad - no change			
PT-2 3 WELLS	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-3 3 WELLS	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-4 3 WELLS	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-5 3 WELLS	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-6 3 WELLS	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-7 S/D	12/10/14	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-7M	12/10/14	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-8 S/D	12/10/14	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-8M	12/10/14	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-9 S/D	12/10/14	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-9M	12/10/14	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PTI-1D	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PTI-1M	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PTI-1S	12/09/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
TW-01	12/22/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
TW-04	11/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
TW-05	11/11/14	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				

Notes:
* There is a note with more information on this parameter.
NA = Not applicable
PVC = polyvinyl chloride

Appendix B
Lab Reports, November through December 2014
(Provided on CD-ROM Only with Hard Copy Submittal)

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

14011

QC Level: Level IV

Subcontractor:

Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler:

10-Nov-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N013831-012D / MW-31-135-200	Water	11/5/2014 3:48:00 PM	8OZP	1		
N013831-013E / MW-42-030-200	Water	11/5/2014 3:03:00 PM	8OZP	1		
N013831-024F / MW-34-055-200	Water	11/6/2014 1:46:00 PM	8OZP	1		
N013831-030E / MW-42-065-200	Water	11/6/2014 9:27:00 AM	8OZP	1		

3.4°C

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13831A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen and Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)941-9227.

GSO# 526105287

		Date/Time			Date/Time
Relinquished by:	jpg 11/10/14	17:00	**Received by:**	LaRoos PAES	11.12.14 1055
Relinquished by:			**Received by:**		

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N013831A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: November 12th, 2014
Date Reported: November 24th, 2014

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14011-1	N013831-012D / MW-31-135-200	-9.49	-74.65
14011-2	N013831-013E / MW-42-030-200	-11.52	-95.09
14011-3	N013831-024F / MW-34-055-200	-12.43	-101.86
14011-4	N013831-030E / MW-42-065-200	-12.06	-97.57
	Analytical Precision (1σ)	0.16	0.27

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-5.69	-40.03
QC-02	-5.91	-40.41
Mean	-5.80	-40.22
Analytical Precision (1σ)	0.16	0.27

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14011	**Created**	11/12/2014 14:53
Work ID	N013831	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N13831A

140110001 N013831-012D / MW-31-135-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/5/2014 15:48
Matrix	Water			**Received**	11/12/2014 10:55

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140110001-1	P250ML	COOL	OK	3.4 deg c	CSIA_D18O

140110002 N013831-013E / MW-42-030-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/5/2014 15:03
Matrix	Water			**Received**	11/12/2014 10:55

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140110002-1	P250ML	COOL	OK	3.4 deg c	CSIA_D18O

140110003 N013831-024F / MW-34-055-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/6/2014 13:46
Matrix	Water			**Received**	11/12/2014 10:55

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140110003-1	P250ML	COOL	OK	3.4 deg c	CSIA_D18O

140110004 N013831-030E / MW-42-065-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/6/2014 09:27
Matrix	Water			**Received**	11/12/2014 10:55

Billable Acodes

CSIA_D18OW CSIA D18O Water

Data Sheet

Workorder	14011	**Created**	11/12/2014 14:53
Work ID	N013831	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N13831A

140110004 N013831-030E / MW-42-065-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/6/2014 09:27
Matrix	Water			**Received**	11/12/2014 10:55

Container ID	Type	Preservative	CC	Temp	Container Utilization
140110004-1	P250ML	COOL	OK	3.4 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Labs Project: N 013831 Lab Work Order: 14011

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 7718 1569 1589

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 3.4°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conforman
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC	✓			
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : CY Date: 11.12.14

Project Manager Review : RK Date: 11/17/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

14031

QC Level: Level IV

Subcontractor:

Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

12-Nov-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N013866-001E / MW-126-200	Water	11/10/2014 7:00:00 AM	8OZP	1		
N013866-009E / MW-30-050-200	Water	11/10/2014 10:35:00 AM	8OZP	1		
N013866-022E / MW-32-035-200	Water	11/11/2014 11:40:00 AM	8OZP	1		
N013866-026D / MW-47-055-200	Water	11/11/2014 1:48:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13866A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen and Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)941-9227.

1.8°C

GSO# 526121713

		Date/Time			Date/Time
Relinquished by:	jpg 11/12/14	17:00	**Received by:**	[illegible]	11.14.14 1115
Relinquished by:			**Received by:**		

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N013866A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: November 14th, 2014
Date Reported: December 3rd, 2014

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14031-1	N013866-001E / MW-126-200	-12.51	-102.50
14031-2	N013866-009E / MW-30-050-200	-12.42	-104.02
14031-3	N013866-022E / MW-32-035-200	-10.39	-87.84
14031-4	N013866-026D / MW-47-055-200	-8.46	-70.06
	Analytical Precision (1σ)	0.16	0.29

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-5.74	-41.12
QC-02	-5.97	-40.71
Mean	-5.86	-40.92
Analytical Precision (1σ)	0.16	0.29

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14031	**Created**	11/14/2014 13:57
Work ID	N013866	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	

140310001 N013866-001E / MW-126-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/10/2014 07:00
Matrix	Water			**Received**	11/14/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140310001-1	P250ML	COOL	OK	1.8 deg c	CSIA_D18O

140310002 N013866-009E / MW-30-050-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/10/2014 10:35
Matrix	Water			**Received**	11/14/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140310002-1	P250ML	COOL	OK	1.8 deg c	CSIA_D18O

140310003 N013866-022E / MW-32-035-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/11/2014 11:40
Matrix	Water			**Received**	11/14/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140310003-1	P250ML	COOL	OK	1.8 deg c	CSIA_D18O

140310004 N013866-026D / MW-47-055-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/11/2014 13:48
Matrix	Water			**Received**	11/14/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Data Sheet

Workorder	14031	**Created**	11/14/2014 13:57
Work ID	N013866	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	

140310004 N013866-026D / MW-47-055-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/11/2014 13:48
Matrix	Water			**Received**	11/14/2014 11:15

Container ID	Type	Preservative	CC	Temp	Container Utilization
140310004-1	P250ML	COOL	OK	1.8 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset lab Project: N013866 Lab Work Order: 14031

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 771847964410

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other:)

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1.8°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conforman
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: CJ Date: 11.14.14

Project Manager Review: RR Date: 11/14/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

14069

QC Level: Level IV

Subcontractor:

Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

17-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests OXY_DEUT		
1	N013884-001E / MW-44-070-200	Water	11/11/2014 3:36:00 PM	8OZP	1		
2	N013884-003D / MW-47-115-200	Water	11/11/2014 3:25:00 PM	8OZP	1		
3	N013884-009E / MW-33-090-200	Water	11/12/2014 2:18:00 PM	8OZP	1		
4	N013884-010E / MW-33-150-200	Water	11/12/2014 3:12:00 PM	8OZP	1		
5	N013884-011E / MW-33-210-200	Water	11/12/2014 1:36:00 PM	8OZP	1		
6	N013884-013E / MW-44-115-200	Water	11/12/2014 10:06:00 AM	8OZP	1		
7	N013884-023E / MW-35-060-200	Water	11/13/2014 12:23:00 PM	8OZP	1		
8	N013884-024E / MW-36-100-200	Water	11/13/2014 9:02:00 AM	8OZP	1		

5.2°C

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13884A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2M Hill sample.

FedEx# 7718 9119 5733

		Date/Time			Date/Time
Relinquished by:	jpg 11/17/14	17:00	**Received by:**	PAES	11.18.14 1130
Relinquished by:			**Received by:**		

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N013884A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: November 18th, 2014
Date Reported: December 3rd, 2014

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14069-1	N013884-001E / MW-44-070-200	-11.94	-99.23
14069-2	N013884-003D / MW-47-115-200	-10.10	-78.08
14069-3	N013884-009E / MW-33-090-200	-9.90	-76.72
14069-4	N013884-010E / MW-33-150-200	-10.15	-77.66
14069-5	N013884-011E / MW-33-210-200	-10.74	-81.88
14069-6	N013884-013E / MW-44-115-200	-10.90	-81.64
14069-7	N013884-023E / MW-35-060-200	-10.15	-73.74
14069-8	N013884-024E / MW-36-100-200	-12.47	-93.11
	Analytical Precision (1σ)	0.16	0.29

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-5.74	-41.12
QC-02	-5.97	-40.71
Mean	-5.86	-40.92
Analytical Precision (1σ)	0.16	0.29

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14069	**Created**	11/18/2014 12:31
Work ID	N013884	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N13884A

140690001 N013884-001E / MW-44-070-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/11/2014 15:36
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690001-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

140690002 N013884-003D / MW-47-115-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/11/2014 15:25
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690002-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

140690003 N013884-009E / MW-33-090-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/12/2014 14:18
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690003-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

140690004 N013884-010E / MW-33-150-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/12/2014 15:12
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Data Sheet

Workorder	14069	**Created**	11/18/2014 12:31
Work ID	N013884	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N13884A

140690004 N013884-010E / MW-33-150-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/12/2014 15:12
Matrix	Water			**Received**	11/18/2014 11:30

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690004-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

140690005 N013884-011E / MW-33-210-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/12/2014 13:36
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW	CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690005-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

140690006 N013884-013E / MW-44-115-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/12/2014 10:06
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW	CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690006-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

140690007 N013884-023E / MW-35-060-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/13/2014 12:23
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW	CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690007-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

Data Sheet

Workorder	14069	**Created**	11/18/2014 12:31
Work ID	N013884	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N13884A

140690008 N013884-024E / MW-36-100-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/13/2014 09:02
Matrix	Water			**Received**	11/18/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140690008-1	P250ML	COOL	OK	5.2 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Project: N013884 Lab Work Order: 14069

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 771891195733

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other:)

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 5.2°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conforman
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LY Date: 11.18.14

Project Manager Review : RL Date: 11/18/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

14094

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

19-Nov-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: OXY_DEUT		
N013908-001E / MW-35-135-200	Water	11/13/2014 2:39:00 PM	8OZP	1		
N013908-002E / MW-46-175-200	Water	11/13/2014 2:22:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

4°C

Please use PO#: N13908A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7719 2486 6720

		Date/Time			Date/Time
Relinquished by:	jpg	11/19/14 @ 17:00	**Received by:**	LaDel	11.20.14 11 45
Relinquished by:			**Received by:**		

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N013908A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: November 20th, 2014
Date Reported: December 3rd, 2014

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14094-1	N013908-001E / MW-35-135-200	-10.00	-80.09
14094-2	N013908-002E / MW-46-175-200	-9.88	-79.89
	Analytical Precision (1σ)	0.16	0.29

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-5.74	-41.12
QC-02	-5.97	-40.71
Mean	-5.86	-40.92
Analytical Precision (1σ)	0.16	0.29

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14094	**Created**	11/20/2014 14:36
Work ID	N013908	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	

140940001 N013908-001E / MW-35-135-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/13/2014 14:39
Matrix	Water			**Received**	11/20/2014 11:45

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140940001-1	P250ML	COOL	OK	4 deg c	CSIA_D18O

140940002 N013908-002E / MW-46-175-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/13/2014 14:22
Matrix	Water			**Received**	11/20/2014 11:45

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
140940002-1	P250ML	COOL	OK	4 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Labs Project: NO 13908 Lab Work Order: 14094

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 771924866720

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other):_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 4°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LJ Date: 11.20.14

Project Manager Review : RL Date: 11/21/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

14146

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

24-Nov-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N013936-001A / R-28-198	Water	11/20/2014 9:08:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13936A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7719 8038 6512

	Date/Time		Date/Time
Relinquished by: jpg	11/24/14	**Received by:** Lorel	PACS 11.25.14 1130
Relinquished by:		**Received by:**	

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N013936A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: November 25th, 2014
Date Reported: December 3rd, 2014

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14146-1	N013936-001A / R-28-198	-12.26	-99.96
	Analytical Precision (1σ)	0.16	0.29

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-5.74	-41.12
QC-02	-5.97	-40.71
Mean	-5.86	-40.92
Analytical Precision (1σ)	0.16	0.29

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14146	**Created**	11/25/2014 12:54
Work ID	N03936	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	

141460001 N013936-001A

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/20/2014 09:08
Matrix	Water			**Received**	11/25/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
141460001-1	P250ML	COOL	OK	5 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Project: N013936 Lab Work Order: 14146

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 771980386512

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other:)_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 5°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags			✓	
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LY Date: 11.25.14

Project Manager Review : RK Date: 11/25/14

Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

January 6, 2015

Shawn Duffy
ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

RE: **N014023**

Microseeps Workorder: 14188

Dear Shawn Duffy:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, December 04, 2014. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Robbin Robl 01/06/2015 RW
rrobl@microseeps.com 1-6-15

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 4

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Microseeps/Pace Analytical Energy Services, LLC.

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N014023A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: December 3rd, 2014
Date Reported: January 5th, 2015

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14188-1	N014023-001E / MW-128-200	-10.01	-77.20
14188-2	N014023-004E / MW-34-100-200	-9.97	-76.95
14188-3	N014023-005E / MW-39-100-200	-10.36	-81.16
	Analytical Precision (1σ)	0.11	0.27

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-7.32	-62.32
QC-02	-7.48	-62.70
Mean	-7.40	-62.51
Analytical Precision (1σ)	0.11	0.27

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

14188

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.ati-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

03-Dec-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: OXY_DEUT		
N014023-001E / MW-128-200	Water	12/1/2014 7:00:00 AM	8OZP	1		
N014023-004E / MW-34-100-200	Water	12/1/2014 12:24:00 PM	8OZP	1		
N014023-005E / MW-39-100-200	Water	12/1/2014 10:08:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14023A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7720 8338 3422

	Date/Time		Date/Time
Relinquished by: jpg	12/03/14	**Received by:**	12.4.14 1100
Relinquished by:		**Received by:**	

Cooler Receipt Form

Client Name: Asset Labs Project: N 014023 Lab Work Order: 14188

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 7720 8338 3422

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other:)_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 3°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LJ Date: 12.4.14

Project Manager Review: RL Date: 12/4/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

14233

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

08-Dec-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N014056-001E / MW-25-200	Water	12/2/2014 2:55:00 PM	8OZP	1		
N014056-005E / MW-31-060-200	Water	12/3/2014 3:16:00 PM	8OZP	1		

1.2°C

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N14056A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen/Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)229-3303.

FedEx #: 772142788575

	Date/Time		Date/Time
Relinquished by: Amanda Cote	12/8/14 1600	**Received by:** [illegible] PAES	12.9.14 1025
Relinquished by:		**Received by:**	

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N014056A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: December 9th, 2014
Date Reported: January 29th, 2015

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14233-1	N014056-001E / MW-25-200	-9.21	-67.9
14233-2	N014056-005E / MW-31-060-200	-8.83	-68.5
	Analytical Precision (1σ)	0.11	0.4

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-11.95	-86.4
QC-02	-12.11	-87.0
Mean	-12.03	-86.7
Analytical Precision (1σ)	0.11	0.4

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14233	**Created**	12/9/2014 12:08
Work ID	N014056	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N14056A

142330001 N014056-001E / MW-25-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/2/2014 14:55
Matrix	Water			**Received**	12/9/2014 10:25

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
142330001-1	P250ML	COOL	OK	1.2 deg c	CSIA_D18O

142330002 N014056-005E / MW-31-060-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/3/2014 15:16
Matrix	Water			**Received**	12/9/2014 10:25

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
142330002-1	P250ML	COOL	OK	1.2 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Labs Project: N014056 Lab Work Order: 14233

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 7721 4278 8575

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: Ziploc

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 1.2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LY Date:_____

Project Manager Review : RW Date: 12-9-14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

14268

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

10-Dec-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N013831-026E / MW-34-080-200	Water	11/6/2014 2:44:00 PM	8OZP	1		

3.8°C

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#N13831A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by:Normal TAT.

Please analyze for Oxygen and Deuterium. CH2MHill samples. If you have questions, please contact Shawn Duffy at (530)229-3303.

FedEx#: 7721 8141 4263

		Date/Time			Date/Time
Relinquished by:	ACortes 12/10/2014	1700	**Received by:**	PAES	12.11.14 1100
Relinquished by:			**Received by:**		

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N013831A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: December 11th, 2014
Date Reported: January 29th, 2015

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14268-1	N013831-026E / MW-34-080-200	-11.60	-90.9
	Analytical Precision (1σ)	0.11	0.4

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-11.95	-86.4
QC-02	-12.11	-87.0
Mean	-12.03	-86.7
Analytical Precision (1σ)	0.11	0.4

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14268	**Created**	12/11/2014 12:28
Work ID	N013831	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	

142680001 N013831-026E / MW-34-080-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	11/6/2014 14:44
Matrix	Water			**Received**	12/11/2014 11:00

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
142680001-1	P250ML	COOL	OK	3.8 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Labs Project: N013831 Lab Work Order: 14268

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 7721 8141 4263

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 3.8°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags			✓	
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LJ Date: 12.11.14

Project Manager Review : RR Date: 12/12/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

14348

Subcontractor:
Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler:

17-Dec-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests OXY_DEUT		
1	N014176-002E / MW-122-200	Water	12/15/2014 8:00:00 AM	4OZP	1		
2	N014176-003E / MW-124-200	Water	12/15/2014 7:00:00 AM	4OZP	1		
3	N014176-006E / MW-20-070-200	Water	12/15/2014 10:52:00 AM	4OZP	1		
4	N014176-007E / MW-20-100-200	Water	12/15/2014 11:22:00 AM	4OZP	1		
5	N014176-008E / MW-20-130-200	Water	12/15/2014 1:05:00 PM	4OZP	1		
6	N014176-009E / MW-26-200	Water	12/15/2014 9:10:00 AM	4OZP	1		
7	N014176-025D / MW-39-070-200	Water	12/16/2014 9:57:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N14176A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples. **FedEx# 7722 8623 5455**

	Date/Time		Date/Time
Relinquished by: jpg	12/17/14 @ 17:00	**Received by:** LaDre PAES	12.18.14 1115
Relinquished by:		**Received by:**	

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N014176A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: December 18th, 2014
Date Reported: January 29th, 2015

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14348-1	N014176-002E / MW-122-200	-6.76	-59.6
14348-2	N014176-003E / MW-124-200	-8.31	-66.9
14348-3	N014176-006E / MW-20-070-200	-8.07	-63.1
14348-4	N014176-007E / MW-20-100-200	-7.62	-60.2
14348-5	N014176-008E / MW-20-130-200	-6.70	-59.6
14348-6	N014176-009E / MW-26-200	-8.33	-67.3
14348-7	N014176-025D / MW-39-070-200	-12.41	-99.4
	Analytical Precision (1σ)	0.11	0.4

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-11.95	-86.4
QC-02	-12.11	-87.0
Mean	-12.03	-86.7
Analytical Precision (1σ)	0.11	0.4

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14348	**Created**	12/18/2014 14:08
Work ID	N014176	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N14176A

143480001 N014176-002E / MW-122-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 08:00
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480001-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

143480002 N014176-003E / MW-124-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 07:00
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480002-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

143480003 N014176-006E / MW-20-070-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 10:52
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480003-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

143480004 N014176-007E / MW-20-100-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 11:22
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW CSIA D18O Water

Data Sheet

Workorder	14348	**Created**	12/18/2014 14:08
Work ID	N014176	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N14176A

143480004 N014176-007E / MW-20-100-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 11:22
Matrix	Water			**Received**	12/18/2014 11:15

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480004-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

143480005 N014176-008E / MW-20-130-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 13:05
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW	CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480005-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

143480006 N014176-009E / MW-26-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/15/2014 09:10
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW	CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480006-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

143480007 N014176-025D / MW-39-070-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/16/2014 09:57
Matrix	Water			**Received**	12/18/2014 11:15

Billable Acodes

CSIA_D18OW	CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
143480007-1	P250ML	COOL	OK	2.8 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Labs Project: N014176 Lab Work Order: 14348

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 7722 8623 5455

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other:)_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 2.8°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LY Date: 12.18.14

Project Manager Review : PR Date: 12/18/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

14440

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler:

29-Dec-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N014251-001E / MW-49-135-200	Water	12/22/2014 12:46:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14251A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7724 1056 3075

	Date/Time		Date/Time
Relinquished by: jpg	12/29/14	**Received by:** Laure	PAES 12.30.14 1130
Relinquished by:		**Received by:**	

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N014251A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: December 30th, 2014
Date Reported: January 29th, 2015

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14440-1	N014251-001E / MW-49-135-200	-10.43	-81.3
	Analytical Precision (1σ)	0.11	0.4

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-11.95	-86.4
QC-02	-12.11	-87.0
Mean	-12.03	-86.7
Analytical Precision (1σ)	0.11	0.4

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen
3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N
Gas Sample
Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas
Water and Dissolved Inorganics
^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S
^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate
Soil and Minerals
^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics
Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14440	**Created**	12/30/2014 12:56
Work ID	N14251	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N14251A

144400001 N014251-001E / MW-49-135-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/22/2014 12:46
Matrix	Water			**Received**	12/30/2014 11:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
144400001-1	P250ML	COOL	OK	5 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Project: N 14251 Lab Work Order: 14440

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 7724 1056 3075

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other)_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 5°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags			✓	
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : CY Date: 12.30.14

Project Manager Review : RR Date: 12/30/14

14468

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

05-Jan-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N014193-004E / MW-49-275-200	Water	12/17/2014 1:20:00 PM	8OZP	1		
N014193-013D / MW-22-200	Water	12/18/2014 2:48:00 PM	8OZP	1		

3°C

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14193A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7724 6655 0343

		Date/Time			Date/Time
Relinquished by:	jpg 01/05/15	15:00	**Received by:**	Nadr PAES	1.6.15 1230
Relinquished by:			**Received by:**		

Asset Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118
Tel: 702.307.2659
Report to: Marlon Cartin
Project: CH2M HILL Samples
PO No.: N014193A
Email: marlon @ assetlaboratories.com; shawn.duffy@ch2m.com
reports.lv@assetlaboratories.com

PACE Analytical
220 William Pitt Way
Pittsburgh, PA 15238
Tel: 412.826.5245
Report by: Dr. Yi Wang
Director, CSIA Center of Excellence
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ENVIRONMENTAL FORENSICS ISOTOPE ANALYSES

Date Received: December 30th, 2014
Date Reported: January 29th, 2015

Water samples from Asset Lab (Marlon Cartin) for $\delta^{18}O$ and δD (‰ VSMOW) stable isotope analysis

CSIA Lab ID	Sample ID	$\delta^{18}O$	δD
14468-1	N014193-004E / MW-49-275-200	-10.63	-82.8
14468-2	N014193-013D / MW-22-200	-10.19	-84.1
	Analytical Precision (1σ)	0.11	0.4

Pace CSIA Lab ID	$\delta^{18}O$	δD
QC-01	-11.95	-86.4
QC-02	-12.11	-87.0
Mean	-12.03	-86.7
Analytical Precision (1σ)	0.11	0.4

Pace CSIA Forensic Isotope Services

Product or Dissolved Organics: Chlorinated Solvents, Oil, Extract, Fraction and Kerogen

3D-CSIA of ^{13}C, ^{37}Cl, and ^{2}H for PCE, TCE, DCE, MTBE, BTEX, PAHs, Pesticides, Alkanes, Gasoline and Oil; Bulk ^{13}C, ^{2}H, ^{18}O, ^{34}S, and ^{15}N

Gas Sample

Gas Composition and 2D-CSIA of ^{13}C and ^{2}H of C1 to C5; ^{13}C of CO_2; ^{14}C of C1 and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas

Water and Dissolved Inorganics

^{2}H, ^{3}H and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S

^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate

Soil and Minerals

^{13}C, ^{18}O, ^{15}N, ^{34}S, D/H; ^{14}C of carbonate or organics

Post-Analysis Forensic Isotope Data Interpretation

Data Sheet

Workorder	14468	**Created**	1/6/2015 13:53
Work ID	N14193	**Status**	WP
Client	ASSET Laboratories	**Report**	REVIEW_RPT
Profile	CSIA [1829]	**PO**	N14193A

144680001 N014193-004E / MW-49-275-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/17/2014 13:20
Matrix	Water			**Received**	1/6/2015 12:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
144680001-1	P250ML	COOL	OK	3 deg c	CSIA_D18O

144680002 N014193-013D / MW-22-200

Sample Type	Normal Environmental Sample	**Status**	WP	**Collected**	12/17/2014 14:48
Matrix	Water			**Received**	1/6/2015 12:30

Billable Acodes

CSIA_D18OW CSIA D18O Water

Container ID	Type	Preservative	CC	Temp	Container Utilization
144680002-1	P250ML	COOL	OK	3 deg c	CSIA_D18O

Cooler Receipt Form

Client Name: Asset Project: N014193 Lab Work Order: 14468

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 7724 6655 0343

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other:)_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 3°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformanc
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used		✓		
Are containers properly preserved for the requested testing? (as labeled)			✓	
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LY Date: 1.6.15

Project Manager Review : RR Date: 1/6/15

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 12-12-2014
EMAX Batch No.: 14K153

Attn: Morlan Cartin

Asset Labs
3151 W. Post Road
Las Vegas NV 89118

Subject: Laboratory Report
Project: PG&E Topock

Enclosed is the Laboratory report for samples received on 11/20/14.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-141-200	K153-01	11/18/14	WATER	ALKALINITY
				ANIONS BY IC
				CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				DISSOLVED METALS BY ICP-MS
				SPECIFIC CONDUCTANCE
MW-241-200	K153-02	11/18/14	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-085-200	K153-03	11/18/14	WATER	ALKALINITY
				ANIONS BY IC
				CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				DISSOLVED METALS BY ICP-MS
				SPECIFIC CONDUCTANCE
MW-54-085-200-EB	K153-04	11/18/14	WATER	HOLD
MW-54-140-200	K153-05	11/18/14	WATER	ALKALINITY
				ANIONS BY IC
				CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				DISSOLVED METALS BY ICP-MS

Sample ID	Control #	Col Date	Matrix	Analysis
				SPECIFIC CONDUCTANCE
MW-54-140-200-EB	K153-06	11/18/14	WATER	HOLD
MW-54-195-200	K153-07	11/18/14	WATER	ALKALINITY
				ANIONS BY IC
				CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				DISSOLVED METALS BY ICP-MS
				SPECIFIC CONDUCTANCE
MW-54-195-200-EB	K153-08	11/18/14	WATER	HOLD
MW-55-045-200	K153-09	11/18/14	WATER	ALKALINITY
				ANIONS BY IC
				CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				DISSOLVED METALS BY ICP-MS
				SPECIFIC CONDUCTANCE
MW-55-045-200-EB	K153-10	11/18/14	WATER	HOLD
MW-55-120-200	K153-11	11/18/14	WATER	ALKALINITY
				ANIONS BY IC
				CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				DISSOLVED METALS BY ICP-MS
				SPECIFIC CONDUCTANCE

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

14K153

CH2MHILL

CHAIN OF CUSTODY RECORD

11/18/2014 3:31:28 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-AZ
Turnaround Time 10 Days
Shipping Date: 11/18/2014
COC Number: 3

				Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C			
				Filtered:	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA			
				Holding Time:	28	28	180	180	180	180	180	7	7	7	7			
		DATE	**TIME**	**Matrix**	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (SW6010B/SW6020Adis) Field Filtered Ca,Mg,Na,Fe,B	Metals (SW6010B/SW6020Adis) Field Filtered Mo,Se,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Chromium	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)		Number of Containers	COMMENTS
1	MW-141-200	11/18/2014	7:00	Water		X	X	X	X	X	X	X	X	X	X		5	
2	MW-241-200	11/18/2014	15:13	Water	X												1	
3	MW-54-085-200	11/18/2014	8:22	Water		X	X	X	X	X	X	X	X	X	X		5	
4	MW-54-085-200-EB	11/18/2014	7:42	Water	X						X						2	
5	MW-54-140-200	11/18/2014	9:22	Water		X	X	X	X	X	X	X	X	X	X		5	
6	MW-54-140-200-EB	11/18/2014	8:12	Water	X						X						2	
7	MW-54-195-200	11/18/2014	9:52	Water		X	X	X	X	X	X	X	X	X	X		5	
8	MW-54-195-200-EB	11/18/2014	7:30	Water	X						X						2	
9	MW-55-045-200	11/18/2014	12:27	Water		X		X	X	X	X	X	X	X	X		5	
10	MW-55-045-200-EB	11/18/2014	11:52	Water	X						X						2	
11	MW-55-120-200	11/18/2014	13:22	Water		X		X	X	X	X	X	X	X	X		5	
																TOTAL NUMBER OF CONTAINERS	39	

	Signatures	Date/Time
Approved by		11-18-14
Sampled by		1600
Relinquished by		
Received by		11/18/14 1603
Relinquished by		11/18/14 1808
Received by		11/18/14 1808

11/20/14 0935 / EMPO Labs.

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.8/1.6°C
Airbill No: 1PH2
Lab Name:
Lab Phone:

ATTN:

Sample Custody

Special Instructions:

Nov 3 to Dec 18, 2014

Report Copy to

Shawn Duffy
(530) 229-3303

Temp 4.6°C

14K153

ASSET Laboratories
3151-3153 W Post Rd., Las egas, NV 89118
www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
						EPA 120.1	EPA 218.6
1	N013907-001A / MW-141-200	Water	11/18/2014 7:00:00 AM	8OZP			1
	N013907-001B / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP			
	N013907-001C / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP			
	N013907-001D / MW-141-200	Water	11/18/2014 7:00:00 AM	32OZP		1	
2	N013907-002A / MW-241-200	Water	11/18/2014 3:13:00 PM	8OZP			1
3	N013907-003A / MW-54-085-200	Water	11/18/2014 8:22:00 AM	8OZP			1
	N013907-003B / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP			
	N013907-003C / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP			
	N013907-003D / MW-54-085-200	Water	11/18/2014 8:22:00 AM	32OZP		1	
4	N013907-004A / MW-54-085-200-EB **HOLD**	Water	11/18/2014 7:42:00 AM	8OZP			1
	N013907-004B / MW-54-085-200-EB **HOLD**	Water	11/18/2014 7:42:00 AM	16OZP			
5	N013907-005A / MW-54-140-200	Water	11/18/2014 9:22:00 AM	8OZP			1
	N013907-005B / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP			
	N013907-005C / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP			
	N013907-005D / MW-54-140-200	Water	11/18/2014 9:22:00 AM	32OZP		1	
6	N013907-006A / MW-54-140-200-EB **HOLD**	Water	11/18/2014 8:12:00 AM	8OZP			1
	N013907-006B / MW-54-140-200-EB **HOLD**	Water	11/18/2014 8:12:00 AM	16OZP			
7	N013907-007A / MW-54-195-200	Water	11/18/2014 9:52:00 AM	8OZP			1

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13907A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please see attached COC. Please bill and send report to ASSET laboratories. **GSO# 526189386**

		Date/Time			Date/Time
Relinquished by:	jpg	**11/19/14 @ 17:00**	**Received by:**	Cecilia Ola	11/20/14 09:35
Relinquished by:			**Received by:**		

Temp 4.6

1003

14K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
						EPA 120.1	EPA 218.6
7	N013907-007B / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP			
	N013907-007C / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP			
	N013907-007D / MW-54-195-200	Water	11/18/2014 9:52:00 AM	32OZP		1	
8	N013907-008A / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	8OZP			1
	N013907-008B / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	16OZP			
9	N013907-009A / MW-55-045-200	Water	11/18/2014 12:27:00 PM	8OZP			1
	N013907-009B / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP			
	N013907-009C / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP			
	N013907-009D / MW-55-045-200	Water	11/18/2014 12:27:00 PM	32OZP		1	
10	N013907-010A / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	8OZP			1
	N013907-010B / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	16OZP			
11	N013907-011A / MW-55-120-200	Water	11/18/2014 1:22:00 PM	8OZP			1
	N013907-011B / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP			
	N013907-011C / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP			
	N013907-011D / MW-55-120-200	Water	11/18/2014 1:22:00 PM	32OZP		1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13907A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please see attached COC. Please bill and send report to ASSET laboratories. **GSO# 526189386**

		Date/Time			Date/Time
Relinquished by:	jpg	**11/19/14 @ 17:00**	**Received by:**	Cindy Clay	11/20/14 09:35
Relinquished by:			**Received by:**		

14 K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 300.0	EPA 3010A	EPA 6010B
1	N013907-001A / MW-141-200	Water	11/18/2014 7:00:00 AM	8OZP			
	N013907-001B / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP		2	1
	N013907-001C / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP		1	
	N013907-001D / MW-141-200	Water	11/18/2014 7:00:00 AM	32OZP	3		
2	N013907-002A / MW-241-200	Water	11/18/2014 3:13:00 PM	8OZP			
3	N013907-003A / MW-54-085-200	Water	11/18/2014 8:22:00 AM	8OZP			
	N013907-003B / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP		2	1
	N013907-003C / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP		1	
	N013907-003D / MW-54-085-200	Water	11/18/2014 8:22:00 AM	32OZP	3		
4	N013907-004A / MW-54-085-200-EB **HOLD**	Water	11/18/2014 7:42:00 AM	8OZP			
	N013907-004B / MW-54-085-200-EB **HOLD**	Water	11/18/2014 7:42:00 AM	16OZP		1	
5	N013907-005A / MW-54-140-200	Water	11/18/2014 9:22:00 AM	8OZP			
	N013907-005B / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP		2	1
	N013907-005C / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP		1	
	N013907-005D / MW-54-140-200	Water	11/18/2014 9:22:00 AM	32OZP	3		
6	N013907-006A / MW-54-140-200-EB **HOLD**	Water	11/18/2014 8:12:00 AM	8OZP			
	N013907-006B / MW-54-140-200-EB **HOLD**	Water	11/18/2014 8:12:00 AM	16OZP		1	
7	N013907-007A / MW-54-195-200	Water	11/18/2014 9:52:00 AM	8OZP			

General Comments: Please email sample receipt acknowledgement to the PM.

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Please see attached COC. Please bill and send report to ASSET laboratories. **GSO# 526189386**

		Date/Time			Date/Time
Relinquished by:	jpg	**11/19/14 @ 17:00**	**Received by:**	Cecilia Ola	11/20/14 09:35
Relinquished by:			**Received by:**		

1955

14K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 300.0	EPA 3010A	EPA 6010B
7	N013907-007B / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP		2	1
	N013907-007C / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP		1	
	N013907-007D / MW-54-195-200	Water	11/18/2014 9:52:00 AM	32OZP	3		
8	N013907-008A / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	8OZP			
	N013907-008B / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	16OZP		1	
9	N013907-009A / MW-55-045-200	Water	11/18/2014 12:27:00 PM	8OZP			
	N013907-009B / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP		2	1
	N013907-009C / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP		1	
	N013907-009D / MW-55-045-200	Water	11/18/2014 12:27:00 PM	32OZP	3		
10	N013907-010A / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	8OZP			
	N013907-010B / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	16OZP		1	
11	N013907-011A / MW-55-120-200	Water	11/18/2014 1:22:00 PM	8OZP			
	N013907-011B / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP		2	1
	N013907-011C / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP		1	
	N013907-011D / MW-55-120-200	Water	11/18/2014 1:22:00 PM	32OZP	3		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13907A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please see attached COC. Please bill and send report to ASSET laboratories. **GSO# 526189386**

		Date/Time			Date/Time
Relinquished by:	jog	11/19/14 @ 17:00	**Received by:**	[illegible]	11/20/14 09:35
Relinquished by:			**Received by:**		

14K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 6020	Folder	SM 1030F1
1	N013907-001A / MW-141-200	Water	11/18/2014 7:00:00 AM	8OZP			
	N013907-001B / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP	2		
	N013907-001C / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP	1		
	N013907-001D / MW-141-200	Water	11/18/2014 7:00:00 AM	32OZP			1
2	N013907-002A / MW-241-200	Water	11/18/2014 3:13:00 PM	8OZP			
3	N013907-003A / MW-54-085-200	Water	11/18/2014 8:22:00 AM	8OZP			
	N013907-003B / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP	2		
	N013907-003C / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP	1		
	N013907-003D / MW-54-085-200	Water	11/18/2014 8:22:00 AM	32OZP			1
4	N013907-004A / MW-54-085-200-EB **HOLD**	Water	11/18/2014 7:42:00 AM	8OZP			
	N013907-004B / MW-54-085-200-EB **HOLD**	Water	11/18/2014 7:42:00 AM	16OZP	1		
5	N013907-005A / MW-54-140-200	Water	11/18/2014 9:22:00 AM	8OZP			
	N013907-005B / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP	2		
	N013907-005C / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP	1		
	N013907-005D / MW-54-140-200	Water	11/18/2014 9:22:00 AM	32OZP			1
6	N013907-006A / MW-54-140-200-EB **HOLD**	Water	11/18/2014 8:12:00 AM	8OZP			
	N013907-006B / MW-54-140-200-EB **HOLD**	Water	11/18/2014 8:12:00 AM	16OZP	1		
7	N013907-007A / MW-54-195-200	Water	11/18/2014 9:52:00 AM	8OZP			

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13907A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please see attached COC. Please bill and send report to ASSET laboratories. **GSO# 526189386**

		Date/Time			Date/Time
Relinquished by:	jpg	**11/19/14 @ 17:00**	**Received by:**	[illegible]	11/20/14 09:35
Relinquished by:			**Received by:**		

1 of 1

14K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 6020	Folder	SM 1030F1
7	N013907-007B / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP	2		
	N013907-007C / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP	1		
	N013907-007D / MW-54-195-200	Water	11/18/2014 9:52:00 AM	32OZP			1
8	N013907-008A / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	8OZP			
	N013907-008B / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	16OZP	1		
9	N013907-009A / MW-55-045-200	Water	11/18/2014 12:27:00 PM	8OZP			
	N013907-009B / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP	2		
	N013907-009C / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP	1		
	N013907-009D / MW-55-045-200	Water	11/18/2014 12:27:00 PM	32OZP			1
10	N013907-010A / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	8OZP			
	N013907-010B / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	16OZP	1		
11	N013907-011A / MW-55-120-200	Water	11/18/2014 1:22:00 PM	8OZP			
	N013907-011B / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP	2		
	N013907-011C / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP	1		
	N013907-011D / MW-55-120-200	Water	11/18/2014 1:22:00 PM	32OZP			1

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13907A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please see attached COC. Please bill and send report to ASSET laboratories. **GSO# 526189386**

		Date/Time			Date/Time
Relinquished by:	jpg	11/19/14 @ 17:00	**Received by:**	[illegible]	11/20/14 09:35
Relinquished by:			**Received by:**		

1000

14 K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
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CHAIN-OF-CUSTODY RECORD

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Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM 2320 B	SM2540C	
1	N013907-001A / MW-141-200	Water	11/18/2014 7:00:00 AM	8OZP			
	N013907-001B / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP			
	N013907-001C / MW-141-200	Water	11/18/2014 7:00:00 AM	16OZP			
	N013907-001D / MW-141-200	Water	11/18/2014 7:00:00 AM	32OZP	1	1	
2	N013907-002A / MW-241-200	Water	11/18/2014 3:13:00 PM	8OZP			
3	N013907-003A / MW-54-085-200	Water	11/18/2014 8:22:00 AM	8OZP			
	N013907-003B / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP			
	N013907-003C / MW-54-085-200	Water	11/18/2014 8:22:00 AM	16OZP			
	N013907-003D / MW-54-085-200	Water	11/18/2014 8:22:00 AM	32OZP	1	1	
4	N013907-004A / MW-54-085-200-EB HOLD	Water	11/18/2014 7:42:00 AM	8OZP			
	N013907-004B / MW-54-085-200-EB HOLD	Water	11/18/2014 7:42:00 AM	16OZP			
5	N013907-005A / MW-54-140-200	Water	11/18/2014 9:22:00 AM	8OZP			
	N013907-005B / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP			
	N013907-005C / MW-54-140-200	Water	11/18/2014 9:22:00 AM	16OZP			
	N013907-005D / MW-54-140-200	Water	11/18/2014 9:22:00 AM	32OZP	1	1	
6	N013907-006A / MW-54-140-200-EB HOLD	Water	11/18/2014 8:12:00 AM	8OZP			
	N013907-006B / MW-54-140-200-EB HOLD	Water	11/18/2014 8:12:00 AM	16OZP			
7	N013907-007A / MW-54-195-200	Water	11/18/2014 9:52:00 AM	8OZP			

General Comments: Please email sample receipt acknowledgement to the PM.

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		Date/Time			Date/Time
Relinquished by:	jpg	11/19/14 @ 17:00	**Received by:**	[illegible]	11/20/14 09:35
Relinquished by:			**Received by:**		

1 of 3

14K153

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
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CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

19-Nov-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM 2320 B	SM2540C	
7	N013907-007B / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP			
	N013907-007C / MW-54-195-200	Water	11/18/2014 9:52:00 AM	16OZP			
	N013907-007D / MW-54-195-200	Water	11/18/2014 9:52:00 AM	32OZP	1	1	
8	N013907-008A / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	8OZP			
	N013907-008B / MW-54-195-200-EB HOLD	Water	11/18/2014 7:30:00 AM	16OZP			
9	N013907-009A / MW-55-045-200	Water	11/18/2014 12:27:00 PM	8OZP			
	N013907-009B / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP			
	N013907-009C / MW-55-045-200	Water	11/18/2014 12:27:00 PM	16OZP			
	N013907-009D / MW-55-045-200	Water	11/18/2014 12:27:00 PM	32OZP	1	1	
10	N013907-010A / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	8OZP			
	N013907-010B / MW-55-045-200-EB HOLD	Water	11/18/2014 11:52:00 AM	16OZP			
11	N013907-011A / MW-55-120-200	Water	11/18/2014 1:22:00 PM	8OZP			
	N013907-011B / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP			
	N013907-011C / MW-55-120-200	Water	11/18/2014 1:22:00 PM	16OZP			
	N013907-011D / MW-55-120-200	Water	11/18/2014 1:22:00 PM	32OZP	1	1	

General Comments: Please email sample receipt acknowledgement to the PM.

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Please see attached COC. Please bill and send report to ASSET laboratories.

GSO# 526189386

		Date/Time			Date/Time
Relinquished by:	jpg	11/19/14 @ 17:00	**Received by:**	[illegible]	11/20/14 09:35
Relinquished by:			**Received by:**		

4 of 4

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 14K153
☐ Fedex ☐ UPS ☑ GSO ☐ Others	526189386	Recipient Chavez
☐ EMAX Courier ☐ Client Delivery		Date 11/20/14 Time 09:35

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ plastic bags
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 4.6 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N* 130538505	*B - S/N* 140257070	*C - S/N* ____	*D - S/N* ____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.** FM 10/27/14

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1,3,4,5	3,4,10,13,17	D12	RECD 125 mL HDPE Pres/HNO3	
6,7,8,9,10	20,24,27,31,34		for metals.	OK, proceed w/ analysis
11	37,38			
1,3,4,5,6,7,8	4,10,13,17,20,24	D2	Bottle identified method 6020*	
9,10,11	27,31,34,38		only; no specific elements	
1,3,5,7,9,11	3,9,16,23	D2	Bottle identified method 6010B/	Follow CH2M COC for
	30,37		6020 Dis Arsenic only. vs	metal's list
			info on COC*	

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: RECD copy of Client COC & original COC of the Sub-Contracted client lab

*CH2M Hill COC

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ____	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ____	D16	Preservation not indicated in ____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	____
D10	No initial/date on corrections in COC/label	D22	____	R10	____
D11	Container count mismatch COC vs received	D23	____	R11	____
✓D12	Container size mismatch COC vs received	D24	____	R12	____

REVIEWS:

Sample Labeling: [signature] Date 11/20/14 11/20/14

SRF [signature] Date 11/21/14

PM [signature] Date 11/20/14

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14K153

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of six (6) water samples were received on 11/20/14 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source (ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IML002WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed.
IML002WL/IML002WC - all analytes were within LCS QC limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG. However, analytical spike and serial dilution were analyzed to evaluate matrix interference. Results were within expected values.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ASSET LABS
Project : PG&E TOPOCK

SDG NO. : 14K153
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IML002WB	1	NA	12/05/1418:21	12/01/1415:27	F6L04031	F6L04027	IML002W	Method Blank
LCS1W	IML002WL	1	NA	12/05/1418:26	12/01/1415:27	F6L04032	F6L04027	IML002W	Lab Control Sample (LCS)
LCD1W	IML002WC	1	NA	12/05/1418:30	12/01/1415:27	F6L04033	F6L04027	IML002W	LCS Duplicate
MW-54-085-200	K153-03	1	NA	12/05/1419:55	12/01/1415:27	F6L04053	F6L04048	IML002W	Field Sample
MW-54-140-200	K153-05	1	NA	12/05/1420:00	12/01/1415:27	F6L04054	F6L04048	IML002W	Field Sample
MW-54-195-200	K153-07	1	NA	12/05/1420:04	12/01/1415:27	F6L04055	F6L04048	IML002W	Field Sample
MW-141-200AS	K153-01A	1	NA	12/08/1418:02	12/01/1415:27	F6L05048	F6L05046	IML002W	Analytical Spike Sample
MW-141-200	K153-01N	1	NA	12/08/1418:06	12/01/1415:27	F6L05049	F6L05046	IML002W	Field Sample
MW-141-200DL	K153-01J	5	NA	12/08/1418:10	12/01/1415:27	F6L05050	F6L05046	IML002W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
DISSOLVED ARSENIC BY ICP-MS

Client : ASSET LABS
Project : PG&E TOPOCK

SDG NO. : 14K153
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
M8LK1W	IML002WB	1	NA	12/05/1418:21	12/01/1415:27	F6L04031	F6L04027	IML002W	Method Blank
LCS1W	IML002WL	1	NA	12/05/1418:26	12/01/1415:27	F6L04032	F6L04027	IML002W	Lab Control Sample (LCS)
LCD1W	IML002WC	1	NA	12/05/1418:30	12/01/1415:27	F6L04033	F6L04027	IML002W	LCS Duplicate
MW-55-045-200	K153-09	1	NA	12/05/1420:08	12/01/1415:27	F6L04056	F6L04048	IML002W	Field Sample
MW-55-120-200	K153-11	1	NA	12/05/1420:12	12/01/1415:27	F6L04057	F6L04048	IML002W	Field Sample
MW-141-200AS	K153-01A	1	NA	12/08/1418:02	12/01/1415:27	F6L05048	F6L05046	IML002W	Analytical Spike Sample
MW-141-200	K153-01N	1	NA	12/08/1418:06	12/01/1415:27	F6L05049	F6L05046	IML002W	Field Sample
MW-141-200DL	K153-01J	5	NA	12/08/1418:10	12/01/1415:27	F6L05050	F6L05046	IML002W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ASSET LABS		Date Collected: 11/18/14	
Project : PG&E TOPOCK		Date Received: 11/20/14	
SDG NO. : 14K153		Date Extracted: 12/01/14 15:27	
Sample ID: MW-141-200		Date Analyzed: 12/08/14 18:06 # 12/08/14 16:36 ## 12/08/14 17:27	
Lab Samp ID: K153-01N #K153-01I	##K153-01K	Dilution Factor: 1 # 5 ## 10	
Lab File ID: F6L05049 #F6L05028	##F6L05040	Matrix : WATER	
Ext Btch ID: IML002W		% Moisture : NA	
Calib. Ref.: F6L05046 #F6L05025	##F6L05037	Instrument ID : T-IF6	

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.6	0.200	0.100
## Boron	1140	500	50.0
Calcium	170000	100	25.0
Iron	296	20.0	10.0
Magnesium	84500	100	10.0
# Manganese	841	50.0	1.00
# Molybdenum	ND	50.0	2.50
Selenium	ND	10.0	0.300
## Sodium	2010000	5000	500

Members of the First Associated File
Members of the Second Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ASSET LABS		Date Collected: 11/18/14	
Project : PG&E TOPOCK		Date Received: 11/20/14	
SDG NO. : 14K153		Date Extracted: 12/01/14 15:27	
Sample ID: MW-54-085-200		Date Analyzed: 12/05/14 19:55 # 12/08/14 16:44 ## 12/08/14 17:36	
Lab Samp ID: K153-03	#K153-03I	##K153-03K	Dilution Factor: 1 # 5 ## 10
Lab File ID: F6L04053	#F6L05030	##F6L05042	Matrix : WATER
Ext Btch ID: IML002W			% Moisture : NA
Calib. Ref.: F6L04048	#F6L05025	##F6L05037	Instrument ID : T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.5	0.200	0.100
## Boron	1160	500	50.0
Calcium	168000	100	25.0
Iron	269	20.0	10.0
# Magnesium	97400	500	50.0
Manganese	721	10.0	0.200
# Molybdenum	ND	50.0	2.50
Selenium	ND	10.0	0.300
## Sodium	2000000	5000	500

Members of the First Associated File
Members of the Second Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ASSET LABS		Date Collected: 11/18/14	
Project : PG&E TOPOCK		Date Received: 11/20/14	
SDG NO. : 14K153		Date Extracted: 12/01/14 15:27	
Sample ID: MW-54-140-200		Date Analyzed: 12/05/14 20:00 # 12/08/14 16:49 ## 12/12/14 13:48	
Lab Samp ID: K153-05	#K153-05I ##K153-05K	Dilution Factor: 1 # 5 ## 20	
Lab File ID: F6L04054	#F6L05031 ##F6L09018	Matrix : WATER	
Ext Btch ID: IML002W		% Moisture : NA	
Calib. Ref.: F6L04048	#F6L05025 ##F6L09016	Instrument ID : T-IF6	

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Arsenic	3.1	1.00	0.500
## Boron	1660	1000	100
Calcium	132000	100	25.0
Iron	ND	20.0	10.0
Magnesium	12600	100	10.0
Manganese	98.6	10.0	0.200
# Molybdenum	55.3	50.0	2.50
# Selenium	ND	50.0	1.50
## Sodium	2710000	10000	1000

Members of the First Associated File
Members of the Second Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-54-195-200	Date Analyzed:	12/05/14 20:04 # 12/08/14 16:53 ## 12/08/14 17:40
Lab Samp ID:	K153-07 #K153-07I ##K153-07K	Dilution Factor:	1 # 5 ## 20
Lab File ID:	F6L04055 #F6L05032 ##F6L05043	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04048 #F6L05025 ##F6L05037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Arsenic	ND	1.00	0.500
## Boron	2550	1000	100
Calcium	119000	100	25.0
Iron	85.1	20.0	10.0
Magnesium	4580	100	10.0
Manganese	182	10.0	0.200
# Molybdenum	117	50.0	2.50
# Selenium	ND	50.0	1.50
## Sodium	4500000	10000	1000

Members of the First Associated File
Members of the Second Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-55-045-200	Date Analyzed:	12/05/14 20:08 # 12/22/14 14:23
Lab Samp ID:	K153-09 #K153-09I	Dilution Factor:	1 # 10
Lab File ID:	F6L04056 #F6L16017	Matrix	: WATER
Ext Btch ID:	IML002W	% Moisture	: NA
Calib. Ref.:	F6L04048 #F6L16015	Instrument ID	: T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Boron	561	500	50.0
Calcium	38400	100	25.0
Iron	86.2	20.0	10.0
Magnesium	9980	100	10.0
Manganese	1030	10.0	0.200
Molybdenum	36.2	10.0	0.500
Selenium	ND	10.0	0.300
# Sodium	259000	5000	500

Members of the Associated File

Revised Report

7100X

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-55-120-200	Date Analyzed:	12/05/14 20:12 # 12/22/14 14:27
Lab Samp ID:	K153-11 #K153-11I	Dilution Factor:	1 # 10
Lab File ID:	F6L04057 #F6L16018	Matrix	: WATER
Ext Btch ID:	IML002W	% Moisture	: NA
Calib. Ref.:	F6L04048 #F6L16015	Instrument ID	: T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Boron	1590	500	50.0
Calcium	86200	100	25.0
Iron	ND	20.0	10.0
Magnesium	1920	100	10.0
Manganese	ND	10.0	0.200
Molybdenum	44.1	10.0	0.500
Selenium	ND	10.0	0.300
# Sodium	1800000	5000	500

Members of the Associated File

Revised Report

7009

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E TOPOCK	Date Received:	12/01/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MBLK1W	Date Analyzed:	12/05/14 18:21
Lab Samp ID:	IML002WB	Dilution Factor:	1
Lab File ID:	F6L04031	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	0.200	0.100
Boron	ND	50.0	5.00
Calcium	ND	100	25.0
Iron	ND	20.0	10.0
Magnesium	ND	100	10.0
Manganese	ND	10.0	0.200
Molybdenum	ND	10.0	0.500
Selenium	ND	10.0	0.300
Sodium	ND	500	50.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 14K153
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IML002WB	IML002WL	IML002WC		
LAB FILE ID:	F6L04031	F6L04032	F6L04033		
DATIME EXTRCTD:	12/01/1415:27	12/01/1415:27	12/01/1415:27	DATE COLLECTED:	NA
DATIME ANALYZD:	12/05/1418:21	12/05/1418:26	12/05/1418:30	DATE RECEIVED:	12/01/14
PREP. BATCH:	IML002W	IML002W	IML002W		
CALIB. REF:	F6L04027	F6L04027	F6L04027		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Arsenic	ND	30.0	28.4	95	30.0	28.5	95	0	85-115	20
Boron	ND	30.0	29.2J	97	30.0	29.1J	97	0	85-115	20
Calcium	ND	3000	2880	96	3000	2940	98	2	85-115	20
Iron	ND	3000	2900	97	3000	2920	97	1	85-115	20
Magnesium	ND	3000	2890	96	3000	2910	97	1	85-115	20
Manganese	ND	30.0	28.9	96	30.0	28.6	95	1	85-115	20
Molybdenum	ND	30.0	28.6	95	30.0	28.3	94	1	85-115	20
Selenium	ND	30.0	29.7	99	30.0	29.3	98	1	85-115	20
Sodium	ND	3000	3020	101	3000	3090	103	2	85-115	20

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14K153
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-141-200	MW-141-200DL		
EMAX SAMP ID:	K153-01N	K153-01J		
LAB FILE ID:	F6L05049	F6L05050		
DATE EXTRACTED:	12/01/1415:27	12/01/1415:27	DATE COLLECTED:	11/18/14
DATE ANALYZED:	12/08/1418:06	12/08/1418:10	DATE RECEIVED:	11/20/14
PREP. BATCH:	IML002W	IML002W		
CALIB. REF:	F6L05046	F6L05046		

ACCESSION:

	PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
	Arsenic	3.6	3.7	3	10
##	Boron	1140	1230	40*	10
	Calcium	170000	173000	2	10
	Iron	296	345	16*	10
	Magnesium	84500	91700	8	10
#	Manganese	841	900	7	10
#	Molybdenum	ND	ND	0	10
	Selenium	ND	ND	0	10
##	Sodium	2010000	2030000	1	10

K153-01J : Analyzed @ DF 25 on 12/08/14 16:40 | File ID F6L05029
K153-01J : Analyzed @ DF 50 on 12/08/14 15:32 | File ID F6L05041

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 14K153
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-141-200			
CONTROL NO.:	K153-01N	K153-01A		
LAB FILE ID:	F6L05049	F6L05048		
DATIME EXTRCTD:	12/01/1415:27	12/01/1415:27	DATE COLLECTED:	11/18/14
DATIME ANALYZD:	12/08/1418:06	12/08/1418:02	DATE RECEIVED:	11/20/14
PREP. BATCH:	IML002W	IML002W		
CALIB. REF:	F6L05046	F6L05046		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Arsenic	3.6	30.0	35.4	106	75-125
## Boron	1140	300	1400	87	75-125
Calcium	170000	3000	171000	33*	75-125
Iron	296	3000	3140	95	75-125
Magnesium	84500	3000	86600	70*	75-125
# Manganese	841	150	969	85	75-125
# Molybdenum	ND	150	160	107	75-125
Selenium	ND	30.0	31.6	105	75-125
## Sodium	2010000	30000	2020000	33*	75-125

K153-01A : Analyzed @ DF 5 on 12/08/14 16:32 | File ID F6L05027
K153-01A : Analyzed @ DF 10 on 12/08/14 17:23 | File ID F6L05039

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : ASSET LABS
Project : PG&E TOPOCK

SDG NO. : 14K153
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IML002WB	1	NA	12/05/1418:21	12/01/1415:27	F6L04031	F6L04027	IML002W	Method Blank
LCS1W	IML002WL	1	NA	12/05/1418:26	12/01/1415:27	F6L04032	F6L04027	IML002W	Lab Control Sample (LCS)
LCD1W	IML002WC	1	NA	12/05/1418:30	12/01/1415:27	F6L04033	F6L04027	IML002W	LCS Duplicate
MW-54-085-200	K153-03	1	NA	12/05/1419:55	12/01/1415:27	F6L04053	F6L04048	IML002W	Field Sample
MW-54-140-200	K153-05	1	NA	12/05/1420:00	12/01/1415:27	F6L04054	F6L04048	IML002W	Field Sample
MW-54-195-200	K153-07	1	NA	12/05/1420:04	12/01/1415:27	F6L04055	F6L04048	IML002W	Field Sample
MW-55-045-200	K153-09	1	NA	12/05/1420:08	12/01/1415:27	F6L04056	F6L04048	IML002W	Field Sample
MW-55-120-200	K153-11	1	NA	12/05/1420:12	12/01/1415:27	F6L04057	F6L04048	IML002W	Field Sample
MW-141-200AS	K153-01A	1	NA	12/08/1418:02	12/01/1415:27	F6L05048	F6L05046	IML002W	Analytical Spike Sample
MW-141-200	K153-01N	1	NA	12/08/1418:06	12/01/1415:27	F6L05049	F6L05046	IML002W	Field Sample
MW-141-200DL	K153-01J	5	NA	12/08/1418:10	12/01/1415:27	F6L05050	F6L05046	IML002W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-141-200	Date Analyzed:	12/08/14 18:06
Lab Samp ID:	K153-01N	Dilution Factor:	1
Lab File ID:	F6L05049	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L05046	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-54-085-200	Date Analyzed:	12/05/14 19:55
Lab Samp ID:	K153-03	Dilution Factor:	1
Lab File ID:	F6L04053	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04048	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-54-140-200	Date Analyzed:	12/05/14 20:00
Lab Samp ID:	K153-05	Dilution Factor:	1
Lab File ID:	F6L04054	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04048	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-54-195-200	Date Analyzed:	12/05/14 20:04
Lab Samp ID:	K153-07	Dilution Factor:	1
Lab File ID:	F6L04055	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04048	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-55-045-200	Date Analyzed:	12/05/14 20:08
Lab Samp ID:	K153-09	Dilution Factor:	1
Lab File ID:	F6L04056	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04048	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	11/18/14
Project	: PG&E TOPOCK	Date Received:	11/20/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MW-55-120-200	Date Analyzed:	12/05/14 20:12
Lab Samp ID:	K153-11	Dilution Factor:	1
Lab File ID:	F6L04057	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04048	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	7.16	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E TOPOCK	Date Received:	12/01/14
SDG NO.	: 14K153	Date Extracted:	12/01/14 15:27
Sample ID:	MBLK1W	Date Analyzed:	12/05/14 18:21
Lab Samp ID:	IML002WB	Dilution Factor:	1
Lab File ID:	F6L04031	Matrix :	WATER
Ext Btch ID:	IML002W	% Moisture :	NA
Calib. Ref.:	F6L04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 14K153
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IML002WB	IML002WL	IML002WC		
LAB FILE ID:	F6L04031	F6L04032	F6L04033		
DATIME EXTRCTD:	12/01/1415:27	12/01/1415:27	12/01/1415:27	DATE COLLECTED:	NA
DATIME ANALYZD:	12/05/1418:21	12/05/1418:26	12/05/1418:30	DATE RECEIVED:	12/01/14
PREP. BATCH:	IML002W	IML002W	IML002W		
CALIB. REF:	F6L04027	F6L04027	F6L04027		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Chromium	ND	30.0	30.4	101	30.0	30.4	101	0	85-115	20

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14K153
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-141-200	MW-141-200DL		
EMAX SAMP ID:	K153-01N	K153-01J		
LAB FILE ID:	F6L05049	F6L05050		
DATE EXTRACTED:	12/01/1415:27	12/01/1415:27	DATE COLLECTED:	11/18/14
DATE ANALYZED:	12/08/1418:06	12/08/1418:10	DATE RECEIVED:	11/20/14
PREP. BATCH:	IML002W	IML002W		
CALIB. REF:	F6L05046	F6L05046		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Chromium	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT:	ASSET LABS
PROJECT:	PG&E TOPOCK
SDG NO.:	14K153
METHOD:	SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-141-200			
CONTROL NO.:	K153-01N	K153-01A		
LAB FILE ID:	F6L05049	F6L05048		
DATIME EXTRCTD:	12/01/1415:27	12/01/1415:27	DATE COLLECTED:	11/18/14
DATIME ANALYZD:	12/08/1418:06	12/08/1418:02	DATE RECEIVED:	11/20/14
PREP. BATCH:	IML002W	IML002W		
CALIB. REF:	F6L05046	F6L05046		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Chromium	ND	30.0	29.3	98	75-125

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14K153

METHOD E218.6
CHROMIUM HEXAVALENT BY IC

A total of seven(7) water samples were received on 11/20/14 to be analyzed for Chromium Hexavalent by IC in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, three(3) method blanks were analyzed. Hexavalent Chromium was compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, three(3) sets of LCS/LCD were analyzed.
Hexavalent Chromium was within LCS QC limits in HCK013WL/HCK013WC.
Hexavalent Chromium was within LCS QC limits in HCK015WL/HCK015WC.
Hexavalent Chromium was within LCS QC limits in HCL001WL/HCL001WY. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, MS was analyzed for all samples. Matrix spike recovery for Hexavalent Chromium was within MS QC limits in all samples. Sample Duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples K153-02 and -09 were reported from DF=5; sample K153-07 was reported from DF=10 due to matrix interference. All raw data were submitted for review.

Sample K153-11 was reported from DF=5 due to over calibration range.

METHOD E218.6
HEXAVALENT CHROMIUM

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCK013WB	ND	1	NA	0.2	0.1	11/24/1417:14	NA	IK25003	IK25001	HCK013W	NA	NA
LCS1W	HCK013WL	0.98	1	NA	0.2	0.1	11/24/1417:24	NA	IK25004	IK25001	HCK013W	NA	NA
LCD1W	HCK013WC	1.0	1	NA	0.2	0.1	11/24/1417:35	NA	IK25005	IK25001	HCK013W	NA	NA
MW-141-200	K153-01	ND	1	NA	0.2	0.1	11/24/1417:45	NA	IK25006	IK25001	HCK013W	11/18/1407:00	11/20/14
MW-141-200DUP	K153-01D	ND	1	NA	0.2	0.1	11/24/1417:56	NA	IK25007	IK25001	HCK013W	11/18/1407:00	11/20/14
MW-141-200MS	K153-01M	0.99	1	NA	0.2	0.1	11/24/1418:06	NA	IK25008	IK25001	HCK013W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03	ND	1	NA	0.2	0.1	11/24/1418:58	NA	IK25013	IK25009	HCK013W	11/18/1408:22	11/20/14
MW-54-085-200MS	K153-03M	0.96	1	NA	0.2	0.1	11/24/1419:08	NA	IK25014	IK25009	HCK013W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05	ND	1	NA	0.2	0.1	11/24/1419:19	NA	IK25015	IK25009	HCK013W	11/18/1409:22	11/20/14
MW-54-140-200MS	K153-05M	1.1	1	NA	0.2	0.1	11/24/1419:29	NA	IK25016	IK25009	HCK013W	11/18/1409:22	11/20/14
MBLK2W	HCK015WB	ND	1	NA	0.2	0.1	11/25/1414:14	NA	IK26003	IK26001	HCK015W	NA	NA
LCS2W	HCK015WL	0.98	1	NA	0.2	0.1	11/25/1414:24	NA	IK26004	IK26001	HCK015W	NA	NA
LCD2W	HCK015WC	1.0	1	NA	0.2	0.1	11/25/1414:34	NA	IK26005	IK26001	HCK015W	NA	NA
MW-54-195-200	K153-07J	ND	10	NA	2	1	11/25/1416:41	NA	IK26017	IK26013	HCK015W	11/18/1409:52	11/20/14
MW-54-195-200MS	K153-07JM	10.2	10	NA	2	1	11/25/1416:51	NA	IK26018	IK26013	HCK015W	11/18/1409:52	11/20/14
MW-241-200	K153-02I	ND	5	NA	1	0.5	11/25/1417:01	NA	IK26019	IK26013	HCK015W	11/18/1415:13	11/20/14
MW-241-200MS	K153-02IM	4.5	5	NA	1	0.5	11/25/1417:12	NA	IK26020	IK26013	HCK015W	11/18/1415:13	11/20/14
MW-55-045-200	K153-09I	ND	5	NA	1	0.5	11/25/1417:22	NA	IK26021	IK26013	HCK015W	11/18/1412:27	11/20/14
MW-55-045-200MS	K153-09IM	4.6	5	NA	1	0.5	11/25/1417:33	NA	IK26022	IK26013	HCK015W	11/18/1412:27	11/20/14
MBLK3W	HCL001WB	ND	1	NA	0.2	0.1	12/01/1415:56	NA	IL02003	IL02001	HCL001W	NA	NA
LCS3W	HCL001WL	1.1	1	NA	0.2	0.1	12/01/1416:06	NA	IL02004	IL02001	HCL001W	NA	NA
MW-55-120-200	K153-11I	7.5	5	NA	1	0.5	12/01/1416:38	NA	IL02007	IL02001	HCL001W	11/18/1413:22	11/20/14
MW-55-120-200MS	K153-11IM	12.3	5	NA	1	0.5	12/01/1416:49	NA	IL02008	IL02001	HCL001W	11/18/1413:22	11/20/14
LCD3W	HCL001WY	1.1	1	NA	0.2	0.1	12/01/1416:59	NA	IL02009	IL02001	HCL001W	NA	NA

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	HCK013WB	HCK013WL	HCK013WC
LAB FILE ID :	IK25003	IK25004	IK25005
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	11/24/1417:14	11/24/1417:24	11/24/1417:35
PREP BATCH :	HCK013W	HCK013W	HCK013W
CALIBRATION REF:	IK25001	IK25001	IK25001

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	1	0.983	98	1	1.03	103	5	90-110	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK2W	LCS2W	LCD2W
LAB SAMPLE ID :	HCK015WB	HCK015WL	HCK015WC
LAB FILE ID :	IK26003	IK26004	IK26005
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	11/25/1414:14	11/25/1414:24	11/25/1414:34
PREP BATCH :	HCK015W	HCK015W	HCK015W
CALIBRATION REF:	IK26001	IK26001	IK26001

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	1	0.977	98	1	1.02	102	4	90-110	20

1262

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

:LIENT: ASSET LABS
'ROJECT: PG&E TOPOCK
3ATCH NO.: 14K153
1ETHOD: METHOD 218.6

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1ATRIX:	WATER			% MOISTURE:	NA
)ILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK3W				
LAB SAMP ID:	HCL001WB	HCL001WL	HCL001WY		
LAB FILE ID:	IL02003	IL02004	IL02009		
)ATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
)ATE ANALYZED:	12/01/1415:56	12/01/1416:06	12/01/1416:59	DATE RECEIVED:	NA
PREP. BATCH:	HCL001W	HCL001W	HCL001W		
CALIB. REF:	IL02001	IL02001	IL02001		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Hexavalent Chromium	ND	1	1.07	107	1	1.03	103	4	90-110	20

1293

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-141-200	MW-141-200MS
LAB SAMPLE ID	: K153-01	K153-01M
LAB FILE ID	: IK25006	IK25008
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/24/1417:45	11/24/1418:06
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	0.987	99	90-110

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

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MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-141-200	MW-141-200DUP
LAB SAMPLE ID	: K153-01	K153-01D
LAB FILE ID	: IK25006	IK25007
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/24/1417:45	11/24/1417:56
PREP BATCH	: HCK011W	HCK011W
CALIBRATION REF	: IK25001	IK25001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	ND	0	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-241-200	MW-241-200MS
LAB SAMPLE ID	: K153-02I	K153-02M
LAB FILE ID	: IK26019	IK26020
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/25/1417:01	11/25/1417:12
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	4.53	91	90-110

1365

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-085-200	MW-54-085-200MS
LAB SAMPLE ID	: K153-03	K153-03M
LAB FILE ID	: IK25013	IK25014
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/24/1418:58	11/24/1419:08
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	0.963	96	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-140-200	MW-54-140-200MS
LAB SAMPLE ID	: K153-05	K153-05M
LAB FILE ID	: IK25015	IK25016
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/24/1419:19	11/24/1419:29
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	1.07	107	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW-54-195-200	MW-54-195-200MS
LAB SAMPLE ID	: K153-07J	K153-07M
LAB FILE ID	: IK26017	IK26018
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/25/1416:41	11/25/1416:51
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	10	10.2	102	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

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MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-55-045-200	MW-55-045-200MS
LAB SAMPLE ID	: K153-09I	K153-09M
LAB FILE ID	: IK26021	IK26022
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/25/1417:22	11/25/1417:33
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	4.57	91	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : E218.6

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MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-55-120-200	MW-55-120-200MS
LAB SAMPLE ID	: K153-11I	K153-11M
LAB FILE ID	: IL02007	IL02008
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/01/1416:38	12/01/1416:49
PREP BATCH	: HCL001W	HCL001W
CALIBRATION REF	: IL02001	IL02001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	7.46	5	12.3	97	90-110

1214

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14K153

METHOD E120.1
SPECIFIC CONDUCTANCE

A total of six(6) water samples were received on 11/20/14 to be analyzed for Specific Conductance in accordance with Method E120.1 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as specified by the method. All calibration requirements were within acceptance criteria.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

E120.1
SPECIFIC CONDUCTANCE

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
InstrumentID : D4

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (umhos/cm)	PREP FACTOR	MOIST (%)	RL (umhos/cm)	MDL (umhos/cm)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MW-141-200	K153-01	10500	1	NA	2	2	12/02/1416:13	NA	14ECL00110	14ECL001	ECL001W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03	10600	1	NA	2	2	12/02/1416:14	NA	14ECL00111	14ECL001	ECL001W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05	12900	1	NA	2	2	12/02/1416:15	NA	14ECL00112	14ECL001	ECL001W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07	19500	1	NA	2	2	12/02/1416:16	NA	14ECL00113	14ECL001	ECL001W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09	1470	1	NA	2	2	12/02/1416:17	NA	14ECL00114	14ECL001	ECL001W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11	8930	1	NA	2	2	12/02/1416:18	NA	14ECL00115	14ECL001	ECL001W	11/18/1413:22	11/20/14

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14K153

METHOD E300.0
ANIONS BY IC

A total of six (6) water samples were received on 11/20/14 to be analyzed for Bromide, Chloride and Sulfate by IC in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, three (3) method blanks were analyzed. Bromide, Chloride and Sulfate was not detected in ICK035WB, ICK037WB and ICK039WB. Sulfate was not detected in ICK037WB. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, three (3) sets of LCS/LCD were analyzed. Sulfate was within LCS QC limits in ICK035WL/ICK035WC. Bromide, Chloride and Sulfate was within LCS QC limits in ICK037WL/ICK037WC and ICK039WL/ICK039WC. Refer to LCS summary forms for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.
Sample K153-07 for Bromide was initially analyzed at 2X due to high conductivity.

METHOD E300.0
BROMIDE

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
Instrument ID : DO

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICK035WB	ND	1	NA	0.500	0.250	11/20/1411:59	NA	AK25-03	AK25-01	ICK035W	NA	NA
LCS1W	ICK035WL	2.20	1	NA	0.500	0.250	11/20/1412:15	NA	AK25-04	AK25-01	ICK035W	NA	NA
LCD1W	ICK035WC	2.20	1	NA	0.500	0.250	11/20/1412:30	NA	AK25-05	AK25-01	ICK035W	NA	NA
MW-55-120-200	K153-11	1.42	1	NA	0.500	0.250	11/20/1415:38	NA	AK25-15	AK25-13	ICK035W	11/18/1413:22	11/20/14
MW-55-045-200	K153-09	ND	1	NA	0.500	0.250	11/20/1415:53	NA	AK25-16	AK25-13	ICK035W	11/18/1412:27	11/20/14
MW-54-195-200	K153-07I	4.20	2	NA	1.00	0.500	11/20/1416:08	NA	AK25-17	AK25-13	ICK035W	11/18/1409:52	11/20/14
MW-54-140-200	K153-05	2.77	1	NA	0.500	0.250	11/20/1416:24	NA	AK25-18	AK25-13	ICK035W	11/18/1409:22	11/20/14
MW-54-085-200	K153-03	2.53	1	NA	0.500	0.250	11/20/1416:39	NA	AK25-19	AK25-13	ICK035W	11/18/1408:22	11/20/14
MW-141-200	K153-01	2.00	1	NA	0.500	0.250	11/20/1416:54	NA	AK25-20	AK25-13	ICK035W	11/18/1407:00	11/20/14

METHOD E300.0
CHLORIDE

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
Instrument ID : DO

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICK039WB	ND	1	NA	0.500	0.100	11/21/1411:49	NA	AK27-03	AK27-01	ICK039W	NA	NA
LCS1W	ICK039WL	2.04	1	NA	0.500	0.100	11/21/1412:20	NA	AK27-05	AK27-01	ICK039W	NA	NA
LCD1W	ICK039WC	2.09	1	NA	0.500	0.100	11/21/1412:35	NA	AK27-06	AK27-01	ICK039W	NA	NA
MW-141-200	K153-01I	3330	400	NA	200	40.0	11/21/1412:50	NA	AK27-07	AK27-01	ICK039W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03I	3350	400	NA	200	40.0	11/21/1413:05	NA	AK27-08	AK27-01	ICK039W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05I	4260	500	NA	250	50.0	11/21/1413:20	NA	AK27-09	AK27-01	ICK039W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07I	6610	800	NA	400	80.0	11/21/1413:36	NA	AK27-10	AK27-01	ICK039W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09I	325	40	NA	20.0	4.00	11/21/1413:51	NA	AK27-11	AK27-01	ICK039W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11I	2870	400	NA	200	40.0	11/21/1414:06	NA	AK27-12	AK27-01	ICK039W	11/18/1413:22	11/20/14

METHOD E300.0
SULFATE

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
Instrument ID : DO

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICK035WB	ND	1	NA	0.500	0.250	11/20/1411:59	NA	AK25-03	AK25-01	ICK035W	NA	NA
LCS1W	ICK035WL	5.35	1	NA	0.500	0.250	11/20/1412:15	NA	AK25-04	AK25-01	ICK035W	NA	NA
LCD1W	ICK035WC	5.21	1	NA	0.500	0.250	11/20/1412:30	NA	AK25-05	AK25-01	ICK035W	NA	NA
MW-141-200DL	K153-01I	634	50	NA	25.0	12.5	11/20/1417:09	NA	AK25-21	AK25-13	ICK035W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03I	636	50	NA	25.0	12.5	11/20/1417:24	NA	AK25-22	AK25-13	ICK035W	11/18/1408:22	11/20/14
MBLK2W	ICK037WB	ND	1	NA	0.500	0.250	11/20/1418:40	NA	AK25-27	AK25-25	ICK037W	NA	NA
LCS2W	ICK037WL	5.34	1	NA	0.500	0.250	11/20/1418:55	NA	AK25-28	AK25-25	ICK037W	NA	NA
LCD2W	ICK037WC	5.32	1	NA	0.500	0.250	11/20/1419:10	NA	AK25-29	AK25-25	ICK037W	NA	NA
MW-54-140-200	K153-05I	571	50	NA	25.0	12.5	11/20/1419:26	NA	AK25-30	AK25-25	ICK037W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07J	1080	100	NA	50.0	25.0	11/20/1419:41	NA	AK25-31	AK25-25	ICK037W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09I	62.1	5	NA	2.50	1.25	11/20/1419:56	NA	AK25-32	AK25-25	ICK037W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11I	341	40	NA	20.0	10.0	11/20/1420:11	NA	AK25-33	AK25-25	ICK037W	11/18/1413:22	11/20/14

0555

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14K153
METHOD: E300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICK035WB	ICK035WL	ICK035WC		
LAB FILE ID:	AK25-03	AK25-04	AK25-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	11/20/1411:59	11/20/1412:15	11/20/1412:30	DATE RECEIVED:	NA
PREP. BATCH:	ICK035W	ICK035W	ICK035W		
CALIB. REF:	AK25-01	AK25-01	AK25-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Bromide	ND	2	2.2	110	2	2.2	110	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14K153
METHOD: E300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICK039WB	ICK039WL	ICK039WC		
LAB FILE ID:	AK27-03	AK27-05	AK27-06		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	11/21/1411:49	11/21/1412:20	11/21/1412:35	DATE RECEIVED:	NA
PREP. BATCH:	ICK039W	ICK039W	ICK039W		
CALIB. REF:	AK27-01	AK27-01	AK27-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	2.04	102	2	2.09	105	2	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14K153
METHOD: E300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICK035WB	ICK035WL	ICK035WC		
LAB FILE ID:	AK25-03	AK25-04	AK25-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	11/20/1411:59	11/20/1412:15	11/20/1412:30	DATE RECEIVED:	NA
PREP. BATCH:	ICK035W	ICK035W	ICK035W		
CALIB. REF:	AK25-01	AK25-01	AK25-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
SULFATE	ND	5	5.35	107	5	5.21	104	3	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14K153
METHOD: E300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICK037WB	ICK037WL	ICK037WC		
LAB FILE ID:	AK25-27	AK25-28	AK25-29		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	11/20/1418:40	11/20/1418:55	11/20/1419:10	DATE RECEIVED:	NA
PREP. BATCH:	ICK037W	ICK037W	ICK037W		
CALIB. REF:	AK25-25	AK25-25	AK25-25		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
SULFATE	ND	5	5.34	107	5	5.32	106	0	90-110	20

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14K153

METHOD SM2320B
BICARBONATE, CARBONATE AND TOTAL ALKALINITY

A total of six(6) water samples were received on 11/20/14 to be analyzed for Bicarbonate, Carbonate and Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were extracted and analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALK004WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. Bicarbonate, Carbonate and Total Alkalinity was within LCS QC limits in ALK004WL/ALK004WC. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Percent recovery for Bicarbonate, Carbonate and Total Alkalinity was within MS QC limits in K153-01M/K153-01S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
BICARBONATE ALKALINITY

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALK004WB	ND	1	NA	5	5	11/25/1417:45	NA	14E5K0404	14E5K04	ALK004W	NA	NA
MW-141-200	K153-01	151	1	NA	5	5	11/25/1418:05	NA	14E5K0407	14E5K04	ALK004W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03	158	1	NA	5	5	11/25/1418:40	NA	14E5K0410	14E5K04	ALK004W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05	97.8	1	NA	5	5	11/25/1418:47	NA	14E5K0411	14E5K04	ALK004W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07	58.3	1	NA	5	5	11/25/1418:55	NA	14E5K0412	14E5K04	ALK004W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09	198	1	NA	5	5	11/25/1419:02	NA	14E5K0413	14E5K04	ALK004W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11	60.5	1	NA	5	5	11/25/1419:25	NA	14E5K0416	14E5K04	ALK004W	11/18/1413:22	11/20/14

METHOD SM2320B
CARBONATE ALKALINITY

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALK004WB	ND	1	NA	5	5	11/25/1417:45	NA	14E5K0404	14E5K04	ALK004W	NA	NA
MW-141-200	K153-01	ND	1	NA	5	5	11/25/1418:05	NA	14E5K0407	14E5K04	ALK004W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03	ND	1	NA	5	5	11/25/1418:40	NA	14E5K0410	14E5K04	ALK004W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05	ND	1	NA	5	5	11/25/1418:47	NA	14E5K0411	14E5K04	ALK004W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07	ND	1	NA	5	5	11/25/1418:55	NA	14E5K0412	14E5K04	ALK004W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09	ND	1	NA	5	5	11/25/1419:02	NA	14E5K0413	14E5K04	ALK004W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11	ND	1	NA	5	5	11/25/1419:25	NA	14E5K0416	14E5K04	ALK004W	11/18/1413:22	11/20/14

METHOD SM2320B
TOTAL ALKALINITY

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALK004WB	ND	1	NA	5	5	11/25/1417:45	NA	14E5K0404	14E5K04	ALK004W	NA	NA
LCS1W	ALK004WL	33.6	1	NA	5	5	11/25/1417:51	NA	14E5K0405	14E5K04	ALK004W	NA	NA
LCD1W	ALK004WC	35.2	1	NA	5	5	11/25/1417:58	NA	14E5K0406	14E5K04	ALK004W	NA	NA
MW-141-200	K153-01	151	1	NA	5	5	11/25/1418:05	NA	14E5K0407	14E5K04	ALK004W	11/18/1407:00	11/20/14
MW-141-200MS	K153-01M	861	1	NA	5	5	11/25/1418:19	NA	14E5K0408	14E5K04	ALK004W	11/18/1407:00	11/20/14
MW-141-200MSD	K153-01S	862	1	NA	5	5	11/25/1418:32	NA	14E5K0409	14E5K04	ALK004W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03	158	1	NA	5	5	11/25/1418:40	NA	14E5K0410	14E5K04	ALK004W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05	97.8	1	NA	5	5	11/25/1418:47	NA	14E5K0411	14E5K04	ALK004W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07	58.3	1	NA	5	5	11/25/1418:55	NA	14E5K0412	14E5K04	ALK004W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09	198	1	NA	5	5	11/25/1419:02	NA	14E5K0413	14E5K04	ALK004W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11	60.5	1	NA	5	5	11/25/1419:25	NA	14E5K0416	14E5K04	ALK004W	11/18/1413:22	11/20/14

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALK004WB	ALK004WL	ALK004WC
LAB FILE ID :	14E5K0404	14E5K0405	14E5K0406
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	11/25/1417:45	11/25/1417:51	11/25/1417:58
PREP BATCH :	ALK004W	ALK004W	ALK004W
CALIBRATION REF:	14E5K04	14E5K04	14E5K04

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Alkalinity	ND	37.1	33.6	91	37.1	35.2	95	5	85-115	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : SM2320B

MATRIX	: WATER		% MOISTURE:
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW-141-200	MW-141-200MS	MW-141-200MSD
LAB SAMPLE ID	: K153-01	K153-01M	K153-01S
LAB FILE ID	: 14E5K0407	14E5K0408	14E5K0409
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 11/25/1418:05	11/25/1418:19	11/25/1418:32
PREP BATCH	: ALK004W	ALK004W	ALK004W
CALIBRATION REF	: 14E5K04	14E5K04	14E5K04

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	SPIKE AMT (mg/L)	MSD RESULT (mg/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Alkalinity	151	800	861	89	800	862	89	0.2	85-115	20

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14K153

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of six(6) water samples were received on 11/20/14 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDK006WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Total Dissolved Solids was within LCS QC limits in TDK006WL. Refer to LCS summary form for details.

Matrix QC Sample
Sample Duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14K153

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDK006WB	ND	1	NA	10	10	11/21/1412:45	NA	14TDK00601	14TDK006	TDK006W	NA	NA
LCS1W	TDK006WL	1040	1	NA	10	10	11/21/1412:45	NA	14TDK00602	14TDK006	TDK006W	NA	NA
MW-141-200	K153-01	6020	1	NA	10	10	11/21/1412:45	NA	14TDK00605	14TDK006	TDK006W	11/18/1407:00	11/20/14
MW-141-200DUP	K153-01D	6120	1	NA	10	10	11/21/1412:45	NA	14TDK00606	14TDK006	TDK006W	11/18/1407:00	11/20/14
MW-54-085-200	K153-03	6320	1	NA	10	10	11/21/1412:45	NA	14TDK00607	14TDK006	TDK006W	11/18/1408:22	11/20/14
MW-54-140-200	K153-05	7470	1	NA	10	10	11/21/1412:45	NA	14TDK00608	14TDK006	TDK006W	11/18/1409:22	11/20/14
MW-54-195-200	K153-07	13300	1	NA	10	10	11/21/1412:45	NA	14TDK00609	14TDK006	TDK006W	11/18/1409:52	11/20/14
MW-55-045-200	K153-09	784	1	NA	10	10	11/21/1412:45	NA	14TDK00610	14TDK006	TDK006W	11/18/1412:27	11/20/14
MW-55-120-200	K153-11	5120	1	NA	10	10	11/21/1412:45	NA	14TDK00611	14TDK006	TDK006W	11/18/1413:22	11/20/14

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : SM2540C

MATRIX	: WATER	
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: TDK006WB	TDK006WL
LAB FILE ID	: 14TDK00601	14TDK00602
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/21/1412:45	11/21/1412:45
PREP BATCH	: TDK006W	TDK006W
CALIBRATION REF	: 14TDK006	14TDK006

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total dissolved solids	ND	1000	1040	104	75-125

01461

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14K153
METHOD : SM2540C

MATRIX :	WATER	
DILUTION FACTOR:	1	1
SAMPLE ID :	MW-141-200	MW-141-200DUP
LAB SAMPLE ID :	K153-01	K153-01D
LAB FILE ID :	14TDK00605	14TDK00606
DATE PREPARED :	NA	NA
DATE ANALYZED :	11/21/1412:45	11/21/1412:45
PREP BATCH :	TDK006W	TDK006W
CALIBRATION REF:	14TDK006	14TDK006

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Total dissolved solids	6020	6120	2	10

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 01-12-2015
EMAX Batch No.: 14L195

Attn: Morlan Cartin

Asset Labs
3151 W. Post Road
Las Vegas NV 89118

Subject: Laboratory Report
Project: PG&E Topock

Enclosed is the Laboratory report for samples received on 12/23/14.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-56D-200	L195-01	12/18/14	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM
MW-56M-200	L195-02	12/18/14	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM
MW-56S-200	L195-03	12/18/14	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

14L195

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

22-Dec-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 120.1	EPA 218.6	EPA 3010A
1	N014203-001A / MW-56D-200	Water	12/18/2014 9:57:00 AM	8OZP		1	
	N014203-001B / MW-56D-200	Water	12/18/2014 9:57:00 AM	16OZP			1
	N014203-001C / MW-56D-200	Water	12/18/2014 9:57:00 AM	32OZP	1		
2	N014203-002A / MW-56M-200	Water	12/18/2014 10:45:00 AM	8OZP		1	
	N014203-002B / MW-56M-200	Water	12/18/2014 10:45:00 AM	16OZP			1
	N014203-002C / MW-56M-200	Water	12/18/2014 10:45:00 AM	32OZP	1		
3	N014203-003A / MW-56S-200	Water	12/18/2014 11:30:00 AM	8OZP		1	
	N014203-003B / MW-56S-200	Water	12/18/2014 11:30:00 AM	16OZP			1
	N014203-003C / MW-56S-200	Water	12/18/2014 11:30:00 AM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14203A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

CH2MHill Samples. Report copy to Shawn Duffy (530)941-9227. Please bill ASSET Laboratories. **GSO# 526470047**

		Date/Time			Date/Time
Relinquished by:	jjg 12/22/14	17:00	**Received by:**	[illegible] 12/23/14	1210
Relinquished by:			**Received by:**		

T=3.1C

1001

14L195

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Barry Collom

22-Dec-14

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 6020		
1	N014203-001A / MW-56D-200	Water	12/18/2014 9:57:00 AM	8OZP			
	N014203-001B / MW-56D-200	Water	12/18/2014 9:57:00 AM	16OZP	1		
	N014203-001C / MW-56D-200	Water	12/18/2014 9:57:00 AM	32OZP			
2	N014203-002A / MW-56M-200	Water	12/18/2014 10:45:00 AM	8OZP			
	N014203-002B / MW-56M-200	Water	12/18/2014 10:45:00 AM	16OZP	1		
	N014203-002C / MW-56M-200	Water	12/18/2014 10:45:00 AM	32OZP			
3	N014203-003A / MW-56S-200	Water	12/18/2014 11:30:00 AM	8OZP			
	N014203-003B / MW-56S-200	Water	12/18/2014 11:30:00 AM	16OZP	1		
	N014203-003C / MW-56S-200	Water	12/18/2014 11:30:00 AM	32OZP			

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14203A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

CH2MHill Samples. Report copy to Shawn Duffy (530)941-9227. Please bill ASSET Laboratories. **GSO# 526470047**

		Date/Time			Date/Time
Relinquished by:	jpg 12/22/14	17:00	**Received by:**	[signature] 12/23/14	1210
Relinquished by:			**Received by:**		

1002

14L195

CH2MHILL

CHAIN OF CUSTODY RECORD

12/18/2014 2:11:02 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-AZ
Turnaround Time 10 Days
Shipping Date: 11/14/2014
COC Number: 200-AZ

				Container:	250 ml Poly	500 ml Poly	1 Liter Poly			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C			
				Filtered:	Field	Field	NA			
				Holding Time:	28	180	7			
	DATE	TIME	Matrix		Cr6 (E218.6) Field Filtered	Metals (6020A) Field Filtered Chromium	Specific Conductance (E120.1)		Number of Containers	COMMENTS
MW-56D-200 (1)	12/18/2014	9:57	Water		X	X	X		3	
MW-56M-200 (2)	12/18/2014	10:45	Water		X	X	X		3	
MW-56S-200 (3)	12/18/2014	11:30	Water		X	X	X		3	
								TOTAL NUMBER OF CONTAINERS	9	

T=3.1°C

	Signatures	Date/Time
Approved by		12-18-14
Sampled by		
Relinquished by		12/18/14 @ 1617
Received by		
Relinquished by		12/18/14 @ 1841
Received by		12/23/14 1210

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no
Airbill No:
Lab Name:
Lab Phone:

3.6°C
IR#2

ATTN:
Sample Custody

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 144195
☐ Fedex ☐ UPS ☑ GSO ☐ Others	526470047	Recipient T. PATEL
☐ EMAX Courier ☐ Client Delivery		Date 12/23/14 Time 1210

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note:

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ plastic bag
Temperatures (Cool, ≤6 °C but not frozen)	B ☑ Cooler 1 3.1 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N* 130538505	*B - S/N* 140253070	*C - S/N* ____	*D - S/N* ____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.** FM 12/23/14

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1, 2, 3	2, 5, 8 D2/	D12	RCRD 250mL HDPE for Metals Analysis	R1

FM 12/23/14 12/23/14

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: FM 12/23/14

Samples for ~~Sep~~ Specific Conductivity (LSID 1,2,3; LSCID 3,6,9) received 5 days after collection. FM 12/23/14

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ____	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
✓D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ____	D16	Preservation not indicated in ____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	____
D10	No initial/date on corrections in COC/label	D22	____	R10	____
D11	Container count mismatch COC vs received	D23	____	R11	____
✓D12	Container size mismatch COC vs received	D24	____	R12	____

REVIEWS:

Sample Labeling ____ Date 12/23/14

SRF FM Date 12/23/14

PM ____ Date 12/23/14

12/23/14

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14L195

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

A total of three(3) water samples were received on 12/23/14 to be analyzed for Dissolved Chromium by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IML032WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. Chromium was within LCS QC limits in IML032WL/IML032WC. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG. However, MS/MSD was performed on another project's sample. Results were within QC limit.
In addition, analytical spike and serial dilution were analyzed to evaluate matrix interference. Results were within expected values.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples L195-01I and -02I were reported from dilution results at DF 5X due to failed internal standard in non-dilution runs.

Revised Report
7001

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : ASSET LABS
Project : PG&E TOPOCK

SDG NO. : 14L195
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IML032WB	1	NA	12/30/1414:45	12/29/1410:55	F6L20019	F6L20016	IML032W	Method Blank
LCS1W	IML032WL	1	NA	12/30/1414:49	12/29/1410:55	F6L20020	F6L20016	IML032W	Lab Control Sample (LCS)
LCD1W	IML032WC	1	NA	12/30/1414:53	12/29/1410:55	F6L20021	F6L20016	IML032W	LCS Duplicate
MW-56S-200	L195-03	1	NA	12/30/1420:28	12/29/1410:55	F6L20089	F6L20083	IML032W	Field Sample
MW-56D-200AS	L195-01A	5	NA	01/06/1518:15	12/29/1410:55	F6A02041	F6A02039	IML032W	Analytical Spike Sample
MW-56D-200	L195-01I	5	NA	01/06/1518:19	12/29/1410:55	F6A02042	F6A02039	IML032W	Diluted Sample
MW-56D-200DL	L195-01J	25	NA	01/06/1518:23	12/29/1410:55	F6A02043	F6A02039	IML032W	Diluted Sample
MW-56M-200	L195-02I	5	NA	01/06/1518:28	12/29/1410:55	F6A02044	F6A02039	IML032W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	12/18/14
Project	: PG&E TOPOCK	Date Received:	12/23/14
SDG NO.	: 14L195	Date Extracted:	12/29/14 10:55
Sample ID:	MW-56D-200	Date Analyzed:	01/06/15 18:19
Lab Samp ID:	L195-01I	Dilution Factor:	5
Lab File ID:	F6A02042	Matrix :	WATER
Ext Btch ID:	IML032W	% Moisture :	NA
Calib. Ref.:	F6A02039	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	5.00	1.00

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	12/18/14
Project	: PG&E TOPOCK	Date Received:	12/23/14
SDG NO.	: 14L195	Date Extracted:	12/29/14 10:55
Sample ID:	MW-56M-200	Date Analyzed:	01/06/15 18:28
Lab Samp ID:	L195-02I	Dilution Factor:	5
Lab File ID:	F6A02044	Matrix :	WATER
Ext Btch ID:	IML032W	% Moisture :	NA
Calib. Ref.:	F6A02039	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	5.00	1.00

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	12/18/14
Project	: PG&E TOPOCK	Date Received:	12/23/14
SDG NO.	: 14L195	Date Extracted:	12/29/14 10:55
Sample ID:	MW-56S-200	Date Analyzed:	12/30/14 20:28
Lab Samp ID:	L195-03	Dilution Factor:	1
Lab File ID:	F6L20089	Matrix :	WATER
Ext Btch ID:	IML032W	% Moisture :	NA
Calib. Ref.:	F6L20083	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E TOPOCK	Date Received:	12/29/14
SDG NO.	: 14L195	Date Extracted:	12/29/14 10:55
Sample ID:	MBLK1W	Date Analyzed:	12/30/14 14:45
Lab Samp ID:	IML032WB	Dilution Factor:	1
Lab File ID:	F6L20019	Matrix :	WATER
Ext Btch ID:	IML032W	% Moisture :	NA
Calib. Ref.:	F6L20016	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 14L195
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IML032WB	IML032WL	IML032WC		
LAB FILE ID:	F6L20019	F6L20020	F6L20021		
DATIME EXTRCTD:	12/29/1410:55	12/29/1410:55	12/29/1410:55	DATE COLLECTED:	NA
DATIME ANALYZD:	12/30/1414:45	12/30/1414:49	12/30/1414:53	DATE RECEIVED:	12/29/14
PREP. BATCH:	IML032W	IML032W	IML032W		
CALIB. REF:	F6L20016	F6L20016	F6L20016		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Chromium	ND	30.0	30.7	102	30.0	30.7	102	0	85-115	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 14L195
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	QC				
CONTROL NO.:	L160-02	L160-02M	L160-02S		
LAB FILE ID:	F6A03032	F6A03029	F6A03030		
DATIME EXTRCTD:	12/29/1410:55	12/29/1410:55	12/29/1410:55	DATE COLLECTED:	12/16/14
DATIME ANALYZD:	01/07/1518:42	01/07/1518:29	01/07/1518:34	DATE RECEIVED:	12/17/14
PREP. BATCH:	IML032W	IML032W	IML032W		
CALIB. REF:	F6A03023	F6A03023	F6A03023		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Chromium	0.234J	30.0	30.0	99	30.0	29.9	99	0	80-120	20

7007A

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 14L195
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	25		
SAMPLE ID:	MW-56D-200	MW-56D-200DL		
EMAX SAMP ID:	L195-01I	L195-01J		
LAB FILE ID:	F6A02042	F6A02043		
DATE EXTRACTED:	12/29/1410:55	12/29/1410:55	DATE COLLECTED:	12/18/14
DATE ANALYZED:	01/06/1518:19	01/06/1518:23	DATE RECEIVED:	12/23/14
PREP. BATCH:	IML032W	IML032W		
CALIB. REF:	F6A02039	F6A02039		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Chromium	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT:	ASSET LABS
PROJECT:	PG&E TOPOCK
SDG NO.:	14L195
METHOD:	SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	5	5		
SAMPLE ID:	MW-56D-200			
CONTROL NO.:	L195-01I	L195-01A		
LAB FILE ID:	F6A02042	F6A02041		
DATIME EXTRCTD:	12/29/1410:55	12/29/1410:55	DATE COLLECTED:	12/18/14
DATIME ANALYZD:	01/06/1518:19	01/06/1518:15	DATE RECEIVED:	12/23/14
PREP. BATCH:	IML032W	IML032W		
CALIB. REF:	F6A02039	F6A02039		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Chromium	ND	150	146	97	75-125

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14L195

METHOD E120.1
SPECIFIC CONDUCTANCE

A total of three(3) water samples were received on 12/23/14 to be analyzed for Specific Conductance in accordance with Method E120.1 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as specified by the method. All calibration requirements were within acceptance criteria.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

E120.1
SPECIFIC CONDUCTANCE

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14L195

Matrix : WATER
InstrumentID : D4

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (umhos/cm)	PREP FACTOR	MOIST (%)	RL (umhos/cm)	MDL (umhos/cm)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MW-56D-200	L195-01	2040	1	NA	2	2	12/24/1417:22	NA	14ECL00703	14ECL007	ECL007W	12/18/1409:57	12/23/14
MW-56M-200	L195-02	14100	1	NA	2	2	12/24/1417:23	NA	14ECL00704	14ECL007	ECL007W	12/18/1410:45	12/23/14
MW-56S-200	L195-03	7080	1	NA	2	2	12/24/1417:23	NA	14ECL00705	14ECL007	ECL007W	12/18/1411:30	12/23/14

FileID: 14ECL007W

EMAX LABORATORIES, INC.

SPECIFIC CONDUCTANCE ANALYSIS LOG

PrepBatchID	LabSampleID	Aliquot (ml)	Final Vol(ml	DF	nalysisDateTime	ound Conc.	Conductivity	Unit	Notes
14ECL00701	L163-01	20	20.00	1	12/24/14 17:20	489	489	uS/cm	
14ECL00702	L178-01	20	20.00	1	12/24/14 17:21	644	644	uS/cm	
14ECL00703	L195-01	20	20.00	1	12/24/14 17:22	2040	2040	uS/cm	
14ECL00704	L195-02	20	20.00	1	12/24/14 17:23	14080	14100	uS/cm	
14ECL00705	L195-03	20	20.00	1	12/24/14 17:23	7080	7080	uS/cm	
14ECL00706	L186-01	20	20.00	1	12/24/14 17:24	658	658	uS/cm	
14ECL00707	L186-01D	20	20.00	1	12/24/14 17:25	662	662	uS/cm	

SY 12/24/14

Calibration of Conductivity Meter InstrumentID: D4

	CAL Standard ID	Conc.(µS/cm)	Reading	DateTime
ICAL1	SW1-01-661	9.51	9.51	12/24/14 17:15
ICAL2	SW1-01-682	99.7	99.7	12/24/14 17:16
ICAL3	SW1-01-701	1000	1000	12/24/14 17:17
ICAL4	SW1-01-662	99821	99800	12/24/14 17:18
CCS	SW1-01-681	1412	1411	12/24/14 17:18
ICV	SW1-01-621	376	381	12/24/14 17:19

Calibration Temperature: 25

☑ Verified Cell Constant (K) @ 1 S/cm

ICV Acceptance Limits:

QC Check	Result(µS/cm)	Expected Val	QC Check
CCS	1411	1412	%Rec=100
ICV			
L186-01D	662	658	RPD=1

Comment:

☑ Sample(s) is/are filtered upon receipt

☐ Sample(s) is/are analyzed upon receipt

pH strip Lot# HC421273

0.45 micron filter Lot# 21849655

SNAPSEAL LOT#: 08214003

ALL SAMPLES WERE FILTERED UPON RECEIPT

☐ EMAX-2510B Rev. 4 Analyzed By: Syamau

☑ EMAX-120.1 Rev. 6 Checked By: SY

☐ EMAX-9050 Rev. 2 Date: 12/24/14

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 14L195

METHOD E218.6
HEXAVALENT CHROMIUM

A total of three(3) water samples were received on 12/23/14 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Hexavalent Chromium was not detected in HCA005WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. Hexavalent Chromium was within LCS QC limits in HCA005WL/HCA005WC. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike samples were prepared and analyzed at a frequency required by the project. For this SDG, three(3) MS were analyzed. Matrix spike recoveries for Hexavalent Chromium were within MS QC limits in L195-01M, -02M and -03M. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.
Samples L195-01 and -02 were reported from DF=5 due to matrix interference. All raw data (including 1x) were submitted for review.

METHOD E218.6
HEXAVALENT CHROMIUM

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 14L195

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCA005WB	ND	1	NA	0.2	0.1	01/07/1518:51	NA	IA09004	IA09001	HCA005W	NA	NA
LCS1W	HCA005WL	0.97	1	NA	0.2	0.1	01/07/1519:01	NA	IA09005	IA09001	HCA005W	NA	NA
LCD1W	HCA005WC	0.99	1	NA	0.2	0.1	01/07/1519:12	NA	IA09006	IA09001	HCA005W	NA	NA
MW-56S-200	L195-03	ND	1	NA	0.2	0.1	01/07/1519:22	NA	IA09007	IA09001	HCA005W	12/18/1411:30	12/23/14
MW-56S-200MS	L195-03M	1.1	1	NA	0.2	0.1	01/07/1519:33	NA	IA09008	IA09001	HCA005W	12/18/1411:30	12/23/14
MW-56M-200	L195-02	ND	1	NA	0.2	0.1	01/07/1519:43	NA	IA09009	IA09001	HCA005W	12/18/1410:45	12/23/14
MW-56M-200	L195-02I	ND	5	NA	1	0.5	01/07/1520:04	NA	IA09011	IA09001	HCA005W	12/18/1410:45	12/23/14
MW-56M-200MS	L195-02IM	5.4	5	NA	1	0.5	01/07/1520:14	NA	IA09012	IA09001	HCA005W	12/18/1410:45	12/23/14
MW-56D-200	L195-01I	ND	5	NA	1	0.5	01/07/1521:17	NA	IA09017	IA09013	HCA005W	12/18/1409:57	12/23/14
MW-56D-200MS	L195-01IM	5.0	5	NA	1	0.5	01/07/1521:27	NA	IA09018	IA09013	HCA005W	12/18/1409:57	12/23/14
MW-56D-200DUP	L195-01ID	ND	5	NA	1	0.5	01/07/1521:37	NA	IA09019	IA09013	HCA005W	12/18/1409:57	12/23/14

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14L195
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	HCA005WB	HCA005WL	HCA005WC
LAB FILE ID	IA09004	IA09005	IA09006
DATE PREPARED	NA	NA	NA
DATE ANALYZED	1/07/1518:51	1/07/1519:01	1/07/1519:12
PREP BATCH	HCA005W	HCA005W	HCA005W
CALIBRATION REF:	IA09001	IA09001	IA09001

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	1	0.97	97	1	0.99	99	2	90-110	20

8815

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14L195
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	HCA005WB	HCA005WL	HCA005WC
LAB FILE ID :	IA09004	IA09005	IA09006
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	1/07/1518:51	1/07/1519:01	1/07/1519:12
PREP BATCH :	HCA005W	HCA005W	HCA005W
CALIBRATION REF:	IA09001	IA09001	IA09001

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	1	0.97	97	1	0.99	99	2	90-110	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14L195
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-56D-200	MW-56D-200MS
LAB SAMPLE ID	: L195-01I	L195-01M
LAB FILE ID	: IA09017	IA09018
DATE PREPARED	: NA	NA
DATE ANALYZED	: 1/07/1521:17	1/07/1521:27
PREP BATCH	: HCA005W	HCA005W
CALIBRATION REF	: IA09013	IA09013

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	5.0	100	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14L195
METHOD : E218.6

==========

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID : MW-56M-200 MW-56M-200MS
LAB SAMPLE ID : L195-02I L195-02M
LAB FILE ID : IA09011 IA09012
DATE PREPARED : NA NA
DATE ANALYZED : 1/07/1520:04 1/07/1520:14
PREP BATCH : HCA005W HCA005W
CALIBRATION REF: IA09013 IA09013

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	5.4	108	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14L195
METHOD : E218.6

==========

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-56S-200	MW-56S-200MS
LAB SAMPLE ID	: L195-03	L195-03M
LAB FILE ID	: IA09007	IA09008
DATE PREPARED	: NA	NA
DATE ANALYZED	: 1/07/1519:22	1/07/1519:33
PREP BATCH	: HCA005W	HCA005W
CALIBRATION REF	: IA09013	IA09013

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	1.1	110	90-110

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 14L195
METHOD : E218.6

==========

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-56D-200	MW-56D-200DUP
LAB SAMPLE ID	: L195-01I	L195-01ID
LAB FILE ID	: IA09017	IA09019
DATE PREPARED	: NA	NA
DATE ANALYZED	: 1/07/1521:17	1/07/1521:37
PREP BATCH	: HCA005W	HCA005W
CALIBRATION REF	: IA09013	IA09013

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	ND	0	20

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TUSTIN, CALIFORNIA 92780-7008
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www.truesdail.com

December 1, 2014

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-224, GROUNDWATER MONITORING PROJECT, TLI NO.: 815080

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-224 groundwater-monitoring project. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on November 4, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Samples were analyzed and recorded in the raw data as SDG 14K0083 but are reported as SDG 815080 in all final report pages.

Samples for pH analysis by SM 4500-H B were received past the method specified holding time. Mr. Duffy approved the analysis of the samples.

Sample TW-03D-224 for Hexavalent Chromium was analyzed by method EPA 218.6 rather than SW 3500-Cr B as requested on the COC.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 815080
Date: December 1, 2014
Collected: November 4, 2014
Received: November 4, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 4500-H B	pH	Jennine Ta
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Alex Luna
EPA 300.0	Anions	Giawad Ghenniwa
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Tom Martinez
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 815080
Date Received: November 4, 2014

Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC
P.O. No.: PGEIM11111001

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
815080-001	PE-01-224	E120.1	NONE	11/4/2014	8:00	EC	4230	umhos/cm	2.00
815080-001	PE-01-224	E200.7	LABFLT	11/4/2014	8:00	Calcium	101000	ug/L	50000
815080-001	PE-01-224	E200.7	LABFLT	11/4/2014	8:00	Iron	ND	ug/L	20.0
815080-001	PE-01-224	E200.7	LABFLT	11/4/2014	8:00	Magnesium	24000	ug/L	5000
815080-001	PE-01-224	E200.7	LABFLT	11/4/2014	8:00	Sodium	723000	ug/L	50000
815080-001	PE-01-224	E200.8	LABFLT	11/4/2014	8:00	Chromium	4.7	ug/L	1.0
815080-001	PE-01-224	E200.8	LABFLT	11/4/2014	8:00	Manganese	67.6	ug/L	1.0
815080-001	PE-01-224	E218.6	LABFLT	11/4/2014	8:00	Chromium, Hexavalent	4.00	ug/L	0.20
815080-001	PE-01-224	E300	NONE	11/4/2014	8:00	Chloride	970	mg/L	50.0
815080-001	PE-01-224	E300	NONE	11/4/2014	8:00	Nitrate as N	ND	mg/L	0.500
815080-001	PE-01-224	E300	NONE	11/4/2014	8:00	Sulfate	387	mg/L	12.5
815080-001	PE-01-224	SM2320B	NONE	11/4/2014	8:00	Alkalinity	220	mg/L	5.00
815080-001	PE-01-224	SM2320B	NONE	11/4/2014	8:00	Alkalinity, Bicarbonate (As CaCO3)	220	mg/L	5.00
815080-001	PE-01-224	SM2320B	NONE	11/4/2014	8:00	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
815080-001	PE-01-224	SM2540C	NONE	11/4/2014	8:00	Total Dissolved Solids	2500	mg/L	125
815080-001	PE-01-224	SM4500HB	NONE	11/4/2014	8:00	PH	7.59 J	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
815080-002	TW-03D-224	E120.1	NONE	11/4/2014	8:00	EC	7990	umhos/cm	2.00
815080-002	TW-03D-224	E200.7	LABFLT	11/4/2014	8:00	Calcium	208000	ug/L	50000
815080-002	TW-03D-224	E200.7	LABFLT	11/4/2014	8:00	Iron	ND	ug/L	20.0
815080-002	TW-03D-224	E200.7	LABFLT	11/4/2014	8:00	Magnesium	31400	ug/L	10000
815080-002	TW-03D-224	E200.7	LABFLT	11/4/2014	8:00	Sodium	1350000	ug/L	250000
815080-002	TW-03D-224	E200.8	LABFLT	11/4/2014	8:00	Chromium	706	ug/L	5.0
815080-002	TW-03D-224	E200.8	LABFLT	11/4/2014	8:00	Manganese	8.6	ug/L	0.50
815080-002	TW-03D-224	E218.6	LABFLT	11/4/2014	8:00	Chromium, Hexavalent	711	ug/L	10.0
815080-002	TW-03D-224	E300	NONE	11/4/2014	8:00	Chloride	2440	mg/L	50.0
815080-002	TW-03D-224	E300	NONE	11/4/2014	8:00	Nitrate as N	2.84	mg/L	0.500
815080-002	TW-03D-224	E300	NONE	11/4/2014	8:00	Sulfate	478	mg/L	50.0
815080-002	TW-03D-224	SM2320B	NONE	11/4/2014	8:00	Alkalinity	157	mg/L	5.00
815080-002	TW-03D-224	SM2320B	NONE	11/4/2014	8:00	Alkalinity, Bicarbonate (As CaCO3)	157	mg/L	5.00
815080-002	TW-03D-224	SM2320B	NONE	11/4/2014	8:00	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
815080-002	TW-03D-224	SM2540C	NONE	11/4/2014	8:00	Total Dissolved Solids	4980	mg/L	250
815080-002	TW-03D-224	SM4500HB	NONE	11/4/2014	8:00	PH	7.54 J	pH	4.00

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:

Results below 0.01 will have two (2) significant figures.

Result above or equal to 0.01 will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM1111100'
Release Number:

Laboratory No. 815080

Printed 12/1/2014

Samples Received on 11/4/2014 7:40:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-224	815080-001	11/04/2014 08:00	Water
TW-03D-224	815080-002	11/04/2014 08:00	Water

Anions By I.C. - EPA 300.0 Batch 1411091

Parameter		Unit	Analyzed	DF	MDL	RL	Result
815080-001	Chloride	mg/L	11/05/2014 15:16	500	17.4	50.0	970
	Nitrate as Nitrogen	mg/L	11/05/2014 13:10	5.00	0.0415	0.500	ND
	Sulfate	mg/L	11/05/2014 14:19	25.0	0.768	12.5	387
815080-002	Chloride	mg/L	11/05/2014 15:50	500	17.4	50.0	2440
	Nitrate as Nitrogen	mg/L	11/05/2014 13:22	5.00	0.0415	0.500	2.84
	Sulfate	mg/L	11/05/2014 16:36	100	3.07	50.0	478

Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	500	866	970	11.3	0 - 20

Duplicate — Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	100	487	478	1.87	0 - 20

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Duplicate — Lab ID = 815081-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	1.73	1.72	0.348	0 - 20
Nitrate as Nitrogen	mg/L	5.00	2.37	2.43	2.46	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.82	4.00	95.4	90 - 110
Fluoride	mg/L	1.00	4.02	4.00	101	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.4	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.94	4.00	98.5	90 - 110

Matrix Spike — Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	500	3070	2970(2000)	105	85 - 115

Matrix Spike — Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	100	1530	1480(1000)	105	85 - 115

Matrix Spike — Lab ID = 815081-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	22.1	21.7(20.0)	102	85 - 115
Nitrate as Nitrogen	mg/L	5.00	23.3	22.4(20.0)	104	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.85	4.00	96.2	90 - 110
Fluoride	mg/L	1.00	4.06	4.00	102	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.92	4.00	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.83	3.00	94.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.72	3.00	90.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.98	3.00	99.4	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

Alkalinity by SM 2320B

Batch 1411190

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Alkalinity as CaCO3	mg/L	11/13/2014	1.00	1.68	5.00	220
Bicarbonate (Calculated)	mg/L	11/13/2014	1.00	1.68	5.00	220
Carbonate (Calculated)	mg/L	11/13/2014	1.00	1.68	5.00	ND
815080-002 Alkalinity as CaCO3	mg/L	11/13/2014	1.00	1.68	5.00	157
Bicarbonate (Calculated)	mg/L	11/13/2014	1.00	1.68	5.00	157
Carbonate (Calculated)	mg/L	11/13/2014	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 815090-021

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	130	128	1.55	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	103	100	103	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	100	100	100	90 - 110

Matrix Spike — Lab ID = 815090-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	200	206(100)	94.0	75 - 125

Matrix Spike Duplicate — Lab ID = 815090-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	199	206(100)	93.0	75 - 125

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

Specific Conductivity - EPA 120.1 Batch 1411045

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Specific Conductivity	umhos/cm	11/07/2014	1.00	0.606	2.00	4230
815080-002 Specific Conductivity	umhos/cm	11/07/2014	1.00	0.606	2.00	7990

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 815089-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	67.2	67.3	0.149	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	996	1000	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	996	1000	99.6	90 - 110

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Chrome VI by EPA 218.6

Batch 1411031

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Chromium, Hexavalent	ug/L	11/05/2014 12:09	1.00	0.00600	0.20	4.0
815080-002 Chromium, Hexavalent	ug/L	11/05/2014 12:20	50.0	0.300	10.0	711

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.00	4.01	0.187	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	96.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.14	5.00	103	90 - 110

Matrix Spike

Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.94	9.01(5.00)	98.6	90 - 110

Matrix Spike

Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1440	1460(750)	97.5	90 - 110

Matrix Spike

Lab ID = 815081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.20	1.17(1.00)	102	90 - 110

Matrix Spike

Lab ID = 815081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.96	5.18(5.00)	95.6	90 - 110

Matrix Spike

Lab ID = 815081-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	1170	1180(625)	98.2	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.10	5.00	102	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102	95 - 105

pH by SM 4500-H B

Batch 1411044

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
815080-001 pH	pH	11/04/2014 08:53	1.00	0.0250	4.00	7.59	J
815080-002 pH	pH	11/04/2014 08:55	1.00	0.0250	4.00	7.54	J

Duplicate — Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.62	7.54	1.06	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.05	7.00	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.08	7.00	101	90 - 110

Total Dissolved Solids by SM 2540 C

Batch 1411019

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Total Dissolved Solids	mg/L	11/06/2014	1.00	1.76	125	2500
815080-002 Total Dissolved Solids	mg/L	11/06/2014	1.00	1.76	250	4980

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate — Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	2540	2500	1.39	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	524	500	105	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

Metals by EPA 200.8, Dissolved

Batch 111014A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Chromium	ug/L	11/10/2014 14:51	2.00	0.142	1.0	4.7
815080-002 Chromium	ug/L	11/10/2014 15:49	10.0	0.710	5.0	706

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	2.00	4.51	4.70	4.21	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.524	0.500	105	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	44.5	50.0	89.0	85 - 115

Matrix Spike

Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	2.00	49.5	54.7(50.0)	89.6	75 - 125

Matrix Spike Duplicate

Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	2.00	49.8	54.7(50.0)	90.1	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.6	20.0	98.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	18.6	20.0	93.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.1	20.0	95.5	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.0	20.0	94.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.2	20.0	96.2	80 - 120

Serial Dilution Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	726	706	2.73	0 - 10

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 10 of 16
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

Metals by EPA 200.8, Dissolved

Batch 112514A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Manganese	ug/L	11/25/2014 14:55	2.00	0.120	1.0	67.6
815080-002 Manganese	ug/L	11/25/2014 15:40	1.00	0.0600	0.50	8.6

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Duplicate — Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Manganese	ug/L	2.00	64.9	67.6	4.02	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.536	0.500	107	

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	50.0	50.0	99.9	85 - 115

Matrix Spike — Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	2.00	114	118(50.0)	93.9	75 - 125

Matrix Spike Duplicate — Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	2.00	109	118(50.0)	82.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	19.3	20.0	96.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	19.5	20.0	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	19.0	20.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	19.5	20.0	97.3	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	19.0	20.0	95.2	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	18.5	20.0	92.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	18.9	20.0	94.6	80 - 120

Serial Dilution Lab ID = 815080-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Manganese	ug/L	10.0	67.8	67.6	0.267	0 - 10

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Metals by 200.7, Dissolved

Batch 110614A-Th1

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Calcium	ug/L	11/06/2014 16:26	100	1700	50000	101000
Iron	ug/L	11/06/2014 18:22	1.00	3.00	20.0	ND
Magnesium	ug/L	11/06/2014 17:23	5.00	2340	5000	24000
815080-002 Calcium	ug/L	11/06/2014 16:03	100	1700	50000	208000
Iron	ug/L	11/06/2014 17:58	1.00	3.00	20.0	ND
Magnesium	ug/L	11/06/2014 17:00	10.0	4680	10000	31400

Method Blank

Parameter	Unit	DF	Result
Calcium	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Magnesium	ug/L	1.00	ND

Duplicate

Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Calcium	ug/L	100	214000	208000	2.84	0 - 20
Iron	ug/L	1.00	ND	0	0	0 - 20
Magnesium	ug/L	10.0	30700	31400	2.16	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	1880	2000	94.1	85 - 115
Iron	ug/L	1.00	2190	2000	109	85 - 115
Magnesium	ug/L	1.00	1930	2000	96.6	85 - 115

Matrix Spike

Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Calcium	ug/L	100	396000	408000(200000)	93.8	75 - 125
Iron	ug/L	1.00	1790	2000(2000)	89.5	75 - 125
Magnesium	ug/L	10.0	51600	51400(20000)	101	75 - 125

Matrix Spike Duplicate

Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1770	2000(2000)	88.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	5030	5000	101	95 - 105
Iron	ug/L	1.00	5250	5000	105	95 - 105
Magnesium	ug/L	1.00	4980	5000	99.5	95 - 105

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC Printed 12/1/2014

Metals by 200.7, Dissolved

Batch 111014A-Th1

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815080-001 Sodium	ug/L	11/10/2014 14:19	100	5980	50000	723000
815080-002 Sodium	ug/L	11/10/2014 14:02	500	29900	250000	1350000

Method Blank

Parameter	Unit	DF	Result
Sodium	ug/L	1.00	ND

Duplicate — Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sodium	ug/L	500	1560000	1350000	14.4	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	2140	2000	107	85 - 115

Matrix Spike — Lab ID = 815080-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sodium	ug/L	500	2340000	2350000(10000C	99.1	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	4840	5000	96.7	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	4510	5000	90.3	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	1670	2000	83.3	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	1970	2000	98.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	1620	2000	80.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	1820	2000	91.2	80 - 120

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 1411019
Date Analyzed: 11/6/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	51.4354	51.4354	51.4354	0.0000	No	0.0000	0.0	25.0	ND	1
14K0045-01	100	75.2534	75.2990	75.2990	0.0000	No	0.0456	456.0	25.0	456.0	1
14K0045-02	100	74.8616	74.9073	74.9073	0.0000	No	0.0457	457.0	25.0	457.0	1
14K0083-01	20	28.7488	28.7990	28.7988	0.0002	No	0.0500	2500.0	125.0	2500.0	1
14K0083-02	10	29.3546	29.4044	29.4044	0.0000	No	0.0498	4980.0	250.0	4980.0	1
14K0084-01	10	30.2471	30.2887	30.2887	0.0000	No	0.0416	4160.0	250.0	4160.0	1
14K0084-02	10	28.7550	28.7985	28.7985	0.0000	No	0.0435	4350.0	250.0	4350.0	1
14K0086-9D	100	77.4868	77.5454	77.5454	0.0000	No	0.0586	586.0	25.0	586.0	1
14K0099-01B	100	78.2288	78.2559	78.2555	0.0004	No	0.0267	267.0	25.0	267.0	1
14K0110-01D	100	67.9487	67.9933	67.9931	0.0002	No	0.0444	444.0	25.0	444.0	1
14K0110-02	100	66.7434	66.7880	66.7880	0.0000	No	0.0446	446.0	25.0	446.0	1
14K0083-01 Dup	20	29.3771	29.4278	29.4278	0.0000	No	0.0507	2535.0	125.0	2535.0	1
LCS	100	79.4329	79.4855	79.4853	0.0002	No	0.0524	524.0	25.0	524.0	1
14K0114-01C	100	78.7796	78.8309	78.8305	0.0004	No	0.0509	509.0	25.0	509.0	1
14K0114-02	100	74.5801	74.6312	74.6308	0.0004	No	0.0507	507.0	25.0	507.0	1
14K0114-03	100	79.1415	79.1911	79.1910	0.0001	No	0.0495	495.0	25.0	495.0	1
14K0114-04	100	75.2575	75.3078	75.3074	0.0004	No	0.0499	499.0	25.0	499.0	1
14K0116-04A	100	68.7450	68.8024	68.8022	0.0002	No	0.0572	572.0	25.0	572.0	1
14K0116-04 Dup	100	75.7294	75.7873	75.7872	0.0001	No	0.0578	578.0	25.0	578.0	1

Calculation as follows:

Filterable residue (TDS), mg/L = $\left(\frac{A-B}{C}\right) x\, 10^6$

Where:

A = weight of dish + residue in grams.
B = weight of dish in grams.
C = mL of sample filtered.

RL= reporting limit.
ND = not detected (below the reporting limit)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	524.0	500	**104.8%**	90-110%	**Yes**
LCSD					

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x\, 100$$

P = Percent recovery.
LC = Measured LCS value (ppm).
LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
14K0083-01	0.0500	0.0507	**0.7%**	≤5%	**Yes**
14K0116-04	0.0572	0.0578	**0.5%**	≤5%	**Yes**

Duplicate Determination Difference

$$\%\ Difference = \frac{|A \text{ or } B - C|}{C} x\, 100$$

$$where \quad C = \frac{A+B}{2}$$

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Jenny T.
Analyst Printed Name

Analyst Signature

Maksim G.
Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 1411019
Date Analyzed: 11/6/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
14K0045-01	811	0.56	527.15	0.87
14K0045-02	760	0.60	494	0.93
14K0083-01	4230	0.59	2749.5	0.91
14K0083-02	7990	0.62	5193.5	0.96
14K0084-01	7140	0.58	4641	0.90
14K0084-02	7160	0.61	4654	0.93
14K0086-9D	923	0.63	599.95	0.98
14K0099-01B	393	0.68	255.45	1.05
14K0110-01D	842	0.53	547.3	0.81
14K0110-02	760	0.59	494	0.90
14K0083-01 Dup	4230	0.60	2749.5	0.92
LCS				
14K0114-01C	869	0.59	564.85	0.90
14K0114-02	871	0.58	566.15	0.90
14K0114-03	868	0.57	564.2	0.88
14K0114-04	859	0.58	558.35	0.89
14K0116-04A	904	0.63	587.6	0.97
14K0116-04 Dup	904	0.64	587.6	0.98

TRUESDAIL LABORATORIES, INC.

Alkalinity by SM 2320B
Calculations

Analytical Batch:	1411190
Matrix:	WATER
Date of Analysis:	11/13/2014

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	4.70	50	0.02	0.00	0.0	0.00		0.0	5	ND	ND	ND	ND	
14K0007-17	7.81	50	0.02	0.00	0.0	5.30		106.0	5	106.0	106.0	ND	ND	
14K0007-21	8.01	50	0.02	0.00	0.0	6.40		128.0	5	128.0	128.0	ND	ND	
14K0007-21 DUP	8.03	50	0.02	0.00	0.0	6.50		130.0	5	130.0	130.0	ND	ND	
14K0083-01	8.24	50	0.02	0.00	0.0	11.00		220.0	5	220.0	220.0	ND	ND	
14K0083-02	8.11	50	0.02	0.00	0.0	7.85		157.0	5	157.0	157.0	ND	ND	
14K0084-02	8.39	50	0.02	0.30	6.0	7.55		151.0	5	151.0	139.0	12	ND	
14K0116-06	8.08	50	0.02	0.00	0.0	6.45		129.0	5	129.0	129.0	ND	ND	
14K0007-17 MS	9.70	50	0.02	2.20	44.0	10.00		200.0	5	200.0	112.0	88	ND	
14K0007-17 MSD	9.58	50	0.02	2.15	43.0	9.95		199.0	5	199.0	113.0	86	ND	
LCS	10.66	50	0.02	2.20	44.0	5.15		103.0	5	103.0	15.0	88	ND	
LCSD	10.57	50	0.02	2.10	42.0	5.00		100.0	5	100.0	16.0	84	ND	

Calculations as follows:

T or P = $\left(\frac{A \times N \times 50000}{mL\ sample}\right)$

Low Alkalinity: as mg/L CaCO3 = $\frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$

Where:
T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Where:
B = mL titrant to first recorded pH
C = Total mL titrant to reach pH 0.3 unit lower
N = Normality of standard acid
LCS = Laboratory Control Standard/Duplicate
MS/MSD = Matrix Spike/Duplicate
ND = Not Detected (below the reporting limit)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Accetance Limit	QC Within Control?
LCS	103	100	103.0%	90-110	Yes
LCSD	100	100	100.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
14k0007-	128	130	1.6%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
14K0007-17	106	1	100	100	200	206.00	94%	75-125	Yes	0.3%	≤20%	Yes
	106	1	100	100	199	206.00	93%		Yes			

Alex L.
Analyst Printed Name

Analyst Signature

Maksim Gorbunov
Reviewer Printed Name

Reviewer Signature

1411190

034

815080/ 14K0083

TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714)730-6239 FAX: (714) 730-6462
www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-224]

TURNAROUND TIME 10 Days
DATE 11/04/14 PAGE 1 OF 1

COMPANY: CH2M HILL /E2
PROJECT NAME: PG&E Topock IM3Plant-EW
PHONE: 530-229-3303 FAX: 530-339-3303
ADDRESS: 155 Grand Ave Ste 1000, Oakland, CA 94612
P.O. NUMBER: 428648.IM.CS.EX.AC
SAMPLERS (SIGNATURE

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr, Mn (200.8) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1) Cl,SO4,NO3(300.0)	TDS (160.1), Alk (SM2320B)	Cr(VI) (218.6)	Dis Ca,Mg,Na,Fe (200.7) Lab filtered									NUMBER OF CONTAINERS	COMMENTS
PE-01-224	11/04/14	800	Ground water	X		X	X	X	X									4	pH=6 } 200.8/
TW-03D-224	11/04/14	800	Ground water	X	X	X	X		X									4	pH=6 } 200.7
																		8	TOTAL NUMBER OF CONTAINERS

ALERT !!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Ryan Phelps	CH2MHILL	11-4-14 15:17
Signature (Received)	THANH NGO	TRUESDAIL	11-4-14 15:17
Signature (Relinquished)	THANH NGO		11-4-14 1940
Signature (Received)	Michael Ngo	TLI	11/4/14 19:40
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS
RECEIVED COOL ☑ WARM ☐ 3.8°C °F
CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

071

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/28/14	14J0416-11	8.03	0.5mL / 25mL	9.5	23:23	MK
10/29/14	14J0415-1	7.00	100 ml / 2ml	9.5	7:40	NE
11/05/14	14K0083-01	6.00	2 ml / 100 ml	9.5	7:30	NE
↓	↓ -02	↓	↓	↓	↓	↓
↓	14K0084-01	7.00	2 ml / 100 ml	9.5	7:30	NE
↓	↓ -02	↓	↓	↓	↓	↓

NE
11/06/14

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

TRUESDAIL LABORATORIES, INC.
Metals

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
14T0412-01	>1	>2	11/29/14	TM	Yes			
14J0414(01,-02)	<1	>2	↓	↓	No	10:45	10/30/14 @ 11:00	pH <2
14J0431(1-3)	<1	>2	10/29/14	ES	NO	2:30	↓	↓
14J0438-01	>1	>2	11/30/14	TM	Yes		10/31/14 @ 10:00	pH <2
14J0440(01,-02)	<1	>2			NO	9:55		
(-03,-04,-05,-06)								
(-07)	↓	↓			↓	↓	↓	↓
14J0446-01,-02	>1	<2	↓	↓	Yes			
14J0344	<1	>2	10/23/14	ES	Yes	10:00		pH <2
14J0415-01	<1	>2	11/3/14	ES	Yes	10:00		pH <2
14K0008-01	>1	<2	11/4/14	TM	Yes			
14K0009-01								
14K0018-02								
14K0019-01								
14K0045(01,-02)								
14K0050(01,-02,-03)								
(-04,-05)								
14K0055(01,-02,-03)	↓	↓	↓	↓	↓			
14K0068(1-3)	>1	<2	11/4/14	ES	Yes			
14K0078(01,-02)	<1	>2	11/5/14	TM	NO	10:00	11/6/14 @ 10:00	pH <2
14K0079(01,-02,-03)	↓	↓			↓	↓	↓	↓
14K0080-01	>1	<2			Yes			
14K0084-01	<1	>2				10:00		pH <2
14K0084-02	↓	<2	↓	↓	↓			
14K0012-02	>1	<2	11/5/14	TM	Yes			
14K0013-02								
14K0014-02								
TM 11/5/14 ~~14K0025~~ - 14K0025-01								
14K0026-02	↓	↓	↓	↓	↓			
14K0022-02								
14K0023-02								
14K0024-02	↓	↓	↓	↓	↓			
14K0083-(01-02)	<1	>2	11/5/14	ES	Yes	1:00		Filtered from acidified
14K0084-02	↓	↓	↓	↓	↓	↓	11/7/14 @ 10:00	↓
14K0102(10-12)	<1	>2	11/6/14	ES	NO	11:00	ES 11/7/14	pH <2
14K0116(02-03,05)	↓	↓	↓	↓	↓	↓	↓	↓
14K0028-01	↓	<2			Yes			
14K0029-01	>1							
14K0067-02	<1							
14K0075-01	↓							
14K0110-01	>1							
14K0110-02	>1							
14K0120-01	↓	↓	↓	↓	↓			
14K0007-24	<1	>2	11/6/14	ES	NO	5:00	11/7/14 @ 10	pH <2

Notes:
1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.
2. All Total Recoverable Analytes must be pH adjusted and digested.
3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.

WORK ORDER

Printed: 11/20/2014 4:44:41PM

14K0083

Truesdail Laboratories, Inc

Client: E2 Consulting Engineers, Inc.
Project: Topock IM3Plant-EW

Project Manager: Sean Condon
Project Number: PGE-2152

Report To:
E2 Consulting Engineers, Inc.
Christi Gitlin
1900 Powell Street, Suite 250
Emeryville, CA 94608
Phone: 510-428-4728
Fax: 510-652-5604

Invoice To:
E2 Consulting Engineers, Inc.
Christi Gitlin
1900 Powell Street, Suite 250
Emeryville, CA 94608
Phone :510-428-4728
Fax: 510-652-5604

Date Due: 11/14/2014 16:30 (7 day TAT)

Received By: Michael Ngo
Date Received: 11/04/2014 19:40

Logged In By: Luda Shabunina
Date Logged In: 11/05/2014 07:13

Samples Received at: **3.8°C**

Chain of Custody re	Yes	Samples intact?	Yes
Letter (if sent) mate	No	Custody seals (if an	No
Requested analyses	Yes	Analyses within hol	Yes
Samples received in	Yes		

Analysis	Due	TAT	Expires	Comments
14K0083-01 PE-01-224 [Water] Sampled 11/04/2014 08:00 (GMT-08:00) Pacific Time (US &				
TDS	11/14/2014 12:00	7	11/11/2014 08:00	
Ca-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Cr VI-218.6	11/14/2014 12:00	7	12/02/2014 08:00	
Cr-200.8-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Fe-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
IC-Cl	11/14/2014 12:00	7	12/02/2014 08:00	
IC-NO3	11/14/2014 12:00	7	11/06/2014 08:00	
IC-SO4	11/14/2014 12:00	7	12/02/2014 08:00	
Mg-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Mn-200.8-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Na-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
pH	11/14/2014 12:00	7	11/05/2014 08:00	
Alkalinity	11/14/2014 12:00	7	11/18/2014 08:00	
Specific Conductivity	11/14/2014 12:00	7	12/02/2014 08:00	

WORK ORDER

Printed: 11/20/2014 4:44:41PM

14K0083

Truesdail Laboratories, Inc

Client: E2 Consulting Engineers, Inc.
Project: Topock IM3Plant-EW
Project Manager: Sean Condon
Project Number: PGE-2152

Analysis	Due	TAT	Expires	Comments
14K0083-02 TW-03D-224 [Water] Sampled 11/04/2014 08:00 (GMT-08:00) Pacific Time (US &				
TDS	11/14/2014 12:00	7	11/11/2014 08:00	
Ca-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Cr VI-218.6	11/14/2014 12:00	7	12/02/2014 08:00	
Cr-200.8-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Fe-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
IC-Cl	11/14/2014 12:00	7	12/02/2014 08:00	
IC-NO3	11/14/2014 12:00	7	11/06/2014 08:00	
IC-SO4	11/14/2014 12:00	7	12/02/2014 08:00	
Mg-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Mn-200.8-diss	11/14/2014 12:00	7	05/03/2015 08:00	
Na-200.7-diss	11/14/2014 12:00	7	05/03/2015 08:00	
pH	11/14/2014 12:00	7	11/05/2014 08:00	
Specific Conductivity	11/14/2014 12:00	7	12/02/2014 08:00	
Alkalinity	11/14/2014 12:00	7	11/18/2014 08:00	

Reviewed By

11/20/14
Date

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING
Established 1931
14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

January 5, 2015

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-225, GROUNDWATER MONITORING PROJECT, TLI NO.: 815098

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-225 groundwater-monitoring project. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on December 2, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Samples were analyzed and recorded in the raw data as SDG 14L0070 but are reported as SDG 815098 in all final report pages.

Samples for pH analysis by SM 4500-H B were received past the method specified holding time. Mr. Duffy approved the analysis of the samples.

Sample TW-03D-225 for Hexavalent Chromium was analyzed by method EPA 218.6 rather than SW 3500-Cr B as requested on the COC.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Sean Condon
Project Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING
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(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 652547.01.IM.OP.00

Laboratory No.: 815098
Date: January 5, 2015
Collected: December 2, 2014
Received: December 2, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 4500-H B	pH	Jennine Ta
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Alex Luna
EPA 300.0	Anions	Giawad Ghenniwa
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Tom Martinez
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING

Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 815098
Date Received: December 2, 2014

Project Name: PG&E Topock Project
Project No.: 652547.01.IM.OP.00
P.O. No.: 10381-7-102011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
815098-001	PE-01-225	E120.1	NONE	12/2/2014	13:54	EC	4230	umhos/cm	2.00
815098-001	PE-01-225	E200.7	LABFLT	12/2/2014	13:54	Calcium	108000	ug/L	50000
815098-001	PE-01-225	E200.7	LABFLT	12/2/2014	13:54	Iron	34.0	ug/L	20.0
815098-001	PE-01-225	E200.7	LABFLT	12/2/2014	13:54	Magnesium	24700	ug/L	5000
815098-001	PE-01-225	E200.7	LABFLT	12/2/2014	13:54	Sodium	794000	ug/L	50000
815098-001	PE-01-225	E200.8	LABFLT	12/2/2014	13:54	Chromium	4.9	ug/L	1.0
815098-001	PE-01-225	E200.8	LABFLT	12/2/2014	13:54	Manganese	68.4	ug/L	0.50
815098-001	PE-01-225	E218.6	LABFLT	12/2/2014	13:54	Chromium, Hexavalent	4.2	ug/L	0.20
815098-001	PE-01-225	E300	NONE	12/2/2014	13:54	Chloride	1040	mg/L	50.0
815098-001	PE-01-225	E300	NONE	12/2/2014	13:54	Nitrate as N	ND	mg/L	0.500
815098-001	PE-01-225	E300	NONE	12/2/2014	13:54	Sulfate	385	mg/L	12.5
815098-001	PE-01-225	SM2320B	NONE	12/2/2014	13:54	Alkalinity	227	mg/L	5.00
815098-001	PE-01-225	SM2320B	NONE	12/2/2014	13:54	Alkalinity, Bicarbonate (As CaCO3)	227	mg/L	5.00
815098-001	PE-01-225	SM2320B	NONE	12/2/2014	13:54	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
815098-001	PE-01-225	SM2540C	NONE	12/2/2014	13:54	Total Dissolved Solids	2560	mg/L	125
815098-001	PE-01-225	SM4500HB	NONE	12/2/2014	13:54	PH	7.60 J	pH	1.68

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
815098-002	TW-03D-225	E120.1	NONE	12/2/2014	13:54	EC	8110	umhos/cm	2.00
815098-002	TW-03D-225	E200.7	LABFLT	12/2/2014	13:54	Calcium	212000	ug/L	50000
815098-002	TW-03D-225	E200.7	LABFLT	12/2/2014	13:54	Iron	ND	ug/L	20.0
815098-002	TW-03D-225	E200.7	LABFLT	12/2/2014	13:54	Magnesium	34600	ug/L	10000
815098-002	TW-03D-225	E200.7	LABFLT	12/2/2014	13:54	Sodium	1580000	ug/L	250000
815098-002	TW-03D-225	E200.8	LABFLT	12/2/2014	13:54	Chromium	757	ug/L	2.0
815098-002	TW-03D-225	E200.8	LABFLT	12/2/2014	13:54	Manganese	9.4	ug/L	0.50
815098-002	TW-03D-225	E218.6	LABFLT	12/2/2014	13:54	Chromium, Hexavalent	733	ug/L	10.0
815098-002	TW-03D-225	E300	NONE	12/2/2014	13:54	Chloride	2440	mg/L	50.0
815098-002	TW-03D-225	E300	NONE	12/2/2014	13:54	Nitrate as N	3.26	mg/L	0.500
815098-002	TW-03D-225	E300	NONE	12/2/2014	13:54	Sulfate	547	mg/L	12.5
815098-002	TW-03D-225	SM2320B	NONE	12/2/2014	13:54	Alkalinity	143	mg/L	5.00
815098-002	TW-03D-225	SM2320B	NONE	12/2/2014	13:54	Alkalinity, Bicarbonate (As CaCO3)	143	mg/L	5.00
815098-002	TW-03D-225	SM2320B	NONE	12/2/2014	13:54	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
815098-002	TW-03D-225	SM2540C	NONE	12/2/2014	13:54	Total Dissolved Solids	4810	mg/L	250
815098-002	TW-03D-225	SM4500HB	NONE	12/2/2014	13:54	PH	7.56 J	pH	1.68

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:

Results below 0.01 will have two (2) significant figures.

Result above or equal to 0.01 will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

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TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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TUSTIN, CALIFORNIA 92780-7008
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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 652547.01.IM.OP.00
P.O. Number: 10381-7-102011
Release Number:

Laboratory No. 815098

Printed 1/5/2015

Samples Received on 12/2/2014 7:25:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-225	815098-001	12/02/2014 13:54	Water
TW-03D-225	815098-002	12/02/2014 13:54	Water

Anions By I.C. - EPA 300.0

Batch 1412141

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Nitrate as Nitrogen	mg/L	12/03/2014 12:24	5.00	0.0415	0.500	ND
815098-002 Nitrate as Nitrogen	mg/L	12/03/2014 12:35	5.00	0.0415	0.500	3.26

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 815111-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	ND	0.280	0	0 - 20

Duplicate — Lab ID = 815112-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	1.49	1.50	0.535	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.14	4.00	104	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.97	4.00	99.3	90 - 110

Matrix Spike — Lab ID = 815111-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.26	2.28(2.00)	99.2	85 - 115

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 652547.01.IM.OP.00 Printed 1/5/2015

Anions By I.C. - EPA 300.0

Batch 1412177

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Chloride	mg/L	12/03/2014 23:19	500	17.4	50.0	1040
Sulfate	mg/L	12/03/2014 23:31	25.0	0.768	12.5	385
815098-002 Chloride	mg/L	12/03/2014 23:42	500	17.4	50.0	2440
Sulfate	mg/L	12/03/2014 23:54	25.0	0.768	12.5	547

Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND

Duplicate — Lab ID = 815113-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	50.0	135	140	3.35	0 - 20

Duplicate — Lab ID = 815114-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	5.00	46.2	46.1	0.228	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	4.04	4.00	101	90 - 110
Sulfate	mg/L	1.00	20.1	20.0	100	90 - 110

Matrix Spike — Lab ID = 815113-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	50.0	341	340(200)	100	85 - 115

Matrix Spike — Lab ID = 815114-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	5.00	149	146(100)	103	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.97	4.00	99.2	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.96	3.00	98.8	90 - 110

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Alkalinity by SM 2320B

Batch 1412276

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Alkalinity as CaCO3	mg/L	12/11/2014	1.00	1.68	5.00	227
Bicarbonate (Calculated)	mg/L	12/11/2014	1.00	1.68	5.00	227
Carbonate (Calculated)	mg/L	12/11/2014	1.00	1.68	5.00	ND
815098-002 Alkalinity as CaCO3	mg/L	12/11/2014	1.00	1.68	5.00	143
Bicarbonate (Calculated)	mg/L	12/11/2014	1.00	1.68	5.00	143
Carbonate (Calculated)	mg/L	12/11/2014	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 815110-017

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	114	111	2.67	20 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100	99.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	100	100	100	90 - 110

Matrix Spike — Lab ID = 815110-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	220	229(100)	91.0	75 - 125

Matrix Spike Duplicate — Lab ID = 815110-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	215	229(100)	86.0	75 - 125

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 652547.01.IM.OP.00 Printed 1/5/2015

Specific Conductivity - EPA 120.1

Batch 1412032

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Specific Conductivity	umhos/cm	12/03/2014	1.00	0.606	2.00	4230
815098-002 Specific Conductivity	umhos/cm	12/03/2014	1.00	0.606	2.00	8110

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 815108-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	36.6	36.1	1.38	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	993	1000	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	993	1000	99.3	90 - 110

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Chrome VI by EPA 218.6

Batch 1412120

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Chromium, Hexavalent	ug/L	12/05/2014 13:34	1.00	0.00600	0.20	4.2
815098-002 Chromium, Hexavalent	ug/L	12/05/2014 12:53	50.0	0.300	10.0	733

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate — Lab ID = 815098-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.22	4.25	0.580	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.221	0.200	110	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.10	5.00	102	90 - 110

Matrix Spike — Lab ID = 815098-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.25(5.00)	102	90 - 110

Matrix Spike — Lab ID = 815098-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1500	1480(750)	102	90 - 110

Matrix Spike — Lab ID = 815099-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.25	1.20(1.00)	105	90 - 110

Matrix Spike — Lab ID = 815099-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.31	5.20(5.00)	102	90 - 110

Matrix Spike — Lab ID = 815099-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	1210	1210(625)	100	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.13	5.00	102	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.95	10.0	99.5	95 - 105

pH by SM 4500-H B

Batch 1412099

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
815098-001 pH	pH	12/03/2014 08:40	1.00	0.0250	1.68	7.60	J
815098-002 pH	pH	12/03/2014 08:42	1.00	0.0250	1.68	7.56	J

Duplicate — Lab ID = 815107-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	1.85	1.83	1.09	

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.02	7.00	100	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	6.99	7.00	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	6.95	7.00	99.3	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 652547.01.IM.OP.00 Printed 1/5/2015

Total Dissolved Solids by SM 2540 C Batch 1412075

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Total Dissolved Solids	mg/L	12/04/2014	1.00	1.76	125	2560
815098-002 Total Dissolved Solids	mg/L	12/04/2014	1.00	1.76	250	4810

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate Lab ID = 815109-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	516	510	1.17	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	496	500	99.2	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 652547.01.IM.OP.00 Printed 1/5/2015

Metals by EPA 200.8, Dissolved

Batch 120414A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Chromium	ug/L	12/04/2014 16:20	1.00	0.0710	1.0	4.9
Manganese	ug/L	12/04/2014 17:25	2.00	0.120	0.50	68.4
815098-002 Chromium	ug/L	12/04/2014 16:53	10.0	0.710	2.0	757
Manganese	ug/L	12/04/2014 16:46	1.00	0.0600	0.50	9.4

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate — Lab ID = 815098-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	1.00	4.54	4.89	7.34	0 - 20
Manganese	ug/L	2.00	65.5	68.4	4.36	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.177	0.200	88.5	70 - 130
Manganese	ug/L	1.00	0.179	0.200	89.5	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.7	85 - 115
Manganese	ug/L	1.00	50.7	50.0	101	85 - 115

Matrix Spike — Lab ID = 815098-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	56.4	54.9(50.0)	103	75 - 125
Manganese	ug/L	2.00	113	118(50.0)	88.9	75 - 125

Matrix Spike Duplicate — Lab ID = 815098-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	55.1	54.9(50.0)	100	75 - 125
Manganese	ug/L	2.00	115	118(50.0)	93.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.9	20.0	99.5	90 - 110
Manganese	ug/L	1.00	20.0	20.0	100.	90 - 110

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Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.7	20.0	98.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.7	20.0	98.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	20.0	20.0	99.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	20.0	20.0	99.8	80 - 120

Serial Dilution Lab ID = 815098-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Manganese	ug/L	10.0	69.6	68.4	1.73	0 - 10

Serial Dilution Lab ID = 815098-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	780	757	2.99	0 - 10

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Metals by 200.7, Dissolved

Batch 120514A-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
815098-001 Calcium	ug/L	12/05/2014 16:07	100	1700	50000	108000
Iron	ug/L	12/05/2014 18:10	1.00	3.00	20.0	34.0
Magnesium	ug/L	12/05/2014 17:31	5.00	2340	5000	24700
Sodium	ug/L	12/05/2014 16:07	100	5980	50000	794000
815098-002 Calcium	ug/L	12/05/2014 16:33	100	1700	50000	212000
Iron	ug/L	12/05/2014 17:49	1.00	3.00	20.0	ND
Magnesium	ug/L	12/05/2014 17:11	10.0	4680	10000	34600
Sodium	ug/L	12/05/2014 15:43	500	29900	250000	1580000

Method Blank

Parameter	Unit	DF	Result
Calcium	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Sodium	ug/L	1.00	ND
Magnesium	ug/L	1.00	ND

Duplicate

Lab ID = 815098-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Calcium	ug/L	100	232000	212000	9.22	0 - 20
Iron	ug/L	1.00	ND	0	0	0 - 20
Sodium	ug/L	500	1630000	1580000	3.36	0 - 20
Magnesium	ug/L	10.0	33100	34600	4.37	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	2010	2000	100	85 - 115
Iron	ug/L	1.00	2010	2000	101	85 - 115
Sodium	ug/L	1.00	1910	2000	95.5	85 - 115
Magnesium	ug/L	1.00	1980	2000	99.0	85 - 115

Matrix Spike

Lab ID = 815098-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Calcium	ug/L	100	442000	412000(200000)	115	75 - 125
Iron	ug/L	1.00	1760	2000(2000)	88.2	75 - 125
Sodium	ug/L	500	2380000	2580000(10000C	79.6	75 - 125
Magnesium	ug/L	10.0	52300	54600(20000)	88.6	75 - 125

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Matrix Spike Duplicate Lab ID = 815098-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1870	2000(2000)	93.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4960	5000	99.2	95 - 105
Iron	ug/L	1.00	5160	5000	103	95 - 105
Sodium	ug/L	1.00	4830	5000	96.7	95 - 105
Magnesium	ug/L	1.00	5220	5000	104	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4770	5000	95.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4780	5000	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	5060	5000	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	5020	5000	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4710	5000	94.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4740	5000	94.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4850	5000	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5150	5000	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5080	5000	102	90 - 110

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Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2150	2000	107	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	1840	2000	92.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	1880	2000	94.0	80 - 120
Magnesium	ug/L	1.00	1990	2000	99.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Magnesium	ug/L	1.00	1970	2000	98.6	80 - 120

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Sean Condon
Project Manager

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Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 1412075
Date Analyzed: 12/4/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	110.7251	110.7251	110.7251	0.0000	No	0.0000	0.0	25.0	ND	1
14L0056-01E	200	110.3605	110.3883	110.3881	0.0002	No	0.0276	138.0	12.5	138.0	1
14L0056-02	200	112.8592	112.8700	112.8700	0.0000	No	0.0108	54.0	12.5	54.0	1
14L0066-09C	100	75.2556	75.3135	75.3133	0.0002	No	0.0577	577.0	25.0	577.0	1
14L0070-01B	20	28.9669	29.0184	29.0180	0.0004	No	0.0511	2555.0	125.0	2555.0	1
14L0070-02	10	29.3768	29.4250	29.4249	0.0001	No	0.0481	4810.0	250.0	4810.0	1
14L0071-01D	10	30.2464	30.2905	30.2903	0.0002	No	0.0439	4390.0	250.0	4390.0	1
14L0071-02	10	28.8159	28.8603	28.8600	0.0003	No	0.0441	4410.0	250.0	4410.0	1
14L0116-01C	100	75.7255	75.7781	75.7781	0.0000	No	0.0526	526.0	25.0	526.0	1
14L0116-02	100	67.9468	67.9997	67.9995	0.0002	No	0.0527	527.0	25.0	527.0	1
14L0116-03	100	78.7781	78.8293	78.8291	0.0002	No	0.0510	510.0	25.0	510.0	1
14L0116-03 Dup	100	75.2521	75.3040	75.3037	0.0003	No	0.0516	516.0	25.0	516.0	1
LCS	100	78.2284	78.2782	78.2780	0.0002	No	0.0496	496.0	25.0	496.0	1
14L0116-04	100	66.7353	66.7882	66.7879	0.0003	No	0.0526	526.0	25.0	526.0	1
14L0119-01D	100	66.7703	66.8125	66.8125	0.0000	No	0.0422	422.0	25.0	422.0	1
14L0119-02	100	74.6235	74.6636	74.6635	0.0001	No	0.0400	400.0	25.0	400.0	1
14L0136-01B	100	75.7497	75.7735	75.7733	0.0002	No	0.0236	236.0	25.0	236.0	1
14L0142-01B	200	122.3281	122.3400	122.3396	0.0004	No	0.0115	57.5	12.5	57.5	1
14L0142-02	200	112.9989	113.0109	113.0109	0.0000	No	0.0120	60.0	12.5	60.0	1
14L0006-02A	100	70.3637	70.3873	70.3873	0.0000	No	0.0236	236.0	25.0	236.0	1
14L0006-04	100	67.7961	67.8411	67.8411	0.0000	No	0.0450	450.0	25.0	450.0	1
14L0136-01 Dup	100	69.7346	69.7597	69.7597	0.0000	No	0.0251	251.0	25.0	251.0	1

Calculation as follows:

Filterable residue (TDS), mg/L = $\left(\frac{A-B}{C}\right) x\, 10^6$

Where:

A = weight of dish + residue in grams.
B = weight of dish in grams.
C = mL of sample filtered.

RL= reporting limit.
ND = not detected (below the reporting limit)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	496.0	500	99.2%	90-110%	Yes
LCSD					

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x\, 100$$

P = Percent recovery.
LC= Measured LCS value (ppm).
LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
14L0116-03	0.0510	0.0516	0.6%	≤5%	Yes
14L0136-01	0.0236	0.0251	3.1%	≤5%	Yes

Duplicate Determination Difference

$$\%\,Difference = \frac{|A \text{ or } B - C|}{C} x\, 100$$

$$where \quad C = \frac{A+B}{2}$$

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Jenny T.
Analyst Printed Name

Analyst Signature

Maksim G.
Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 1412075
Date Analyzed: 12/4/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
14L0056-01E	151	0.91	98.15	1.41
14L0056-02	72.5	0.74	47.125	1.15
14L0066-09C	912	0.63	592.8	0.97
14L0070-01B	4230	0.60	2749.5	0.93
14L0070-02	8110	0.59	5271.5	0.91
14L0071-01D	7300	0.60	4745	0.93
14L0071-02	7300	0.60	4745	0.93
14L0116-01C	939	0.56	610.35	0.86
14L0116-02	932	0.57	605.8	0.87
14L0116-03	929	0.55	603.85	0.84
14L0116-03 Dup	929	0.56	603.85	0.85
LCS				
14L0116-04	929	0.57	603.85	0.87
14L0119-01D	782	0.54	508.3	0.83
14L0119-02	744	0.54	483.6	0.83
14L0136-01B	374	0.63	243.1	0.97
14L0142-01B	72	0.80	46.8	1.23
14L0142-02	70	0.86	45.5	1.32
14L0006-02A	422	0.56	274.3	0.86
14L0006-04	750	0.60	487.5	0.92
14L0136-01 Dup	374	0.67	243.1	1.03

TRUESDAIL LABORATORIES, INC.

Alkalinity by SM 2320B
Calculations

Analytical Batch:	1412276
Matrix:	WATER
Date of Analysis:	12/11/2014

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	4.87	50	0.02	0.00	0.0	0.00		0.0	5	ND	ND	ND	ND	
14L0070-01	7.97	50	0.02	0.00	0.0	11.35		227.0	5	227.0	227.0	ND	ND	
14L0070-02	8.03	50	0.02	0.00	0.0	7.15		143.0	5	143.0	143.0	ND	ND	
14L0071-02	7.90	50	0.02	0.00	0.0	8.10		162.0	5	162.0	162.0	ND	ND	
14L0085-17	7.60	50	0.02	0.00	0.0	5.55		111.0	5	111.0	111.0	ND	ND	
14L0085-17 DUP	7.57	50	0.02	0.00	0.0	5.70		114.0	5	114.0	114.0	ND	ND	
14L0085-21	8.26	50	0.02	0.00	0.0	6.45		129.0	5	129.0	129.0	ND	ND	
14L0195-01	8.67	50	0.02	1.25	25.0	13.70		274.0	5	274.0	224.0	50	ND	
14L0227-20	8.20	50	0.02	0.00	0.0	6.70		134.0	5	134.0	134.0	ND	ND	
14L0263-05	8.27	50	0.02	0.00	0.0	6.85		137.0	5	137.0	137.0	ND	ND	
14L0085-21 MS	9.72	50	0.02	2.50	50.0	11.00		220.0	5	220.0	120.0	100	ND	
14L0085-21 MSD	9.57	50	0.02	2.35	47.0	10.75		215.0	5	215.0	121.0	94	ND	
LCS	10.60	50	0.02	2.20	44.0	4.95		99.0	5	99.0	11.0	88	ND	
LCSD	10.60	50	0.02	2.20	44.0	5.00		100.0	5	100.0	12.0	88	ND	

Calculations as follows:

T or P = $\left(\frac{A \times N \times 50000}{mL\ sample}\right)$

Where:

T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Low Alkalinity: as mg/L CaCO3 = $\frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$

Where:
B = mL titrant to first recorded pH
C = Total mL titrant to reach pH 0.3 unit lower
N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate
MS/MSD = Matrix Spike/Duplicate
ND = Not Detected (below the reporting limit)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Accetance Limit	QC Within Control?
LCS	99	100	99.0%	90-110	Yes
LCSD	100	100	100.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
14L0085-	111	114	2.7%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
14L0085-21	129	1	100	100	220	229.00	91%	75-125	Yes	1.1%	≤20%	Yes
	129	1	100	100	215	229.00	86%		Yes			

Alex L.		Maksim Gorbunov	
Analyst Printed Name	Analyst Signature	Reviewer Printed Name	Reviewer Signature

1412276

036

915099/ 141 0070

TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714)730-6239 FAX: (714) 730-6462
www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-225]

TURNAROUND TIME 10 Days
DATE 12/02/14 PAGE 1 OF 1

COMPANY: CH2M HILL /E2
PROJECT NAME: PG&E Topock IM3Plant-EW
PHONE: 530-229-3303 FAX: 530-339-3303
ADDRESS: 155 Grand Ave Ste 1000, Oakland, CA 94612
P.O. NUMBER: 652547.01.IM.OP.00
SAMPLERS (SIGNATURE

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr, Mn (200.8) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1) Cl,SO4,NO3(300.0)	TDS (160.1), Alk (SM2320B)	Cr(VI) (218.6)	Dis Ca,Mg,Na,Fe (200.7) Lab filtered									NUMBER OF CONTAINERS	COMMENTS
PE-01-225	12/02/14	13:54	Ground water	X		X	X	X	X									4	pH=6 } 200.9/ 200.7
TW-03D-225	12/02/14	13:54	Ground water	X	X	X	X		X									4	pH=6 } 200.9/ 200.7
																		8	TOTAL NUMBER OF CONTAINERS

ALERT !!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	GEORGE GLORIA	E-2	12-02-14 14:16
Signature (Received)	THANH NGO	TRUESDAIL	12-2-14 1415
Signature (Relinquished)	THANH NGO		12-2-14 1925
Signature (Received)		TLE	12-2-14 1925
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 4.19 °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

072

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/28/14	14J0416-11	8.03	0.5mL / 25mL	9.5	23:23	MK
10/29/14	14J0415-1 MK	7.00	100 ml / 2ml	9.5	7:40	NE
11/05/14	14K0083-01	6.00	2 ml / 100 ml	9.5	7:30	NE
↓	↓ -02	↓	↓	↓	↓	↓
↓	14K0084-01	7.00	2 ml / 100 ml	9.5	7:30	NE
↓	↓ -02	↓	↓	↓	↓	↓
11/13/14	14K0224-01	6:00	2ml / 100 ml	9.5	7:10	NE
11/14/14	14H0004-1	7.00	25ml / .5ml	9.5	7:00	NE
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
11/19/14	14K0329-01	6:00	2ml / 100 ml	9.5	7:15	NE
11/19/14	14K0288-01	7.00	.5ml / 25ml	9.5	7:30	NE
↓	↓ -02	↓	↓	↓	↓	↓
11/24/14	14K0384-01	7.00	.5ml / 25ml	9.5	8:00	NE
↓	-02	↓	↓	↓	↓	↓
~~11/26/14~~	~~14K0413~~					NE
11/26/14	14K0413-01	6:00	2ml / 100 ml	9.5	7:30	NE
12/3/14	14L0070-01	6.00	2ml / 100 ml	9.5	8:00	NE
↓	↓ -02	↓	↓	↓	↓	↓
↓	14L0071-01	↓	↓	↓	↓	↓
↓	↓ -02	↓	↓	↓	↓	↓
12/10/14	14L0250-1	6.00	2ml / 100 ml	9.5	7:40	NE

NE
12/12/14

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

TRUESDAIL LABORATORIES, INC.
Metals

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
14L0058 (01-02)	>1	<2	12/2/14	ES	Yes			
14L0059 (01-04)	↓	↓	↓	↓	↓			
14L0013-01	<1	<2	12/2/14	ES	Yes			
14L0017-02	>1	<2	12/3/14	TM	Yes			
14L0065-06	>1	<2	↓	↓	Yes			
14L0074-01,-02	<1	>2	↓	TM	NO	10:05		
14L0073-01	>1	>2	↓	↓	yes			
14L0076-01	<1	>2	↓	↓	NO	10:05		
14L0070-01-02	<1	>2	↓	↓	yes			
14L0071-01,-02	<1	>2	↓	↓	↓			
14L0077-01,-02,-03,-04	>1	<2	↓	↓	↓			
14L0079-01	>1	<2	↓	↓	↓			
14L0060-(01-04)	>1	<2	12/3/14	ES	Yes			
14L0069-01	>1	<2	12/3/14	TM	Yes			
14L0079(01-07-08)	>1	<2	↓	↓	↓			
14L0070 (01-02)	<1	>2	12/3/14	ES	Yes	12:00		Filtered then acidify
14L0071-02	↓	↓	↓	↓	↓	↓		↓
14L0016-02	<1	12/4/14 ES ~~>2~~ <2	12/4/14	ES	Yes			
14L0083 (01-11)	>1	~~>2~~			Yes			
14L0099-01	<1	<2						
14L0119-01	>1							
-02	<1							
14L0127-01								
128-01								
129-01	↓	↓	↓	↓	↓			
14L0094 (01-06)	<1	>2	↓	↓	NO	9:30		
14L0132 (-01-04)	>1	<1	12/4/14	TM	yes			
14L0134-01,-02,-03	↓	↓	↓	↓	↓			
14L0137-10,-11,-12	<1	>2	↓	↓	NO	11:00		
14L0111-02	<1	>2	12/5/14	ES	Yes			
14L0112-01								
14L0113-01								
14L0115-02	↓							
14L0138 (01-04)	>1							
14L0144 (01-07)								
14L0146 (01)								
14L0147 (01-02)								
14L0148 (01-03)								
14L0150 (01-02)								
14L0162-01	<1							
14L0163-01	↓	↓	↓	↓	↓			
14L0016 (01-02,04)	<1	>2	12/5/14	ES	NO	5:00		
14L0007 (01-04)	↓	↓	↓	↓	↓	↓		
14L0085 (17,24)	↓	↓	↓	↓	↓	↓		

Notes:
1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.
2. All Total Recoverable Analytes must be pH adjusted and digested.
3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.

WORK ORDER

Printed: 12/5/2014 4:18:41PM

14L0070

Truesdail Laboratories, Inc

Client: E2 Consulting Engineers, Inc.
Project: Topock IM3Plant-EW

Project Manager: Sean Condon
Project Number: PGE-2152

Report To:
E2 Consulting Engineers, Inc.
Christi Gitlin
1900 Powell Street, Suite 250
Emeryville, CA 94608
Phone: 510-428-4728
Fax: 510-652-5604

Invoice To:
E2 Consulting Engineers, Inc.
Christy Gitlin
1900 Powell Street, Suite 250
Emeryville, CA 94608
Phone :510-428-4728
Fax: 510-652-5604

Date Due: 12/12/2014 16:30 (7 day TAT)

Received By: Leo Brady
Date Received: 12/02/2014 19:25

Logged In By: Luda Shabunina
Date Logged In: 12/03/2014 07:17

Samples Received at: 4.1°C

Chain of Custody re	Yes	Samples intact?	Yes
Letter (if sent) matc	No	Custody seals (if an	No
Requested analyses	Yes	Analyses within hol	Yes
Samples received in	Yes		

Analysis	Due	TAT	Expires	Comments
14L0070-01 PE-01-225 [Water] Sampled 12/02/2014 13:54 (GMT-08:00) Pacific Time (US &				
TDS	12/12/2014 12:00	7	12/09/2014 13:54	
Ca-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Cr VI-218.6	12/12/2014 12:00	7	12/30/2014 13:54	
Cr-200.8-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Fe-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
IC-Cl	12/12/2014 12:00	7	12/30/2014 13:54	
IC-NO3	12/12/2014 12:00	7	12/04/2014 13:54	
IC-SO4	12/12/2014 12:00	7	12/30/2014 13:54	
Mg-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Mn-200.8-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Na-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
pH	12/12/2014 12:00	7	12/03/2014 13:54	
Alkalinity	12/12/2014 12:00	7	12/16/2014 13:54	
Specific Conductivity	12/12/2014 12:00	7	12/30/2014 13:54	

14L0070

Truesdail Laboratories, Inc

Client: E2 Consulting Engineers, Inc.
Project: Topock IM3Plant-EW
Project Manager: Sean Condon
Project Number: PGE-2152

Analysis	Due	TAT	Expires	Comments
14L0070-02 TW-03D-225 [Water] Sampled 12/02/2014 13:54 (GMT-08:00) Pacific Time (US &				
TDS	12/12/2014 12:00	7	12/09/2014 13:54	
Ca-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Cr VI-218.6	12/12/2014 12:00	7	12/30/2014 13:54	
Cr-200.8-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Fe-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
IC-Cl	12/12/2014 12:00	7	12/30/2014 13:54	
IC-NO3	12/12/2014 12:00	7	12/04/2014 13:54	
IC-SO4	12/12/2014 12:00	7	12/30/2014 13:54	
Mg-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Mn-200.8-diss	12/12/2014 12:00	7	05/31/2015 13:54	
Na-200.7-diss	12/12/2014 12:00	7	05/31/2015 13:54	
pH	12/12/2014 12:00	7	12/03/2014 13:54	
Specific Conductivity	12/12/2014 12:00	7	12/30/2014 13:54	
Alkalinity	12/12/2014 12:00	7	12/16/2014 13:54	

Reviewed By

12/5/14
Date

November 25, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013831

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 06, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *25-Nov-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013831

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen and Deuterium were subcontracted to Zymax- Escondido,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N013831-002, N013831-009, N013831-012, N013831-018, N013831-031 and N013831-032 due to matrix spike not meeting peak retention time criteria possibly due to matrix interference. Matrix spike was analyzed with dilution and retention time met method criteria. Sample was reported at dilution that meet matrix spike peak retention time criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary for samples N013831-002, N013831-008, N013831-009, N013831-012, N013831-018 and N013831-032 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium and Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
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acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N013831-002, N013831-003, N013831-009, N013831-018 and N013831-032 due to failed Internal Standard when samples were analyzed at no dilution.

Because the results for total dissolved chromium (2.847 ug/L) and hexavalent chromium (0.3467 ug/L) for sample N013831-028 (MW-42-055-200) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.054 and 2.667 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (15.15 ug/L) and hexavalent chromium (1.1535 ug/L) for sample N013831-032 (MW-71-035-200) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 12.303 and 11.422 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

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Date: *25-Nov-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013831
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013831-001A	MW-125-200	Water	11/4/2014 8:30:00 AM	11/6/2014	11/25/2014
N013831-001B	MW-125-200	Water	11/4/2014 8:30:00 AM	11/6/2014	11/25/2014
N013831-001C	MW-125-200	Water	11/4/2014 8:30:00 AM	11/6/2014	11/25/2014
N013831-001D	MW-125-200	Water	11/4/2014 8:30:00 AM	11/6/2014	11/25/2014
N013831-001E	MW-125-200	Water	11/4/2014 8:30:00 AM	11/6/2014	11/25/2014
N013831-002A	MW-129-200	Water	11/4/2014 8:00:00 AM	11/6/2014	11/25/2014
N013831-002B	MW-129-200	Water	11/4/2014 8:00:00 AM	11/6/2014	11/25/2014
N013831-002C	MW-129-200	Water	11/4/2014 8:00:00 AM	11/6/2014	11/25/2014
N013831-002D	MW-129-200	Water	11/4/2014 8:00:00 AM	11/6/2014	11/25/2014
N013831-003A	MW-24A-200	Water	11/4/2014 2:06:00 PM	11/6/2014	11/25/2014
N013831-003B	MW-24A-200	Water	11/4/2014 2:06:00 PM	11/6/2014	11/25/2014
N013831-003C	MW-24A-200	Water	11/4/2014 2:06:00 PM	11/6/2014	11/25/2014
N013831-003D	MW-24A-200	Water	11/4/2014 2:06:00 PM	11/6/2014	11/25/2014
N013831-004A	MW-27-020-200	Water	11/4/2014 10:47:00 AM	11/6/2014	11/25/2014
N013831-004B	MW-27-020-200	Water	11/4/2014 10:47:00 AM	11/6/2014	11/25/2014
N013831-004C	MW-27-020-200	Water	11/4/2014 10:47:00 AM	11/6/2014	11/25/2014
N013831-004D	MW-27-020-200	Water	11/4/2014 10:47:00 AM	11/6/2014	11/25/2014
N013831-004E	MW-27-020-200	Water	11/4/2014 10:47:00 AM	11/6/2014	11/25/2014
N013831-005A	MW-27-020-200-EB	Water	11/4/2014 8:47:00 AM	11/6/2014	11/25/2014
N013831-005B	MW-27-020-200-EB	Water	11/4/2014 8:47:00 AM	11/6/2014	11/25/2014
N013831-006A	MW-27-060-200	Water	11/4/2014 3:31:00 PM	11/6/2014	11/25/2014
N013831-006B	MW-27-060-200	Water	11/4/2014 3:31:00 PM	11/6/2014	11/25/2014
N013831-006C	MW-27-060-200	Water	11/4/2014 3:31:00 PM	11/6/2014	11/25/2014
N013831-006D	MW-27-060-200	Water	11/4/2014 3:31:00 PM	11/6/2014	11/25/2014
N013831-006E	MW-27-060-200	Water	11/4/2014 3:31:00 PM	11/6/2014	11/25/2014
N013831-007A	MW-27-060-200-EB	Water	11/4/2014 2:38:00 PM	11/6/2014	11/25/2014
N013831-007B	MW-27-060-200-EB	Water	11/4/2014 2:38:00 PM	11/6/2014	11/25/2014
N013831-008A	MW-27-085-200	Water	11/4/2014 12:50:00 PM	11/6/2014	11/25/2014
N013831-008B	MW-27-085-200	Water	11/4/2014 12:50:00 PM	11/6/2014	11/25/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013831
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013831-008C	MW-27-085-200	Water	11/4/2014 12:50:00 PM	11/6/2014	11/25/2014
N013831-008D	MW-27-085-200	Water	11/4/2014 12:50:00 PM	11/6/2014	11/25/2014
N013831-008E	MW-27-085-200	Water	11/4/2014 12:50:00 PM	11/6/2014	11/25/2014
N013831-009A	MW-41M-200	Water	11/4/2014 9:14:00 AM	11/6/2014	11/25/2014
N013831-009B	MW-41M-200	Water	11/4/2014 9:14:00 AM	11/6/2014	11/25/2014
N013831-009C	MW-41M-200	Water	11/4/2014 9:14:00 AM	11/6/2014	11/25/2014
N013831-009D	MW-41M-200	Water	11/4/2014 9:14:00 AM	11/6/2014	11/25/2014
N013831-010A	MW-41S-200	Water	11/4/2014 10:10:00 AM	11/6/2014	11/25/2014
N013831-010B	MW-41S-200	Water	11/4/2014 10:10:00 AM	11/6/2014	11/25/2014
N013831-010C	MW-41S-200	Water	11/4/2014 10:10:00 AM	11/6/2014	11/25/2014
N013831-010D	MW-41S-200	Water	11/4/2014 10:10:00 AM	11/6/2014	11/25/2014
N013831-011A	MW-201-200	Water	11/5/2014 7:05:00 AM	11/6/2014	11/25/2014
N013831-012A	MW-31-135-200	Water	11/5/2014 3:48:00 PM	11/6/2014	11/25/2014
N013831-012B	MW-31-135-200	Water	11/5/2014 3:48:00 PM	11/6/2014	11/25/2014
N013831-012C	MW-31-135-200	Water	11/5/2014 3:48:00 PM	11/6/2014	11/25/2014
N013831-012D	MW-31-135-200	Water	11/5/2014 3:48:00 PM	11/6/2014	11/25/2014
N013831-013A	MW-42-030-200	Water	11/5/2014 3:03:00 PM	11/6/2014	11/25/2014
N013831-013B	MW-42-030-200	Water	11/5/2014 3:03:00 PM	11/6/2014	11/25/2014
N013831-013C	MW-42-030-200	Water	11/5/2014 3:03:00 PM	11/6/2014	11/25/2014
N013831-013D	MW-42-030-200	Water	11/5/2014 3:03:00 PM	11/6/2014	11/25/2014
N013831-013E	MW-42-030-200	Water	11/5/2014 3:03:00 PM	11/6/2014	11/25/2014
N013831-014A	MW-43-025-200	Water	11/5/2014 9:26:00 AM	11/6/2014	11/25/2014
N013831-014B	MW-43-025-200	Water	11/5/2014 9:26:00 AM	11/6/2014	11/25/2014
N013831-014C	MW-43-025-200	Water	11/5/2014 9:26:00 AM	11/6/2014	11/25/2014
N013831-014D	MW-43-025-200	Water	11/5/2014 9:26:00 AM	11/6/2014	11/25/2014
N013831-015A	MW-43-025-200-EB	Water	11/5/2014 8:43:00 AM	11/6/2014	11/25/2014
N013831-015B	MW-43-025-200-EB	Water	11/5/2014 8:43:00 AM	11/6/2014	11/25/2014
N013831-016A	MW-43-075-200	Water	11/5/2014 11:01:00 AM	11/6/2014	11/25/2014
N013831-016B	MW-43-075-200	Water	11/5/2014 11:01:00 AM	11/6/2014	11/25/2014
N013831-016C	MW-43-075-200	Water	11/5/2014 11:01:00 AM	11/6/2014	11/25/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013831
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013831-016D	MW-43-075-200	Water	11/5/2014 11:01:00 AM	11/6/2014	11/25/2014
N013831-017A	MW-43-075-200-EB	Water	11/5/2014 10:23:00 AM	11/6/2014	11/25/2014
N013831-017B	MW-43-075-200-EB	Water	11/5/2014 10:23:00 AM	11/6/2014	11/25/2014
N013831-018A	MW-43-090-200	Water	11/5/2014 12:17:00 PM	11/6/2014	11/25/2014
N013831-018B	MW-43-090-200	Water	11/5/2014 12:17:00 PM	11/6/2014	11/25/2014
N013831-018C	MW-43-090-200	Water	11/5/2014 12:17:00 PM	11/6/2014	11/25/2014
N013831-018D	MW-43-090-200	Water	11/5/2014 12:17:00 PM	11/6/2014	11/25/2014
N013831-019A	MW-43-090-200-EB	Water	11/5/2014 11:25:00 AM	11/6/2014	11/25/2014
N013831-019B	MW-43-090-200-EB	Water	11/5/2014 11:25:00 AM	11/6/2014	11/25/2014
N013831-020A	MW-63-065-200	Water	11/5/2014 8:32:00 AM	11/6/2014	11/25/2014
N013831-020B	MW-63-065-200	Water	11/5/2014 8:32:00 AM	11/6/2014	11/25/2014
N013831-020C	MW-63-065-200	Water	11/5/2014 8:32:00 AM	11/6/2014	11/25/2014
N013831-020D	MW-63-065-200	Water	11/5/2014 8:32:00 AM	11/6/2014	11/25/2014
N013831-021A	MW-202-200	Water	11/6/2014 7:55:00 AM	11/6/2014	11/25/2014
N013831-022A	MW-203-200	Water	11/6/2014 8:00:00 AM	11/6/2014	11/25/2014
N013831-023A	MW-204-200	Water	11/6/2014 3:45:00 PM	11/6/2014	11/25/2014
N013831-024A	MW-34-055-200	Water	11/6/2014 1:46:00 PM	11/6/2014	11/25/2014
N013831-024B	MW-34-055-200	Water	11/6/2014 1:46:00 PM	11/6/2014	11/25/2014
N013831-024C	MW-34-055-200	Water	11/6/2014 1:46:00 PM	11/6/2014	11/25/2014
N013831-024D	MW-34-055-200	Water	11/6/2014 1:46:00 PM	11/6/2014	11/25/2014
N013831-024E	MW-34-055-200	Water	11/6/2014 1:46:00 PM	11/6/2014	11/25/2014
N013831-024F	MW-34-055-200	Water	11/6/2014 1:46:00 PM	11/6/2014	11/25/2014
N013831-025A	MW-34-055-200-EB	Water	11/6/2014 1:00:00 PM	11/6/2014	11/25/2014
N013831-025B	MW-34-055-200-EB	Water	11/6/2014 1:00:00 PM	11/6/2014	11/25/2014
N013831-026A	MW-34-080-200	Water	11/6/2014 2:44:00 PM	11/6/2014	11/25/2014
N013831-026B	MW-34-080-200	Water	11/6/2014 2:44:00 PM	11/6/2014	11/25/2014
N013831-026C	MW-34-080-200	Water	11/6/2014 2:44:00 PM	11/6/2014	11/25/2014
N013831-026D	MW-34-080-200	Water	11/6/2014 2:44:00 PM	11/6/2014	11/25/2014
N013831-027A	MW-34-080-200-EB	Water	11/6/2014 1:16:00 PM	11/6/2014	11/25/2014
N013831-027B	MW-34-080-200-EB	Water	11/6/2014 1:16:00 PM	11/6/2014	11/25/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013831
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013831-028A	MW-42-055-200	Water	11/6/2014 10:53:00 AM	11/6/2014	11/25/2014
N013831-028B	MW-42-055-200	Water	11/6/2014 10:53:00 AM	11/6/2014	11/25/2014
N013831-028C	MW-42-055-200	Water	11/6/2014 10:53:00 AM	11/6/2014	11/25/2014
N013831-028D	MW-42-055-200	Water	11/6/2014 10:53:00 AM	11/6/2014	11/25/2014
N013831-029A	MW-42-055-200-EB	Water	11/6/2014 9:42:00 AM	11/6/2014	11/25/2014
N013831-029B	MW-42-055-200-EB	Water	11/6/2014 9:42:00 AM	11/6/2014	11/25/2014
N013831-030A	MW-42-065-200	Water	11/6/2014 9:27:00 AM	11/6/2014	11/25/2014
N013831-030B	MW-42-065-200	Water	11/6/2014 9:27:00 AM	11/6/2014	11/25/2014
N013831-030C	MW-42-065-200	Water	11/6/2014 9:27:00 AM	11/6/2014	11/25/2014
N013831-030D	MW-42-065-200	Water	11/6/2014 9:27:00 AM	11/6/2014	11/25/2014
N013831-030E	MW-42-065-200	Water	11/6/2014 9:27:00 AM	11/6/2014	11/25/2014
N013831-031A	MW-48-200	Water	11/6/2014 3:50:00 PM	11/6/2014	11/25/2014
N013831-031B	MW-48-200	Water	11/6/2014 3:50:00 PM	11/6/2014	11/25/2014
N013831-031C	MW-48-200	Water	11/6/2014 3:50:00 PM	11/6/2014	11/25/2014
N013831-032A	MW-71-035-200	Water	11/6/2014 7:15:00 AM	11/6/2014	11/25/2014
N013831-032B	MW-71-035-200	Water	11/6/2014 7:15:00 AM	11/6/2014	11/25/2014
N013831-032C	MW-71-035-200	Water	11/6/2014 7:15:00 AM	11/6/2014	11/25/2014
N013831-032D	MW-71-035-200	Water	11/6/2014 7:15:00 AM	11/6/2014	11/25/2014

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-020-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:47:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	890	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	8500	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41S-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	4900	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-030-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	2400	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-025-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-075-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 11:01:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	9200	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-090-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 12:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	6400	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	840	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 2:44:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	5900	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-028		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 9:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-030		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	6000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-48-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 3:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-031		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-032		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107B**	QC Batch: **R96671**			PrepDate			Analyst: **AC**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	11/7/2014 02:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N013831-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96671**
Client ID: **ZZZZZZ** Batch ID: **R96671** TestNo: **EPA 120.1** Analysis Date: **11/7/2014** SeqNo: **1869367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	974.000	0.10						975.0	0.103	10	

Sample ID **N013831-014D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96671**
Client ID: **ZZZZZZ** Batch ID: **R96671** TestNo: **EPA 120.1** Analysis Date: **11/7/2014** SeqNo: **1869380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1405.000	0.10						1399	0.428	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**				PrepDate	**11/9/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	640	10	10		mg/L	1	11/9/2014 08:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**				PrepDate	**11/9/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	8200	100	100		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-020-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:47:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**			PrepDate	**11/9/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	650	10	10		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**			PrepDate	**11/9/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	650	10	10		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**				PrepDate	**11/9/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	5800	50	50		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**			PrepDate	**11/9/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	8700	100	100		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41S-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**			PrepDate	**11/9/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3100	33	33		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**				PrepDate	**11/9/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	6700	100	100		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-025-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**			PrepDate	**11/9/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1000	10	10		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-090-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 12:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141109C**	QC Batch: **47928**			PrepDate	**11/9/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	11/9/2014 08:05 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	640	10	10		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 9:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-030		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-032		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-47928** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/9/2014** RunNo: **96714**
Client ID: **PBW** Batch ID: **47928** TestNo: **SM2540C** Analysis Date: **11/9/2014** SeqNo: **1871716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-47928** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/9/2014** RunNo: **96714**
Client ID: **LCSW** Batch ID: **47928** TestNo: **SM2540C** Analysis Date: **11/9/2014** SeqNo: **1871717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1005.000	10	1000	0	101	80	120				

Sample ID **N013831-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/9/2014** RunNo: **96714**
Client ID: **ZZZZZZ** Batch ID: **47928** TestNo: **SM2540C** Analysis Date: **11/9/2014** SeqNo: **1871720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	8540.000	100	0	0	0	0	0	8160	4.55	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-47952** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/11/2014** RunNo: **96757**
Client ID: **PBW** Batch ID: **47952** TestNo: **SM2540C** Analysis Date: **11/11/2014** SeqNo: **1873107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-47952** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/11/2014** RunNo: **96757**
Client ID: **LCSW** Batch ID: **47952** TestNo: **SM2540C** Analysis Date: **11/11/2014** SeqNo: **1873108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1053.000	10	1000	0	105	80	120				

Sample ID **N013832-001C DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/11/2014** RunNo: **96757**
Client ID: **ZZZZZZ** Batch ID: **47952** TestNo: **SM2540C** Analysis Date: **11/11/2014** SeqNo: **1873119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	11390.000	100	0	0	0	0	0	11880	4.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-001

Client Sample ID: MW-125-200
Collection Date: 11/4/2014 8:30:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 11:19 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	9.5	0.080	1.0		µg/L	5	11/12/2014 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	9.0	0.030	1.0		µg/L	1	11/18/2014 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141113A**	QC Batch: **R96845**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 04:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate		**11/11/2014**	Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	11/18/2014 04:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-020-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:47:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 11:58 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 04:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 12:17 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 01:38 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	9.5	0.080	1.0		µg/L	5	11/12/2014 06:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	8.8	0.030	1.0		µg/L	1	11/18/2014 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41S-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141118A** QC Batch: **R96852** PrepDate							Analyst: **RB**
Hexavalent Chromium	17	0.032	0.40		µg/L	2	11/18/2014 03:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	17	0.030	1.0		µg/L	1	11/18/2014 05:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-201-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A**	QC Batch: **R96842**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	12	0.080	1.0		µg/L	5	11/12/2014 07:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	12	0.030	1.0		µg/L	1	11/18/2014 05:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-030-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	0.54	0.016	0.20		µg/L	1	11/12/2014 03:38 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate		**11/11/2014**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 05:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-025-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 03:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-075-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 11:01:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 04:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 06:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-090-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 12:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	11/12/2014 07:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 06:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A** QC Batch: **R96842**				PrepDate			Analyst: **RB**
Hexavalent Chromium	1.6	0.016	0.20		µg/L	1	11/12/2014 05:18 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	1.6	0.030	1.0		µg/L	1	11/18/2014 07:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-202-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A**	QC Batch: **R96842**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 05:36 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-203-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141112A**	QC Batch: **R96842**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 05:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-204-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 3:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141112A**	QC Batch: **R96842**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/12/2014 06:19 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 10:47 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 07:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 2:44:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 11:07 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 07:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-028

Client Sample ID: MW-42-055-200
Collection Date: 11/6/2014 10:53:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	0.35	0.016	0.20		µg/L	1	11/13/2014 11:26 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	2.8	0.030	1.0		µg/L	1	11/18/2014 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 9:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-030		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141113A**	QC Batch: **R96845**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 11:45 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 07:56 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-48-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 3:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-031		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	11/13/2014 03:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141118B** QC Batch: **47959** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/18/2014 08:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-032		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845**				PrepDate			Analyst: **RB**
Hexavalent Chromium	1.2	0.080	1.0		µg/L	5	11/13/2014 03:24 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B** QC Batch: **47959**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	15	0.030	1.0		µg/L	1	11/18/2014 08:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Nov-14*

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96842** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **PBW** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96842** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **LCSW** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	0.20	5.000	0	101	90	110				

Sample ID **N013831-002A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.388	1.0						9.475	0.922	20	

Sample ID **N013831-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.545	1.0	25.00	9.475	100	90	110				

Sample ID **N013831-002A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.423	1.0	25.00	9.475	99.8	90	110	34.54	0.354	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013831-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0.02410	106	90	110				

Sample ID **N013831-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.572	0.20	1.000	0.5378	103	90	110				

Sample ID **N013831-020A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.706	0.20	1.000	1.618	109	90	110				

Sample ID **N013831-021A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0.05170	101	90	110				

Sample ID **N013831-022A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.04120	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013831-023A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0.02400	104	90	110				

Sample ID **N013831-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.719	1.0	25.00	9.512	101	90	110				

Sample ID **N013831-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.401	1.0	25.00	11.79	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96845** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **PBW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96845** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **LCSW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	90	110				

Sample ID **N013831-028A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.405	0.20	1.000	0.3467	106	90	110				

Sample ID **N013831-028A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.393	0.20						0.3467	12.4	20	

Sample ID **N013831-028A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.418	0.20	1.000	0.3467	107	90	110	1.405	0.900	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013832-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.06390	103	90	110				

Sample ID **N013832-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.109	0.20	1.000	0.08350	103	90	110				

Sample ID **N013831-031A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.489	1.0	5.000	0.3595	103	90	110				

Sample ID **N013831-032A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.267	1.0	5.000	1.154	102	90	110				

Sample ID **N013832-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.021	1.0	25.00	17.48	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013832-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.116	1.0	25.00	17.83	101	90	110				

Sample ID **N013831-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0.06000	102	90	110				

Sample ID **N013866-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.092	0.20	1.000	0.06010	103	90	110				

Sample ID **N013866-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	63.165	1.0	25.00	37.83	101	90	110				

Sample ID **N013866-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.702	1.0	25.00	5.257	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96852** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **PBW** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96852** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **LCSW** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	0.20	5.000	0	99.6	90	110				

Sample ID **N013866-026A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.493	0.40						16.47	0.152	20	

Sample ID **N013866-026A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.974	0.40	10.00	16.47	95.1	90	110				

Sample ID **N013866-026A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.211	0.40	10.00	16.47	97.4	90	110	25.97	0.907	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013831-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.884	0.40	10.00	17.28	106	90	110				

Sample ID **N013866-027A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	22.151	0.40	10.00	12.66	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96842** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **PBW** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96842** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **LCSW** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	0.20	5.000	0	101	90	110				

Sample ID **N013831-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0.03890	100	90	110				

Sample ID **N013831-004A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.05240	105	90	110				

Sample ID **N013831-006A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0.03620	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013831-002A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.388	1.0						9.475	0.922	20	

Sample ID **N013831-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.545	1.0	25.00	9.475	100	90	110				

Sample ID **N013831-002A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.423	1.0	25.00	9.475	99.8	90	110	34.54	0.354	20	

Sample ID **N013831-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.982	0.20	1.000	0	98.2	90	110				

Sample ID **N013831-014A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0.04910	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013831-016A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.943	0.20	1.000	0	94.3	90	110				

Sample ID **N013831-018A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96842**
Client ID: **ZZZZZZ** Batch ID: **R96842** TestNo: **EPA 218.6** Analysis Date: **11/12/2014** SeqNo: **1876935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	1.0	5.000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96845** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **PBW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96845** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **LCSW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	90	110				

Sample ID **N013831-024A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.08050	102	90	110				

Sample ID **N013831-026A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.03630	102	90	110				

Sample ID **N013831-028A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.405	0.20	1.000	0.3467	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013831-030A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0.03990	104	90	110				

Sample ID **N013831-028A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.393	0.20						0.3467	12.4	20	

Sample ID **N013831-028A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.418	0.20	1.000	0.3467	107	90	110	1.405	0.900	20	

Sample ID **N013866-005A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0.05300	97.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-47959** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **PBW** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-47959** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **LCSW** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.655	1.0	10.00	0	96.6	85	115				

Sample ID **N013831-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.864	1.0	10.00	0.1202	97.4	75	125				

Sample ID **N013831-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.822	1.0	10.00	0.1202	97.0	75	125	9.864	0.423	20	

Sample ID **N013831-014B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.643	1.0	10.00	0	96.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	320	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	320	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	28	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	28	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-004

Client Sample ID: MW-27-020-200
Collection Date: 11/4/2014 10:47:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	150	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	320	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	320	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	240	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	240	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41S-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141111D**	QC Batch: **R96727**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	52	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/11/2014 03:00 PM
Alkalinity, Total (As CaCO3)	52	1.2	5.0		mg/L	1	11/11/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	36	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-025-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	270	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	270	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-090-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 12:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	280	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	280	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 9:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-030		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	400	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	400	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-032

Client Sample ID: MW-71-035-200
Collection Date: 11/6/2014 7:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	240	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	240	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Nov-14*

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96727** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96727**
Client ID: **LCSW** Batch ID: **R96727** TestNo: **SM 2320 B** Analysis Date: **11/11/2014** SeqNo: **1872110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	99.785	5.0	100.0	0	99.8	85	115				
Alkalinity, Total (As CaCO3)	101.931	5.0	100.0	0	102	85	115				

Sample ID **MB-R96727** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96727**
Client ID: **PBW** Batch ID: **R96727** TestNo: **SM 2320 B** Analysis Date: **11/11/2014** SeqNo: **1872111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013831-001D DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96727**
Client ID: **ZZZZZZ** Batch ID: **R96727** TestNo: **SM 2320 B** Analysis Date: **11/11/2014** SeqNo: **1872113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	317.597	5.0						324.0	2.01	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	317.597	5.0						324.0	2.01	30	

Sample ID **N013831-001D MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96727**
Client ID: **ZZZZZZ** Batch ID: **R96727** TestNo: **SM 2320 B** Analysis Date: **11/11/2014** SeqNo: **1872114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	429.185	5.0	100.0	324.0	105	75	125				
Alkalinity, Total (As CaCO3)	429.185	5.0	100.0	324.0	105	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013831-001D MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96727**
Client ID: **ZZZZZZ** Batch ID: **R96727** TestNo: **SM 2320 B** Analysis Date: **11/11/2014** SeqNo: **1872115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	424.893	5.0	100.0	324.0	101	75	125	429.2	1.01	20	
Alkalinity, Total (As CaCO3)	424.893	5.0	100.0	324.0	101	75	125	429.2	1.01	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96751** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **LCSW** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	94.866	5.0	100.0	0	94.9	85	115				
Alkalinity, Total (As CaCO3)	103.795	5.0	100.0	0	104	85	115				

Sample ID **MB-R96751** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **PBW** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013831-012C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **ZZZZZZ** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	35.714	5.0						35.71	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	35.714	5.0						35.71	0	30	

Sample ID **N013831-012C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **ZZZZZZ** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	136.161	5.0	100.0	35.71	100	75	125				
Alkalinity, Total (As CaCO3)	136.161	5.0	100.0	35.71	100	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013831-012C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **ZZZZZZ** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	138.393	5.0	100.0	35.71	103	75	125	136.2	1.63	20	
Alkalinity, Total (As CaCO3)	138.393	5.0	100.0	35.71	103	75	125	136.2	1.63	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-001

Client Sample ID: MW-125-200
Collection Date: 11/4/2014 8:30:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/12/2014 02:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	76	0.50	10		mg/L	20	11/12/2014 01:37 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Fluoride	0.60	0.011	0.10		mg/L	1	11/12/2014 02:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	110	0.66	10		mg/L	20	11/12/2014 01:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-002

Client Sample ID: MW-129-200
Collection Date: 11/4/2014 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/12/2014 02:53 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	4800	25	500		mg/L	1000	11/12/2014 03:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	510	1.6	25		mg/L	50	11/12/2014 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-004

Client Sample ID: MW-27-020-200
Collection Date: 11/4/2014 10:47:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/12/2014 11:03 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	84	0.50	10		mg/L	20	11/12/2014 10:47 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	220	0.66	10		mg/L	20	11/12/2014 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-006

Client Sample ID: MW-27-060-200
Collection Date: 11/4/2014 3:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/12/2014 02:02 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	77	0.50	10		mg/L	20	11/12/2014 01:49 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Fluoride	0.73	0.011	0.10		mg/L	1	11/12/2014 02:02 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	110	0.66	10		mg/L	20	11/12/2014 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-008

Client Sample ID: MW-27-085-200
Collection Date: 11/4/2014 12:50:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/12/2014 05:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	2400	12	250		mg/L	500	11/12/2014 05:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Fluoride	ND	0.022	0.20		mg/L	2	11/12/2014 05:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	940	3.3	50		mg/L	100	11/12/2014 05:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-009

Client Sample ID: MW-41M-200
Collection Date: 11/4/2014 9:14:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/12/2014 07:08 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	4800	25	500		mg/L	1000	11/12/2014 06:56 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	520	1.6	25		mg/L	50	11/12/2014 05:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-010

Client Sample ID: MW-41S-200
Collection Date: 11/4/2014 10:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/12/2014 06:43 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	1600	5.0	100		mg/L	200	11/12/2014 06:31 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	270	0.66	10		mg/L	20	11/12/2014 05:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/12/2014 07:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	3700	12	250		mg/L	500	11/12/2014 07:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	450	1.6	25		mg/L	50	11/12/2014 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-014

Client Sample ID: MW-43-025-200
Collection Date: 11/5/2014 9:26:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	0.51	0.028	0.50		mg/L	1	11/12/2014 07:59 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	140	0.50	10		mg/L	20	11/12/2014 08:12 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	340	0.66	10		mg/L	20	11/12/2014 08:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-018

Client Sample ID: MW-43-090-200
Collection Date: 11/5/2014 12:17:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/12/2014 09:15 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	5300	25	500		mg/L	1000	11/12/2014 09:02 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	1500	6.6	100		mg/L	200	11/17/2014 11:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-024

Client Sample ID: MW-34-055-200
Collection Date: 11/6/2014 1:46:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/12/2014 09:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	76	0.50	10		mg/L	20	11/12/2014 09:53 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	200	0.66	10		mg/L	20	11/12/2014 09:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-030

Client Sample ID: MW-42-065-200
Collection Date: 11/6/2014 9:27:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/12/2014 10:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	1600	12	250		mg/L	500	11/12/2014 10:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	550	3.3	50		mg/L	100	11/12/2014 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-032

Client Sample ID: MW-71-035-200
Collection Date: 11/6/2014 7:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.28	5.0		mg/L	10	11/12/2014 10:56 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Chloride	5500	25	500		mg/L	1000	11/17/2014 11:57 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	1200	16	250		mg/L	500	11/12/2014 11:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96795_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **PBW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96795_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **LCSW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.503	0.50	2.500	0	100	90	110				

Sample ID **N013831-004D-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.079	0.50						0.07700	0	20	

Sample ID **N013831-004D-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.421	0.50	2.500	0.07700	93.8	80	120				

Sample ID **N013831-004D-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.405	0.50	2.500	0.07700	93.1	80	120	2.421	0.663	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**N013831-006D-DUP**	SampType:	**DUP**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96795**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96795**	TestNo:	**EPA 300.0**			Analysis Date:	**11/12/2014**		SeqNo:	**1875187**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.103	0.50						0.09700	0	20	

Sample ID	**N013831-006D-MS**	SampType:	**MS**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96795**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96795**	TestNo:	**EPA 300.0**			Analysis Date:	**11/12/2014**		SeqNo:	**1875188**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.338	0.50	2.500	0.09700	89.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96795_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **PBW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R96795_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **LCSW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.415	0.50	2.500	0	96.6	90	110				

Sample ID **N013831-004D-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	133.160	10	50.00	83.84	98.6	80	120				

Sample ID **N013831-004D-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	133.520	10	50.00	83.84	99.4	80	120	133.2	0.270	20	

Sample ID **N013831-006D-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	75.160	10						76.74	2.08	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **N013831-006D-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	126.420	10	50.00	76.74	99.4	80	120				

Sample ID **N013831-004D-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1878994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	83.560	10						83.84	0.335	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96819_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R96819_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.560	0.50	2.500	0	102	90	110				

Sample ID **N013866-001C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	169.100	10	50.00	115.7	107	80	120				

Sample ID **N013866-001C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	117.600	10						115.7	1.63	20	

Sample ID **N013866-001C-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	168.980	10	50.00	115.7	107	80	120	169.1	0.0710	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R96795_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	PBW	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R96795_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	LCSW	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.413	0.10	2.500	0	96.5	90	110				

Sample ID	N013831-006D-DUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.710	0.10						0.7300	2.78	20	

Sample ID	N013831-006D-MS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875175

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.629	0.10	1.000	0.7300	89.9	80	120				

Sample ID	N013831-006D-MSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875176

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.582	0.10	1.000	0.7300	85.2	80	120	1.629	2.93	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96795_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **PBW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96795_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **LCSW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.768	0.50	5.000	0	95.4	90	110				

Sample ID **N013831-004D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	322.060	10	100.0	221.2	101	80	120				

Sample ID **N013831-004D-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	319.000	10	100.0	221.2	97.8	80	120	322.1	0.955	20	

Sample ID **N013831-006D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	109.120	10						110.4	1.20	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **N013831-006D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	208.100	10	100.0	110.4	97.7	80	120				

Sample ID **N013831-004D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1878995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	219.740	10						221.2	0.653	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96819_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96819_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.097	0.50	5.000	0	102	90	110				

Sample ID **N013831-018D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1538.200	100						1544	0.376	20	

Sample ID **N013831-018D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2627.600	100	1000	1544	108	80	120				

Sample ID **N013831-018D-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2627.200	100	1000	1544	108	80	120	2628	0.0152	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **N013866-001C-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	308.340	10	100.0	201.7	107	80	120				

Sample ID **N013866-001C-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	204.000	10						201.7	1.12	20	

Sample ID **N013866-001C-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	303.980	10	100.0	201.7	102	80	120	308.3	1.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.62	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.11	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-020-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:47:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.66	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41S-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-030-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.3	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-032		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.67	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Nov-14*

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R96890** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **PBW** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R96890** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **LCSW** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.982	0.050	1.000	0	98.2	85	115				

Sample ID **N013831-004EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **ZZZZZZ** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N013831-004EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **ZZZZZZ** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.039	0.050	1.000	0	104	85	115				

Sample ID **N013831-004EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **ZZZZZZ** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.086	0.050	1.000	0	109	85	115	1.039	4.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N013831-008EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96890
Client ID:	ZZZZZZ	Batch ID:	R96890	TestNo:	SM4500-NO3			Analysis Date:	11/20/2014	SeqNo:	1879473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	N013831-008EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96890
Client ID:	ZZZZZZ	Batch ID:	R96890	TestNo:	SM4500-NO3			Analysis Date:	11/20/2014	SeqNo:	1879474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.025	0.050	1.000	0	102	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	160	19	100		ug/L	1	11/21/2014 02:14 PM
Calcium	98000	58	500		ug/L	1	11/21/2014 02:14 PM
Iron	520	1.3	20		ug/L	1	11/21/2014 02:14 PM
Magnesium	21000	11	100		ug/L	1	11/21/2014 02:14 PM
Sodium	110000	190	2500		ug/L	5	11/20/2014 04:34 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-002

Client Sample ID: MW-129-200
Collection Date: 11/4/2014 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	1200	19	100		ug/L	1	11/21/2014 02:19 PM
Calcium	440000	580	5000		ug/L	10	11/21/2014 04:37 PM
Iron	34	1.3	20		ug/L	1	11/21/2014 02:19 PM
Magnesium	29000	11	100		ug/L	1	11/21/2014 02:19 PM
Sodium	2800000	3800	50000		ug/L	100	11/20/2014 06:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-004

Client Sample ID: MW-27-020-200
Collection Date: 11/4/2014 10:47:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	100	19	100		ug/L	1	11/21/2014 02:24 PM
Calcium	78000	58	500		ug/L	1	11/21/2014 02:24 PM
Iron	47	1.3	20		ug/L	1	11/21/2014 02:24 PM
Magnesium	23000	11	100		ug/L	1	11/21/2014 02:24 PM
Sodium	89000	190	2500		ug/L	5	11/20/2014 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	120	19	100		ug/L	1	11/21/2014 02:29 PM
Calcium	92000	58	500		ug/L	1	11/21/2014 02:29 PM
Iron	540	1.3	20		ug/L	1	11/21/2014 02:29 PM
Magnesium	20000	11	100		ug/L	1	11/21/2014 02:29 PM
Sodium	100000	190	2500		ug/L	5	11/20/2014 04:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	1000	19	100		ug/L	1	11/21/2014 02:33 PM
Calcium	230000	58	500		ug/L	1	11/21/2014 02:33 PM
Iron	120	1.3	20		ug/L	1	11/21/2014 02:33 PM
Magnesium	39000	11	100		ug/L	1	11/21/2014 02:33 PM
Sodium	1900000	3800	50000		ug/L	100	11/20/2014 05:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	1100	19	100		ug/L	1	11/21/2014 02:38 PM
Calcium	420000	580	5000		ug/L	10	11/21/2014 04:42 PM
Iron	20	1.3	20		ug/L	1	11/21/2014 02:38 PM
Magnesium	28000	11	100		ug/L	1	11/21/2014 02:38 PM
Sodium	2800000	3800	50000		ug/L	100	11/20/2014 06:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-010

Client Sample ID: MW-41S-200
Collection Date: 11/4/2014 10:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	740	19	100		ug/L	1	11/21/2014 02:44 PM
Calcium	130000	58	500		ug/L	1	11/21/2014 02:44 PM
Iron	50	1.3	20		ug/L	1	11/21/2014 02:44 PM
Magnesium	15000	11	100		ug/L	1	11/21/2014 02:44 PM
Sodium	950000	1900	25000		ug/L	50	11/20/2014 06:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	1100	19	100		ug/L	1	11/21/2014 02:50 PM
Calcium	360000	58	500		ug/L	1	11/21/2014 02:50 PM
Iron	38	1.3	20		ug/L	1	11/21/2014 02:50 PM
Magnesium	20000	11	100		ug/L	1	11/21/2014 02:50 PM
Sodium	2200000	3800	50000		ug/L	100	11/20/2014 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013831
Project: PG&E Topock
Lab ID: N013831-014

Client Sample ID: MW-43-025-200
Collection Date: 11/5/2014 9:26:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	140	19	100		ug/L	1	11/24/2014 05:47 PM
Calcium	110000	58	500		ug/L	1	11/24/2014 05:47 PM
Iron	3700	1.3	20		ug/L	1	11/24/2014 05:47 PM
Magnesium	53000	11	100		ug/L	1	11/24/2014 05:47 PM
Sodium	140000	190	2500		ug/L	5	11/20/2014 05:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-090-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 12:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	1700	19	100		ug/L	1	11/21/2014 03:17 PM
Calcium	560000	580	5000		ug/L	10	11/21/2014 04:46 PM
Iron	2100	1.3	20		ug/L	1	11/21/2014 03:17 PM
Magnesium	160000	11	100		ug/L	1	11/21/2014 03:17 PM
Sodium	3400000	7500	100000		ug/L	200	11/20/2014 06:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**				PrepDate	**11/12/2014**	Analyst: **CEI**
Boron	ND	19	100		ug/L	1	11/21/2014 03:22 PM
Calcium	72000	58	500		ug/L	1	11/21/2014 03:22 PM
Iron	50	1.3	20		ug/L	1	11/21/2014 03:22 PM
Magnesium	20000	11	100		ug/L	1	11/21/2014 03:22 PM
Sodium	85000	190	2500		ug/L	5	11/20/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 9:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-030		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	750	19	100		ug/L	1	11/21/2014 03:27 PM
Calcium	140000	58	500		ug/L	1	11/21/2014 03:27 PM
Iron	48	1.3	20		ug/L	1	11/21/2014 03:27 PM
Magnesium	27000	11	100		ug/L	1	11/21/2014 03:27 PM
Sodium	1300000	3800	50000		ug/L	100	11/20/2014 06:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-032		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	2200	19	100		ug/L	1	11/21/2014 03:33 PM
Calcium	880000	580	5000		ug/L	10	11/21/2014 04:50 PM
Iron	1600	1.3	20		ug/L	1	11/21/2014 03:33 PM
Magnesium	68000	11	100		ug/L	1	11/21/2014 03:33 PM
Sodium	3100000	3800	50000		ug/L	100	11/20/2014 06:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-47973** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **PBW** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-47973** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **LCSW** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10329.582	500	10000	0	103	85	115				

Sample ID **N013831-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2822336.516	50000	10000	2773000	495	75	125				S

Sample ID **N013831-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2926043.742	50000	10000	2773000	1530	75	125	2822000	3.61	20	S

Sample ID **N013831-030B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1315537.115	50000	10000	1293000	229	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-47973	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	PBW	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	65.553	500									
Magnesium	64.052	100									

Sample ID	LCS1-47973	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	LCSW	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.145	100	5000	0	94.6	85	115				
Calcium	9837.456	500	10000	0	98.4	85	115				
Magnesium	9970.588	100	10000	0	99.7	85	115				

Sample ID	N013831-001B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	ZZZZZZ	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879765

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5519.727	100	5000	163.3	107	75	125				
Calcium	125315.176	500	10000	97530	278	75	125				S
Magnesium	33776.423	100	10000	20960	128	75	125				S

Sample ID	N013831-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	ZZZZZZ	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5548.119	100	5000	163.3	108	75	125	5520	0.513	20	
Calcium	125533.094	500	10000	97530	280	75	125	125300	0.174	20	S
Magnesium	33787.446	100	10000	20960	128	75	125	33780	0.0326	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013831-024B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1879767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5212.716	100	5000	98.83	102	75	125				
Calcium	78234.610	500	10000	71950	62.8	75	125				S
Magnesium	27560.673	100	10000	19660	79.0	75	125				

Sample ID **LCS1-47973** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **LCSW** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.232	20	100.0	0	106	85	115				

Sample ID **N013831-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	685.455	20	100.0	522.5	163	75	125				S

Sample ID **N013831-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	686.088	20	100.0	522.5	164	75	125	685.5	0.0923	20	S

Sample ID **N013831-024B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	136.113	20	100.0	49.67	86.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**MB-47973**	SampType:	**MBLK**	TestCode:	**6010_WDPG**	Units:	**ug/L**		Prep Date:	**11/12/2014**		RunNo:	**96922**	
Client ID:	**PBW**	Batch ID:	**47973**	TestNo:	**EPA 6010B**		**EPA 3010A**		Analysis Date:	**11/24/2014**		SeqNo:	**1881176**	
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron		16.177		20										

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	11	0.027	0.10		µg/L	1	11/18/2014 03:09 PM
Manganese	330	0.13	2.5		µg/L	5	11/18/2014 03:15 PM
Molybdenum	3.6	0.15	0.50		µg/L	1	11/18/2014 03:09 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.9	0.027	0.10		µg/L	1	11/18/2014 04:10 PM
Manganese	ND	0.026	0.50		µg/L	1	11/18/2014 04:10 PM
Molybdenum	24	0.76	2.5		µg/L	5	11/18/2014 04:16 PM
Selenium	ND	0.34	2.5		µg/L	5	11/18/2014 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	0.28	0.027	0.10		µg/L	1	11/18/2014 04:21 PM
Manganese	28	0.13	2.5		µg/L	5	11/18/2014 04:27 PM
Molybdenum	67	0.15	0.50		µg/L	1	11/18/2014 04:21 PM
Selenium	0.64	0.069	0.50		µg/L	1	11/18/2014 04:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-020-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:47:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.7	0.027	0.10		µg/L	1	11/18/2014 04:32 PM
Manganese	110	0.026	0.50		µg/L	1	11/18/2014 04:32 PM
Molybdenum	5.6	0.15	0.50		µg/L	1	11/18/2014 04:32 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 04:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	11	0.027	0.10		µg/L	1	11/18/2014 04:43 PM
Manganese	340	0.13	2.5		µg/L	5	11/18/2014 04:49 PM
Molybdenum	3.7	0.15	0.50		µg/L	1	11/18/2014 04:43 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 12:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.6	0.027	0.10		µg/L	1	11/18/2014 04:54 PM
Manganese	2.4	0.026	0.50		µg/L	1	11/18/2014 04:54 PM
Molybdenum	21	0.15	0.50		µg/L	1	11/18/2014 04:54 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41M-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.9	0.027	0.10		µg/L	1	11/18/2014 05:22 PM
Manganese	ND	0.026	0.50		µg/L	1	11/18/2014 05:22 PM
Molybdenum	26	0.76	2.5		µg/L	5	11/18/2014 05:27 PM
Selenium	ND	0.34	2.5		µg/L	5	11/18/2014 05:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41S-200
Lab Order:	N013831	**Collection Date:**	11/4/2014 10:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.8	0.027	0.10		µg/L	1	11/18/2014 05:33 PM
Manganese	ND	0.026	0.50		µg/L	1	11/18/2014 05:33 PM
Molybdenum	16	0.15	0.50		µg/L	1	11/18/2014 05:33 PM
Selenium	0.73	0.069	0.50		µg/L	1	11/18/2014 05:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-135-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	3.3	0.027	0.10		µg/L	1	11/18/2014 05:44 PM
Manganese	ND	0.026	0.50		µg/L	1	11/18/2014 05:44 PM
Molybdenum	26	0.15	0.50		µg/L	1	11/18/2014 05:44 PM
Selenium	0.55	0.069	0.50		µg/L	1	11/18/2014 05:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-030-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	3.8	0.027	0.10		µg/L	1	11/18/2014 05:55 PM
Manganese	15	0.026	0.50		µg/L	1	11/18/2014 05:55 PM
Molybdenum	19	0.15	0.50		µg/L	1	11/18/2014 05:55 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 05:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-025-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	23	0.027	0.10		µg/L	1	11/18/2014 06:07 PM
Manganese	360	0.13	2.5		µg/L	5	11/18/2014 06:23 PM
Molybdenum	7.6	0.15	0.50		µg/L	1	11/18/2014 06:07 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-075-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 11:01:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	13	0.027	0.10		µg/L	1	11/18/2014 06:40 PM
Manganese	690	0.13	2.5		µg/L	5	11/18/2014 06:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-43-090-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 12:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	2.9	0.13	0.50		µg/L	5	11/18/2014 06:56 PM
Manganese	800	0.13	2.5		µg/L	5	11/18/2014 06:56 PM
Molybdenum	25	0.76	2.5		µg/L	5	11/18/2014 06:56 PM
Selenium	ND	0.34	2.5		µg/L	5	11/18/2014 06:56 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-200
Lab Order:	N013831	**Collection Date:**	11/5/2014 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.4	0.027	0.10		µg/L	1	11/18/2014 07:02 PM
Manganese	ND	0.026	0.50		µg/L	1	11/18/2014 07:02 PM
Molybdenum	18	0.15	0.50		µg/L	1	11/18/2014 07:02 PM
Selenium	0.94	0.069	0.50		µg/L	1	11/18/2014 07:02 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	2.1	0.027	0.10		µg/L	1	11/18/2014 07:12 PM
Manganese	67	0.026	0.50		µg/L	1	11/18/2014 07:12 PM
Molybdenum	4.9	0.15	0.50		µg/L	1	11/18/2014 07:12 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 08:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 2:44:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	1.3	0.027	0.10		µg/L	1	11/18/2014 07:34 PM
Manganese	ND	0.026	0.50		µg/L	1	11/18/2014 07:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-028		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	18	0.027	0.10		µg/L	1	11/18/2014 07:45 PM
Manganese	18	0.026	0.50		µg/L	1	11/18/2014 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 9:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-030		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	3.6	0.027	0.10		µg/L	1	11/18/2014 07:56 PM
Manganese	870	0.13	2.5		µg/L	5	11/18/2014 08:01 PM
Molybdenum	23	0.15	0.50		µg/L	1	11/18/2014 07:56 PM
Selenium	ND	0.069	0.50		µg/L	1	11/18/2014 07:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-032		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141118B**	QC Batch: **47959**				PrepDate	**11/11/2014**	Analyst: **CEI**
Arsenic	1.3	0.13	0.50		µg/L	5	11/18/2014 08:34 PM
Manganese	360	0.13	2.5		µg/L	5	11/18/2014 08:34 PM
Molybdenum	31	0.76	2.5		µg/L	5	11/18/2014 08:34 PM
Selenium	5.2	0.34	2.5		µg/L	5	11/18/2014 08:34 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Nov-14*

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-47959** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **PBW** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-47959** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **LCSW** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.921	0.10	10.00	0	99.2	85	115				
Manganese	95.220	0.50	100.0	0	95.2	85	115				
Molybdenum	9.594	0.50	10.00	0	95.9	85	115				
Selenium	9.697	0.50	10.00	0	97.0	85	115				

Sample ID **N013831-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.970	0.10	10.00	10.81	102	75	125				
Molybdenum	14.744	0.50	10.00	3.556	112	75	125				
Selenium	9.819	0.50	10.00	0.07056	97.5	75	125				

Sample ID **N013831-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	432.051	2.5	100.0	332.8	99.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N013831-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.853	0.10	10.00	10.81	100	75	125	20.97	0.558	20	
Molybdenum	14.795	0.50	10.00	3.556	112	75	125	14.74	0.339	20	
Selenium	9.438	0.50	10.00	0.07056	93.7	75	125	9.819	3.96	20	

Sample ID **N013831-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	434.131	2.5	100.0	332.8	101	75	125	432.1	0.480	20	

Sample ID **N013831-014B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	33.697	0.10	10.00	22.90	108	75	125				
Molybdenum	18.929	0.50	10.00	7.588	113	75	125				
Selenium	9.828	0.50	10.00	0.09061	97.4	75	125				

Sample ID **N013831-014B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96853**
Client ID: **ZZZZZZ** Batch ID: **47959** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/18/2014** SeqNo: **1877677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	453.054	2.5	100.0	357.1	95.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:15 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-125-200	11/4/2014	8:30	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-129-200	11/4/2014	8:00	Water	X		X	X	X		X		X		X	X	X	X			4	
MW-24A-200	11/4/2014	14:06	Water	X		X		X		X				X			X			4	
MW-27-020-200	11/4/2014	10:47	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-27-020-200-EB	11/4/2014	8:47	Water	X				X											Hold	2	
MW-27-060-200	11/4/2014	15:31	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-27-060-200-EB	11/4/2014	14:38	Water	X				X											Hold	2	
MW-27-085-200	11/4/2014	12:50	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-41M-200	11/4/2014	9:14	Water	X		X	X	X		X		X		X	X	X	X			4	
MW-41S-200	11/4/2014	10:10	Water	X		X	X	X		X		X		X	X	X	X			4	
MW-201-200	11/5/2014	7:05	Water	X																1	
MW-31-135-200	11/5/2014	15:48	Water	X		X	X	X		X		X		X	X	X		X		4	
MW-42-030-200	11/5/2014	15:03	Water	X		X		X		X				X			X	X		5	
MW-43-025-200	11/5/2014	9:26	Water		X	X	X	X		X	X	X		X	X	X				5	

Please place the specified samples on Hold.

Shawn P. Duffy 11/07/14

	Signatures	Date/Time
Approved by		11-6-14 1710
Sampled by		
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		11/6/14@1920
Received by		

Shipping Details
Method of Shipment: courier
On Ice: yes no 3.4, 0.9, 2.7
Airbill No: 5.4 4.3
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:16 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
				Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
	DATE	TIME	Matrix																		
MW-43-025-200-EB	11/5/2014	8:43	Water	X				X											Hold	2	
MW-43-075-200	11/5/2014	11:01	Water		X	X		X	X		X			X						5	
MW-43-075-200-EB	11/5/2014	10:23	Water	X				X											Hold	2	
MW-43-090-200	11/5/2014	12:17	Water		X	X	X	X		X	X	X		X	X	X				5	
MW-43-090-200-EB	11/5/2014	11:25	Water	X				X											Hold	2	
MW-63-065-200	11/5/2014	8:32	Water	X		X		X		X				X			X			4	
MW-202-200	11/6/2014	7:55	Water	X																1	
MW-203-200	11/6/2014	8:00	Water	X																1	
MW-204-200	11/6/2014	15:45	Water	X																1	BEC
MW-34-055-200	11/6/2014	13:46	Water		X	X	X	X		X	X	X		X	X	X	X	X		7	
MW-34-055-200-EB	11/6/2014	13:00	Water	X				X											Hold	2	
MW-34-080-200	11/6/2014	14:44	Water		X	X		X	X		X			X						5	
MW-34-080-200-EB	11/6/2014	13:16	Water	X				X											Hold	2	
MW-42-055-200	11/6/2014	10:53	Water		X	X		X	X		X			X						5	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14@1713
Relinquished by		
Received by		11/6/14@1920

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 3.4, 0.2, 2.7
Airbill No: 5.4, 4.3 1R+2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:17 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-42-055-200-EB	11/6/2014	9:42	Water	X				X											Hold	2	
MW-42-065-200	11/6/2014	9:27	Water		X	X	X	X		X	X	X		X	X	X		X		6	
MW-48-200	11/6/2014	15:50	Water	X				X						X						3	
MW-71-035-200	11/6/2014	7:15	Water	X		X	X	X		X		X		X	X	X	X			4	
																			TOTAL NUMBER OF CONTAINERS	~~125~~ 118	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		11/6/14 @1920
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) no 3.4, 0.9, 2.7
Airbill No: 5, 4, 4, 3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:15 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-125-200	11/4/2014	8:30	Water		X	X	X	X		X	X		X	X	X	X	X		N0/3831-01	6	
MW-129-200	11/4/2014	8:00	Water	X		X	X	X		X		X		X	X	X	X		-02	4	
MW-24A-200	11/4/2014	14:06	Water	X		X		X		X				X			X		-03	4	
MW-27-020-200	11/4/2014	10:47	Water		X	X	X	X		X	X	X		X	X	X	X		-04	6	
MW-27-020-200-EB	11/4/2014	8:47	Water	X				X											-05	2	
MW-27-060-200	11/4/2014	15:31	Water		X	X	X	X		X	X		X	X	X	X	X		-06	6	pH
MW-27-060-200-EB	11/4/2014	14:38	Water	X				X											-07	2	
MW-27-085-200	11/4/2014	12:50	Water		X	X	X	X		X	X		X	X	X	X	X		-08	6	
MW-41M-200	11/4/2014	9:14	Water	X		X	X	X		X		X		X	X	X	X		-09	4	
MW-41S-200	11/4/2014	10:10	Water	X		X	X	X		X		X		X	X	X	X		-10	4	
MW-201-200	11/5/2014	7:05	Water	X															-11	1	
MW-31-135-200	11/5/2014	15:48	Water	X		X	X	X		X		X		X	X	X		X	-12	4	
MW-42-030-200	11/5/2014	15:03	Water	X		X		X		X				X			X	X	-13	5	
MW-43-025-200	11/5/2014	9:26	Water		X	X	X	X		X	X	X		X	X	X			-14	5	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		11/6/14@1920
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) no 3.4, 0.9, 2.7
Airbill No: 5.4, 4.3
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:16 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C		
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA		
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-43-025-200-EB	11/5/2014	8:43	Water	X				X											N013831-15	2	
MW-43-075-200	11/5/2014	11:01	Water		X	X		X	X		X			X					-16	5	
MW-43-075-200-EB	11/5/2014	10:23	Water	X				X											-17	2	
MW-43-090-200	11/5/2014	12:17	Water		X	X	X	X		X	X	X		X	X	X			-18	5	
MW-43-090-200-EB	11/5/2014	11:25	Water	X				X											-19	2	
MW-63-065-200	11/5/2014	8:32	Water	X		X		X		X				X			X		-20	4	
MW-202-200	11/6/2014	7:55	Water	X															-21	1	
MW-203-200	11/6/2014	8:00	Water	X															-22	1	
MW-204-200	11/6/2014	15:45	Water	X															-23	1	
MW-34-055-200	11/6/2014	13:46	Water		X	X	X	X		X	X	X		X	X	X	X	X	-24	8	
MW-34-055-200-EB	11/6/2014	13:00	Water	X				X											-25	2	
MW-34-080-200	11/6/2014	14:44	Water		X	X		X	X		X			X					-26	5	
MW-34-080-200-EB	11/6/2014	13:16	Water	X				X											-27	2	
MW-42-055-200	11/6/2014	10:53	Water		X	X		X	X		X			X					-28	5	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14@1713
Relinquished by		
Received by		11/6/14@1920

Shipping Details
Method of Shipment: courier
On Ice: yes / no 3.4, 0.2, 2.7
Airbill No: 5.4, 4.3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:17 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C		
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA		
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-42-055-200-EB	11/6/2014	9:42	Water	X				X											N013831-29	2	
MW-42-065-200	11/6/2014	9:27	Water		X	X	X	X		X	X	X		X	X	X		X	-30	6	
MW-48-200	11/6/2014	15:50	Water	X				X						X					-31	3	pH
MW-71-035-200	11/6/2014	7:15	Water	X		X	X	X		X		X		X	X	X	X		-32	4	
																		TOTAL NUMBER OF CONTAINERS		~~125~~ 118	

Signatures		Date/Time
Approved by		11-6-14 1710
Sampled by		
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		11/6/14 @1920
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) no 3.4, 0.9, 2.7
Airbill No: 5.4, 4.3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/6/2014	Workorder:	N013831
Rep sample Temp (Deg C):	3.4, 0.9, 2.7, 0.2, 5.4, 4.3	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: MBC MBC 11/7/2014

Reviewed By: 11/12/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler:

10-Nov-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N013831-012D / MW-31-135-200	Water	11/5/2014 3:48:00 PM	8OZP	1		
N013831-013E / MW-42-030-200	Water	11/5/2014 3:03:00 PM	8OZP	1		
N013831-024F / MW-34-055-200	Water	11/6/2014 1:46:00 PM	8OZP	1		
N013831-030E / MW-42-065-200	Water	11/6/2014 9:27:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13831A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen and Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)941-9227.

GSO# 526105287

	Date/Time		Date/Time
Relinquished by: jpg 11/10/14	17:00	**Received by:**	
Relinquished by:		**Received by:**	

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N013831-001D** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(53.7836-53.7199)*1000000}{100}$$
$$= 637$$

Reporting result in two significant figures,

TDS=640

11/20/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/10/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47928	100	54.3532	54.3533	1	1	1		
LCS-47928	100	53.6479	53.7484	1005	1	1005		
N013831-001D	100	53.7199	53.7836	637	1	637	975	0.653
N013831-002C	10	30.1419	30.2235	816	10	8160	13380	0.610
N013831-002C-DUP	10	31.3353	31.4207	854	10	8540	13380	0.638
N013831-004D	100	64.1016	64.1662	646	1	646	889	0.727
N013831-006D	100	56.0309	56.096	651	1	651	970	0.671
N013831-008D	20	30.5979	30.7142	1163	5	5815	8460	0.687
N013831-009C	10	30.9879	31.075	871	10	8710	13380	0.651
N013831-010C	30	31.4211	31.5133	922	3.33333	3073.33026	4930	0.623
N013831-012C	10	30.7152	30.7825	673	10	6730	10300	0.653
N013831-014D	100	63.7915	63.8953	1038	1	1038	1399	0.742
N013831-018D	10	30.7055	30.8161	1106	10	11060	15240	0.726

11/13/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/12/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47952	100	55.1694	55.17	6	1	6		
LCS-47952	100	54.9373	55.0426	1053	1	1053		
N013831-024D	100	55.3732	55.4368	636	1	636	844	0.754
N013831-030D	20	30.5898	30.6679	781	5	3905	5990	0.652
N013831-032C	10	30.8602	30.9658	1056	10	10560	14300	0.738
N013832-001C	10	30.6663	30.7851	1188	10	11880	19540	0.608
N013832-001C DUP	10	31.2249	31.3388	1139	10	11390	19540	0.583
N013832-002C	10	30.4969	30.6268	1299	10	12990	19750	0.658
N013832-003C	75	61.3082	61.3796	714	1.33333	951.99762	1531	0.622
N013832-004C	75	60.9801	61.0507	706	1.33333	941.33098	1553	0.606
N013835-033D	75	60.6285	60.7204	919	1.33333	1225.33027	1703	0.720
N013841-001A	50	60.6691	60.8014	1323	2	2646	2710	0.976

11/13/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013831-002A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 1.895 * 5

= 9.475

Reporting result in two significant figures,

Cr^{+6}, µg/L = 9.5

Nancy 11/24/2014

Sample Calculation

METHOD: EPA 218.6R
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013831-028A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.3467 * 1

= 0.3467

Reporting result in two significant figures,

Cr^{+6}, mg/L = 0.35

11/24/2014

Sample ID: **N013831-001D @ pH 7.96**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.65mL)

= **0.02146 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (15.10) (0.02146 N) (1) * 1000

=324.05 **mg/L**

Reporting results in two significant figures,

= 320 **mg/L** as CaCO3

11/24/2014

11/18/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02146 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (15.10 mL) (0.02146 N) (1) * 1000

= 324.05 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 324.05 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 320 **mg/L**

11/24/2014

11/18/2014

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Fluoride concentration, in mg/L, in the original sample as follows:

Fluoride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N013831-001D** concentration in mg/L is calculated as follows:

Fluoride, mg/L = 0.602 * 1

= 0.602

Reporting result in two significant figures,

Fluoride, mg/L = 0.60

Nancy 11/25/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A= mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013831-010B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 19.07693471 * 50 * (25/25) * 1000

= 953846.7

Reporting results in two significant figures,

Sodium, ug/L = 950000

11/25/2014

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013831
Test Method: EPA 6010
Analysis Date: 11/20/14

Matrix: Water
Batch No.: 47973

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013831-002B-DT 500X	Sodium	ug/L	2793629.58	PASS	2772821.419	0.75%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013831
Test Method: EPA 6010
Analysis Date: 11/21/14

Matrix: Water
Batch No.: 47973

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not appllicable for B. The calculated concentration is <25RL.
Dilution test failed for Fe.

Sample ID	Analyte	Units	Calc Val	OQual	SampRef Val	%DIFF	%DIFFlimit
N013831-001B-DT 5X	Boron	ug/L	111.5	NA	163.3	31.69%	10
N013831-001B-DT 5X	Calcium	ug/L	95952.2	PASS	97527.1	1.61%	10
N013831-001B-DT 5X	Iron	ug/L	589.5	FAIL	522.5	12.83%	10
N013831-001B-DT 5X	Magnesium	ug/L	21665.9	PASS	20964.5	3.35%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *24-Nov-14*

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013831-002B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2815691.313	50000	10000	2773000	429	80	120				S

Sample ID **N013831-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1879764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5475.038	100	5000	163.3	106	80	120				
Calcium	125513.567	500	10000	97530	280	80	120				S
Magnesium	33749.762	100	10000	20960	128	80	120				S

Sample ID **N013831-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	685.692	20	100.0	522.5	163	80	120				S

DT for Ca Mg @5x and Na @500x are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 11/25/2014

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013831-002B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 9.00478812829188 * 1 * (25/25)

= 9.00478812829188

Reporting results in two significant figures,

Chromium, ug/L = 9.0

Nancy 11/25/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013831
Test Method: EPA 6020
Analysis Date: 11/18/2014

Matrix: Water
Batch No.: 47959

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mo and Se. The calculated value is <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013831-001B-DT 5X	Chromium	µg/L	0	NA	0.12016823	100.00%	10
N013831-001B-DT 5X	Arsenic	µg/L	11.57059883	PASS	10.81023001	7.03%	10
N013831-001B-DT 25X	Manganese	µg/L	347.7471187	PASS	332.7647328	4.50%	10
N013831-001B-DT 5X	Molybdenum	µg/L	3.722399817	NA	3.556373968	4.67%	10
N013831-001B-DT 5X	Selenium	µg/L	0	NA	0.070562787	100.00%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N013831-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	96853
Client ID:	ZZZZZZ	Batch ID:	47959	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/18/2014	SeqNo:	1877644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.673	0.10	10.00	10.81	98.6	80	120				
Molybdenum	14.641	0.50	10.00	3.556	111	80	120				
Selenium	9.459	0.50	10.00	0.07056	93.9	80	120				

Sample ID	N013831-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	96853
Client ID:	ZZZZZZ	Batch ID:	47959	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/18/2014	SeqNo:	1877645

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	428.464	2.5	100.0	332.8	95.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N013831-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**96853**	
Client ID:	**ZZZZZZ**	Batch ID:	**47959**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**11/18/2014**		SeqNo:	**1877539**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.829	1.0	10.00	0.1202	97.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 09, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013831

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 06, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013831

CASE NARRATIVE

Analytical Comments for EPA 6010B_Dissolved_Addendum:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 2320B_Addendum:

Sample MW-34-080-200 (N013831-026) is past holding time when analysis was requested.

ASSET LABORATORIES
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"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 2:44:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141201A**	QC Batch: **R96965**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	280	1.2	5.0	H	mg/L	1	12/1/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0	H	mg/L	1	12/1/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0	H	mg/L	1	12/1/2014
Alkalinity, Total (As CaCO3)	280	1.2	5.0	H	mg/L	1	12/1/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96965** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96965**
Client ID: **LCSW** Batch ID: **R96965** TestNo: **SM 2320 B** Analysis Date: **12/1/2014** SeqNo: **1882966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.925	5.0	100.0	0	98.9	85	115				
Alkalinity, Total (As CaCO3)	103.226	5.0	100.0	0	103	85	115				

Sample ID **MB-R96965** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96965**
Client ID: **PBW** Batch ID: **R96965** TestNo: **SM 2320 B** Analysis Date: **12/1/2014** SeqNo: **1882967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013831-026D DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96965**
Client ID: **ZZZZZZ** Batch ID: **R96965** TestNo: **SM 2320 B** Analysis Date: **12/1/2014** SeqNo: **1882969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	281.720	5.0						283.9	0.760	30	H
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	H
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	H
Alkalinity, Total (As CaCO3)	281.720	5.0						283.9	0.760	30	H

Sample ID **N013831-026D MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96965**
Client ID: **ZZZZZZ** Batch ID: **R96965** TestNo: **SM 2320 B** Analysis Date: **12/1/2014** SeqNo: **1882970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	377.419	5.0	100.0	283.9	93.5	75	125				H
Alkalinity, Total (As CaCO3)	377.419	5.0	100.0	283.9	93.5	75	125				H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013831-026D MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96965**
Client ID: **ZZZZZZ** Batch ID: **R96965** TestNo: **SM 2320 B** Analysis Date: **12/1/2014** SeqNo: **1882971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	373.118	5.0	100.0	283.9	89.2	75	125	377.4	1.15	20	H
Alkalinity, Total (As CaCO3)	373.118	5.0	100.0	283.9	89.2	75	125	377.4	1.15	20	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-055-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 1:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141201B**	QC Batch: **48067**				PrepDate	**12/1/2014**	Analyst: **CEI**
Potassium	4000	84	500		ug/L	1	12/1/2014 05:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-200
Lab Order:	N013831	**Collection Date:**	11/6/2014 2:44:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013831-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141201C**	QC Batch: **48067**				PrepDate	**12/1/2014**	Analyst: **CEI**
Boron	840	19	100		ug/L	1	12/1/2014 08:26 PM
Calcium	240000	58	500		ug/L	1	12/1/2014 08:26 PM
Iron	110	1.3	20		ug/L	1	12/1/2014 08:26 PM
Magnesium	50000	11	100		ug/L	1	12/1/2014 08:26 PM
Potassium	12000	420	2500		ug/L	5	12/1/2014 05:54 PM
Sodium	1200000	3800	50000		ug/L	100	12/1/2014 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48067	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	PBW	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883415

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-48067	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	LCSW	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883416

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19584.576	500	20000	0	97.9	85	115				
Sodium	19568.962	500	20000	0	97.8	85	115				

Sample ID	N013934-012C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	ZZZZZZ	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883431

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	24871.139	2500	20000	4458	102	75	125				
Sodium	106639.442	2500	20000	88070	92.8	75	125				

Sample ID	N013934-012C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	ZZZZZZ	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	24987.748	2500	20000	4458	103	75	125	24870	0.468	20	
Sodium	107084.549	2500	20000	88070	95.1	75	125	106600	0.417	20	

Sample ID	LCS1-48067	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96979
Client ID:	LCSW	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883614

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4689.233	100	5000	0	93.8	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48067** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **LCSW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9525.001	500	10000	0	95.3	85	115				
Iron	111.334	20	100.0	0	111	85	115				
Magnesium	9629.993	100	10000	0	96.3	85	115				

Sample ID **N013908-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5694.528	100	5000	676.9	100	75	125				
Calcium	304553.756	500	10000	282900	216	75	125				S
Iron	151.828	20	100.0	7.431	144	75	125				S
Magnesium	37249.781	100	10000	27830	94.2	75	125				

Sample ID **N013908-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5714.678	100	5000	676.9	101	75	125	5695	0.353	20	
Calcium	306398.142	500	10000	282900	235	75	125	304600	0.604	20	S
Iron	149.091	20	100.0	7.431	142	75	125	151.8	1.82	20	S
Magnesium	37416.372	100	10000	27830	95.9	75	125	37250	0.446	20	

Sample ID **MB-48067** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **PBW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	7.437	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**MB-48067**	SampType:	**MBLK**	TestCode:	**6010_WDPG**	Units:	**ug/L**		Prep Date:	**12/1/2014**		RunNo:	**96979**		
Client ID:	**PBW**	Batch ID:	**48067**	TestNo:	**EPA 6010B**		**EPA 3010A**		Analysis Date:	**12/1/2014**		SeqNo:	**1883625**		
Analyte			Result	PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual
Magnesium			ND	100											

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:15 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

				Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix																		
MW-125-200	11/4/2014	8:30	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-129-200	11/4/2014	8:00	Water	X		X	X	X		X		X		X	X	X	X			4	
MW-24A-200	11/4/2014	14:06	Water	X		X		X		X				X			X			4	
MW-27-020-200	11/4/2014	10:47	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-27-020-200-EB	11/4/2014	8:47	Water	X				X											Hold	2	
MW-27-060-200	11/4/2014	15:31	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-27-060-200-EB	11/4/2014	14:38	Water	X				X											Hold	2	
MW-27-085-200	11/4/2014	12:50	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-41M-200	11/4/2014	9:14	Water	X		X	X	X		X		X		X	X	X	X			4	
MW-41S-200	11/4/2014	10:10	Water	X		X	X	X		X		X		X	X	X	X			4	
MW-201-200	11/5/2014	7:05	Water	X																1	
MW-31-135-200	11/5/2014	15:48	Water	X		X	X	X		X		X		X	X	X		X		4	
MW-42-030-200	11/5/2014	15:03	Water	X		X		X		X				X			X	X		5	
MW-43-025-200	11/5/2014	9:26	Water		X	X	X	X		X	X	X		X	X	X				5	

Please place the specified samples on Hold.
Shawn P. Duffy 11/07/14

Please make note of the added analytes on samples MW-34-50-200 and MW-34-80-200
Shawn P. Duffy 11/26/2014

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		11/6/14@1920
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) no 3.4, 0.9, 2.7
Airbill No: 5.4, 4.3
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:16 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
				Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
	DATE	TIME	Matrix																		
MW-43-025-200-EB	11/5/2014	8:43	Water	X				X											Hold	2	
MW-43-075-200	11/5/2014	11:01	Water		X	X		X	X		X			X						5	
MW-43-075-200-EB	11/5/2014	10:23	Water	X				X											Hold	2	
MW-43-090-200	11/5/2014	12:17	Water		X	X	X	X		X	X	X		X	X	X				5	
MW-43-090-200-EB	11/5/2014	11:25	Water	X				X											Hold	2	
MW-63-065-200	11/5/2014	8:32	Water	X		X		X		X				X			X			4	
MW-202-200	11/6/2014	7:55	Water	X																1	
MW-203-200	11/6/2014	8:00	Water	X																1	
MW-204-200	11/6/2014	15:45	Water	X																1	BEL
MW-34-055-200	11/6/2014	13:46	Water		X	X	X	X		X	X	X		X	X	X	X	X	Add K on the SW6010B	7	
MW-34-055-200-EB	11/6/2014	13:00	Water	X				X											Hold	2	
MW-34-080-200	11/6/2014	14:44	Water		X	X	X	X	X		X			X		X		X	Add K on the SW6010B	5	
MW-34-080-200-EB	11/6/2014	13:16	Water	X				X											Hold	2	
MW-42-055-200	11/6/2014	10:53	Water		X	X		X	X		X			X						5	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14@1713
Relinquished by		
Received by		11/6/14@1920

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 3.4, 0.2, 2.7
Airbill No: 5.4, 4.3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:17 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C		
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA		
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-42-055-200-EB	11/6/2014	9:42	Water	X				X											Hold	2	
MW-42-065-200	11/6/2014	9:27	Water		X	X	X	X		X	X	X		X	X	X		X		6	
MW-48-200	11/6/2014	15:50	Water	X				X						X						3	BLW
MW-71-035-200	11/6/2014	7:15	Water	X		X	X	X		X		X		X	X	X	X			4	
																			TOTAL NUMBER OF CONTAINERS	~~125~~ 118	

Signatures		Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		
Received by		11/6/14 @1920

Shipping Details

Method of Shipment: courier
On Ice: (yes) no 3.4, 0.9, 2.7
Airbill No: 5, 4, 4, 3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:15 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-125-200	11/4/2014	8:30	Water		X	X	X	X		X	X		X	X	X	X	X		N0/3831-01	6	
MW-129-200	11/4/2014	8:00	Water	X		X	X	X		X		X		X	X	X	X		-02	4	
MW-24A-200	11/4/2014	14:06	Water	X		X		X		X				X			X		-03	4	
MW-27-020-200	11/4/2014	10:47	Water		X	X	X	X		X	X	X		X	X	X	X		-04	6	
MW-27-020-200-EB	11/4/2014	8:47	Water	X				X											-05	2	
MW-27-060-200	11/4/2014	15:31	Water		X	X	X	X		X	X		X	X	X	X	X		-06	6	pH
MW-27-060-200-EB	11/4/2014	14:38	Water	X				X											-07	2	
MW-27-085-200	11/4/2014	12:50	Water		X	X	X	X		X	X		X	X	X	X	X		-08	6	
MW-41M-200	11/4/2014	9:14	Water	X		X	X	X		X		X		X	X	X	X		-09	4	
MW-41S-200	11/4/2014	10:10	Water	X		X	X	X		X		X		X	X	X	X		-10	4	
MW-201-200	11/5/2014	7:05	Water	X															-11	1	
MW-31-135-200	11/5/2014	15:48	Water	X		X	X	X		X		X		X	X	X		X	-12	4	
MW-42-030-200	11/5/2014	15:03	Water	X		X		X		X				X			X	X	-13	5	
MW-43-025-200	11/5/2014	9:26	Water		X	X	X	X		X	X	X		X	X	X			-14	5	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14 @1713
Relinquished by		11/6/14@1920
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes no 3.4, 0.9, 2.7
Airbill No: 5.4 4.3
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:16 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C		
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA		
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-43-025-200-EB	11/5/2014	8:43	Water	X				X											N013831-15	2	
MW-43-075-200	11/5/2014	11:01	Water		X	X		X	X		X			X					-16	5	
MW-43-075-200-EB	11/5/2014	10:23	Water	X				X											-17	2	
MW-43-090-200	11/5/2014	12:17	Water		X	X	X	X		X	X	X		X	X	X			-18	5	
MW-43-090-200-EB	11/5/2014	11:25	Water	X				X											-19	2	
MW-63-065-200	11/5/2014	8:32	Water	X		X		X		X				X			X		-20	4	
MW-202-200	11/6/2014	7:55	Water	X															-21	1	
MW-203-200	11/6/2014	8:00	Water	X															-22	1	
MW-204-200	11/6/2014	15:45	Water	X															-23	1	
MW-34-055-200	11/6/2014	13:46	Water		X	X	X	X		X	X	X		X	X	X	X	X	-24	8	
MW-34-055-200-EB	11/6/2014	13:00	Water	X				X											-25	2	
MW-34-080-200	11/6/2014	14:44	Water		X	X		X	X		X			X					-26	5	
MW-34-080-200-EB	11/6/2014	13:16	Water	X				X											-27	2	
MW-42-055-200	11/6/2014	10:53	Water		X	X		X	X		X			X					-28	5	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14@1713
Relinquished by		
Received by		11/6/14@1920

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 3.4, 0.2, 2.7
Airbill No: 5.4, 4.3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/6/2014 4:18:17 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 2

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C		
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA		
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-42-055-200-EB	11/6/2014	9:42	Water	X				X											N013831-29	2	
MW-42-065-200	11/6/2014	9:27	Water		X	X	X	X		X	X	X		X	X	X		X	-30	6	
MW-48-200	11/6/2014	15:50	Water	X				X						X					-31	3	pH
MW-71-035-200	11/6/2014	7:15	Water	X		X	X	X		X		X		X	X	X	X		-32	4	
																		TOTAL NUMBER OF CONTAINERS		~~125~~ 118	

Signatures		Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14 @ 1713
Relinquished by		
Received by		11/6/14 @ 1920

Shipping Details

Method of Shipment: courier
On Ice: (yes) no 3.4, 0.9, 2.7
Airbill No: 5, 4, 4, 3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/6/2014	Workorder:	N013831
Rep sample Temp (Deg C):	3.4, 0.9, 2.7, 0.2, 5.4, 4.3	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: MBC MBC 11/7/2014

Reviewed By: 11/12/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler:

10-Nov-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N013831-012D / MW-31-135-200	Water	11/5/2014 3:48:00 PM	8OZP	1		
N013831-013E / MW-42-030-200	Water	11/5/2014 3:03:00 PM	8OZP	1		
N013831-024F / MW-34-055-200	Water	11/6/2014 1:46:00 PM	8OZP	1		
N013831-030E / MW-42-065-200	Water	11/6/2014 9:27:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13831A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen and Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)941-9227.

GSO# 526105287

	Date/Time		Date/Time
Relinquished by: jpg 11/10/14	17:00	**Received by:**	
Relinquished by:		**Received by:**	

Sample ID: **N013831-026D @ pH 7.72**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.625mL)

= **0.02151 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (13.20) (0.02151 N) (1) * 1000

=283.87 **mg/L**

Reporting results in two significant figures,

= 280 **mg/L** as CaCO3

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02151 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (13.20 mL) (0.02151 N) (1) * 1000

= 283.87 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 283.87 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 280 **mg/L**

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A= mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013831-~~010B~~** 026B, the concentration in ug/L is calculated as follows:

Sodium, ug/L = ~~19.07693471 * 50~~ 11.8860*100 * (25/25) * 1000

= ~~953846.7~~ 1188600

Reporting results in two significant figures,

Sodium, ug/L = ~~950000~~ 1200000

Nancy 12/9/2014
for

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013831
Test Method: EPA 6010
Analysis Date: 12/01/14

Matrix: Water
Batch No.: 48067

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to K. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013934-012C-DT 25X	Potassium	ug/L	4709.774483	NA	4457.611834	5.66%	10
N013934-012C-DT 25X	Sodium	ug/L	84985.4492	PASS	88073.39075	3.51%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013831
Test Method: EPA 6010
Analysis Date: 12/01/14

Matrix: Water
Batch No.: 48067

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed ~~to~~ for Ca.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013908-001B-DT 5X	Boron	ug/L	725.173494	NA	676.8616025	7.14%	10
N013884-001B-DT 5X	Calcium	ug/L	246739.6535	FAIL	282947.1358	12.80%	10
N013884-001B-DT 5X	Iron	ug/L	25.39887671	NA	7.430695154	241.81%	10
N013884-001B-DT 5X	Magnesium	ug/L	27399.10918	PASS	27829.39391	1.55%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N013831
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N013934-012C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	96973
Client ID:	ZZZZZZ	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883428

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25131.026	2500	20000	4458	103	80	120				
Sodium	108280.753	2500	20000	88070	101	80	120				

Sample ID	N013908-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	96979
Client ID:	ZZZZZZ	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883620

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5648.876	100	5000	676.9	99.4	80	120				
Calcium	305422.803	500	10000	282900	225	80	120				S
Iron	151.859	20	100.0	7.431	144	80	120				S
Magnesium	37502.383	100	10000	27830	96.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

November 27, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP 2676
NV Cert. No.: NV-00922

Workorder No.: N013832

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 06, 2014 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary for samples N013832-001 and N013832-002 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium and Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) on QC sample N013835-007B-MS is outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N013832-001 and N013832-002 due to failed Internal Standard when samples were analyzed at no dilution.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

Date: *26-Nov-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013832
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013832-001A	MW-38D-200	Water	11/5/2014 2:06:00 PM	11/6/2014	11/27/2014
N013832-001B	MW-38D-200	Water	11/5/2014 2:06:00 PM	11/6/2014	11/27/2014
N013832-001C	MW-38D-200	Water	11/5/2014 2:06:00 PM	11/6/2014	11/27/2014
N013832-001D	MW-38D-200	Water	11/5/2014 2:06:00 PM	11/6/2014	11/27/2014
N013832-002A	MW-38D-200SMT	Water	11/5/2014 1:20:00 PM	11/6/2014	11/27/2014
N013832-002B	MW-38D-200SMT	Water	11/5/2014 1:20:00 PM	11/6/2014	11/27/2014
N013832-002C	MW-38D-200SMT	Water	11/5/2014 1:20:00 PM	11/6/2014	11/27/2014
N013832-002D	MW-38D-200SMT	Water	11/5/2014 1:20:00 PM	11/6/2014	11/27/2014
N013832-003A	MW-38S-200	Water	11/5/2014 12:22:00 PM	11/6/2014	11/27/2014
N013832-003B	MW-38S-200	Water	11/5/2014 12:22:00 PM	11/6/2014	11/27/2014
N013832-003C	MW-38S-200	Water	11/5/2014 12:22:00 PM	11/6/2014	11/27/2014
N013832-003D	MW-38S-200	Water	11/5/2014 12:22:00 PM	11/6/2014	11/27/2014
N013832-004A	MW-38S-200SMT	Water	11/5/2014 12:02:00 PM	11/6/2014	11/27/2014
N013832-004B	MW-38S-200SMT	Water	11/5/2014 12:02:00 PM	11/6/2014	11/27/2014
N013832-004C	MW-38S-200SMT	Water	11/5/2014 12:02:00 PM	11/6/2014	11/27/2014
N013832-004D	MW-38S-200SMT	Water	11/5/2014 12:02:00 PM	11/6/2014	11/27/2014

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107D**	QC Batch: **R96893**			PrepDate			Analyst: **AC**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	11/7/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107D**	QC Batch: **R96893**			PrepDate			Analyst: **AC**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	11/7/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107D**	QC Batch: **R96893**			PrepDate			Analyst: **AC**
Specific Conductance	1500	0.10	0.10		umhos/cm	1	11/7/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141107D**	QC Batch: **R96893**			PrepDate			Analyst: **AC**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	11/7/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *26-Nov-14*

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N013832-001CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**96893**
Client ID:	**ZZZZZZ**	Batch ID:	**R96893**	TestNo:	**EPA 120.1**			Analysis Date:	**11/7/2014**			SeqNo:	**1879561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19510.000	0.10						19540	0.154	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 702.307.2659 F: 702.307.2691

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ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	13000	100	100		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	950	13	13		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141111F**	QC Batch: **47952**				PrepDate	**11/11/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	940	13	13		mg/L	1	11/11/2014 08:12 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-47952** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/11/2014** RunNo: **96757**
Client ID: **PBW** Batch ID: **47952** TestNo: **SM2540C** Analysis Date: **11/11/2014** SeqNo: **1873107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-47952** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/11/2014** RunNo: **96757**
Client ID: **LCSW** Batch ID: **47952** TestNo: **SM2540C** Analysis Date: **11/11/2014** SeqNo: **1873108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1053.000	10	1000	0	105	80	120				

Sample ID **N013832-001C DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/11/2014** RunNo: **96757**
Client ID: **ZZZZZZ** Batch ID: **47952** TestNo: **SM2540C** Analysis Date: **11/11/2014** SeqNo: **1873119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	11390.000	100	0	0	0	0	0	11880	4.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	17	0.080	1.0		µg/L	5	11/13/2014 03:43 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141113A** QC Batch: **47960** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	15	0.030	1.0		µg/L	1	11/13/2014 02:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	18	0.080	1.0		µg/L	5	11/13/2014 04:21 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141113A** QC Batch: **47960** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	17	0.030	1.0		µg/L	1	11/13/2014 02:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 02:26 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141113A** QC Batch: **47960** PrepDate **11/11/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/13/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 02:46 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141113A** QC Batch: **47960**				PrepDate	**11/11/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/13/2014 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *26-Nov-14*

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96845** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **PBW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96845** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **LCSW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	90	110				

Sample ID **N013831-028A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.405	0.20	1.000	0.3467	106	90	110				

Sample ID **N013831-028A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.393	0.20						0.3467	12.4	20	

Sample ID **N013831-028A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.418	0.20	1.000	0.3467	107	90	110	1.405	0.900	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013832-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.06390	103	90	110				

Sample ID **N013832-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.109	0.20	1.000	0.08350	103	90	110				

Sample ID **N013831-031A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.489	1.0	5.000	0.3595	103	90	110				

Sample ID **N013831-032A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.267	1.0	5.000	1.154	102	90	110				

Sample ID **N013832-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.021	1.0	25.00	17.48	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013832-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.116	1.0	25.00	17.83	101	90	110				

Sample ID **N013831-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0.06000	102	90	110				

Sample ID **N013866-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.092	0.20	1.000	0.06010	103	90	110				

Sample ID **N013866-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	63.165	1.0	25.00	37.83	101	90	110				

Sample ID **N013866-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.702	1.0	25.00	5.257	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-47960	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/11/2014	RunNo:	96811
Client ID:	PBW	Batch ID:	47960	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/13/2014	SeqNo:	1875470

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-47960	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/11/2014	RunNo:	96811
Client ID:	LCSW	Batch ID:	47960	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/13/2014	SeqNo:	1875471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.194	1.0	10.00	0	102	85	115				

Sample ID	N013835-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/11/2014	RunNo:	96811
Client ID:	ZZZZZZ	Batch ID:	47960	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/13/2014	SeqNo:	1875479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.193	1.0	10.00	18.57	96.3	75	125				

Sample ID	N013835-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/11/2014	RunNo:	96811
Client ID:	ZZZZZZ	Batch ID:	47960	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/13/2014	SeqNo:	1875482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.065	1.0	10.00	18.57	95.0	75	125	28.19	0.457	20	

Sample ID	N013835-007B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/11/2014	RunNo:	96811
Client ID:	ZZZZZZ	Batch ID:	47960	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/13/2014	SeqNo:	1875494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	98.701	1.0	10.00	85.51	132	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	30	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	30	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	31	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	31	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	180	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	180	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013832
Project: PG&E Topock
Lab ID: N013832-004

Client Sample ID: MW-38S-200SMT
Collection Date: 11/5/2014 12:02:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141112C**	QC Batch: **R96751**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	180	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/12/2014 03:30 PM
Alkalinity, Total (As CaCO3)	180	1.2	5.0		mg/L	1	11/12/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *26-Nov-14*

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96751** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **LCSW** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	94.866	5.0	100.0	0	94.9	85	115				
Alkalinity, Total (As CaCO3)	103.795	5.0	100.0	0	104	85	115				

Sample ID **MB-R96751** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **PBW** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013831-012C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **ZZZZZZ** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	35.714	5.0						35.71	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	35.714	5.0						35.71	0	30	

Sample ID **N013831-012C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **ZZZZZZ** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	136.161	5.0	100.0	35.71	100	75	125				
Alkalinity, Total (As CaCO3)	136.161	5.0	100.0	35.71	100	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013831-012C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96751**
Client ID: **ZZZZZZ** Batch ID: **R96751** TestNo: **SM 2320 B** Analysis Date: **11/12/2014** SeqNo: **1872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	138.393	5.0	100.0	35.71	103	75	125	136.2	1.63	20	
Alkalinity, Total (As CaCO3)	138.393	5.0	100.0	35.71	103	75	125	136.2	1.63	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013832
Project: PG&E Topock
Lab ID: N013832-001

Client Sample ID: MW-38D-200
Collection Date: 11/5/2014 2:06:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/13/2014 12:11 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	7600	25	500		mg/L	1000	11/12/2014 11:59 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	690	3.3	50		mg/L	100	11/12/2014 11:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013832
Project: PG&E Topock
Lab ID: N013832-002

Client Sample ID: MW-38D-200SMT
Collection Date: 11/5/2014 1:20:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/13/2014 12:37 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	7700	25	500		mg/L	1000	11/13/2014 12:24 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	690	3.3	50		mg/L	100	11/12/2014 04:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013832
Project: PG&E Topock
Lab ID: N013832-003

Client Sample ID: MW-38S-200
Collection Date: 11/5/2014 12:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	0.58	0.028	0.50		mg/L	1	11/13/2014 01:02 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	280	1.2	25		mg/L	50	11/13/2014 12:49 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	160	1.6	25		mg/L	50	11/13/2014 12:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT: CH2M HILL
Lab Order: N013832
Project: PG&E Topock
Lab ID: N013832-004

Client Sample ID: MW-38S-200SMT
Collection Date: 11/5/2014 12:02:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Bromide	0.58	0.028	0.50		mg/L	1	11/13/2014 01:15 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Chloride	270	1.2	25		mg/L	50	11/12/2014 04:37 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141112A** QC Batch: **R96795**				PrepDate			Analyst: **PS**
Sulfate	170	0.66	10		mg/L	20	11/13/2014 01:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *26-Nov-14*

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96795_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **PBW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96795_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **LCSW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.503	0.50	2.500	0	100	90	110				

Sample ID **N013831-004D-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.079	0.50						0.07700	0	20	

Sample ID **N013831-004D-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.421	0.50	2.500	0.07700	93.8	80	120				

Sample ID **N013831-004D-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1875034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.405	0.50	2.500	0.07700	93.1	80	120	2.421	0.663	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**N013831-006D-DUP**	SampType:	**DUP**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96795**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96795**	TestNo:	**EPA 300.0**			Analysis Date:	**11/12/2014**		SeqNo:	**1875187**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.103	0.50						0.09700	0	20	

Sample ID	**N013831-006D-MS**	SampType:	**MS**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96795**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96795**	TestNo:	**EPA 300.0**			Analysis Date:	**11/12/2014**		SeqNo:	**1875188**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.338	0.50	2.500	0.09700	89.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R96795_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	PBW	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1874992

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R96795_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	LCSW	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1874993

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.415	0.50	2.500	0	96.6	90	110				

Sample ID	N013831-004D-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1874995

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	133.160	10	50.00	83.84	98.6	80	120				

Sample ID	N013831-004D-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1874996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	133.520	10	50.00	83.84	99.4	80	120	133.2	0.270	20	

Sample ID	N013831-006D-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875001

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	75.160	10						76.74	2.08	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N013831-006D-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1875002

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	126.420	10	50.00	76.74	99.4	80	120				

Sample ID	N013831-004D-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96795
Client ID:	ZZZZZZ	Batch ID:	R96795	TestNo:	EPA 300.0			Analysis Date:	11/12/2014	SeqNo:	1878994

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	83.560	10						83.84	0.335	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96795_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **PBW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96795_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **LCSW** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.768	0.50	5.000	0	95.4	90	110				

Sample ID **N013831-004D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	322.060	10	100.0	221.2	101	80	120				

Sample ID **N013831-004D-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	319.000	10	100.0	221.2	97.8	80	120	322.1	0.955	20	

Sample ID **N013831-006D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	109.120	10						110.4	1.20	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **N013831-006D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1874964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	208.100	10	100.0	110.4	97.7	80	120				

Sample ID **N013831-004D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96795**
Client ID: **ZZZZZZ** Batch ID: **R96795** TestNo: **EPA 300.0** Analysis Date: **11/12/2014** SeqNo: **1878995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	219.740	10						221.2	0.653	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.068	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET LABORATORIES
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ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141120H** QC Batch: **R96890** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R96890** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **PBW** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R96890** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **LCSW** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.982	0.050	1.000	0	98.2	85	115				

Sample ID **N013831-004EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **ZZZZZZ** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N013831-004EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **ZZZZZZ** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.039	0.050	1.000	0	104	85	115				

Sample ID **N013831-004EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96890**
Client ID: **ZZZZZZ** Batch ID: **R96890** TestNo: **SM4500-NO3** Analysis Date: **11/20/2014** SeqNo: **1879470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.086	0.050	1.000	0	109	85	115	1.039	4.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N013831-008EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96890
Client ID:	ZZZZZZ	Batch ID:	R96890	TestNo:	SM4500-NO3			Analysis Date:	11/20/2014	SeqNo:	1879473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	N013831-008EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96890
Client ID:	ZZZZZZ	Batch ID:	R96890	TestNo:	SM4500-NO3			Analysis Date:	11/20/2014	SeqNo:	1879474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.025	0.050	1.000	0	102	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	2200	19	100		ug/L	1	11/21/2014 03:38 PM
Calcium	400000	580	5000		ug/L	10	11/21/2014 04:55 PM
Iron	22	1.3	20		ug/L	1	11/24/2014 05:53 PM
Magnesium	6800	11	100		ug/L	1	11/24/2014 05:53 PM
Sodium	2400000	7500	100000		ug/L	200	11/20/2014 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	2300	19	100		ug/L	1	11/21/2014 03:44 PM
Calcium	440000	58	500		ug/L	1	11/21/2014 03:44 PM
Iron	ND	1.3	20		ug/L	1	11/21/2014 03:44 PM
Magnesium	5900	11	100		ug/L	1	11/21/2014 03:44 PM
Sodium	2300000	7500	100000		ug/L	200	11/20/2014 06:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	920	19	100		ug/L	1	11/21/2014 03:49 PM
Calcium	26000	58	500		ug/L	1	11/21/2014 03:49 PM
Iron	84	1.3	20		ug/L	1	11/21/2014 03:49 PM
Magnesium	4300	11	100		ug/L	1	11/21/2014 03:49 PM
Sodium	300000	940	12000		ug/L	25	11/20/2014 06:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141121A**	QC Batch: **47973**			PrepDate	**11/12/2014**		Analyst: **CEI**
Boron	990	19	100		ug/L	1	11/21/2014 03:54 PM
Calcium	28000	58	500		ug/L	1	11/21/2014 03:54 PM
Iron	82	1.3	20		ug/L	1	11/21/2014 03:54 PM
Magnesium	4600	11	100		ug/L	1	11/21/2014 03:54 PM
Sodium	300000	940	12000		ug/L	25	11/20/2014 06:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-47973** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **PBW** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-47973** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **LCSW** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10329.582	500	10000	0	103	85	115				

Sample ID **N013831-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2822336.516	50000	10000	2773000	495	75	125				S

Sample ID **N013831-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2926043.742	50000	10000	2773000	1530	75	125	2822000	3.61	20	S

Sample ID **N013831-030B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1315537.115	50000	10000	1293000	229	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-47973	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	PBW	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	65.553	500									
Magnesium	64.052	100									

Sample ID	LCS1-47973	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	LCSW	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.145	100	5000	0	94.6	85	115				
Calcium	9837.456	500	10000	0	98.4	85	115				
Magnesium	9970.588	100	10000	0	99.7	85	115				

Sample ID	N013831-001B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	ZZZZZZ	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879765

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5519.727	100	5000	163.3	107	75	125				
Calcium	125315.176	500	10000	97530	278	75	125				S
Magnesium	33776.423	100	10000	20960	128	75	125				S

Sample ID	N013831-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	11/12/2014	RunNo:	96902
Client ID:	ZZZZZZ	Batch ID:	47973	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1879766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5548.119	100	5000	163.3	108	75	125	5520	0.513	20	
Calcium	125533.094	500	10000	97530	280	75	125	125300	0.174	20	S
Magnesium	33787.446	100	10000	20960	128	75	125	33780	0.0326	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013831-024B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1879767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5212.716	100	5000	98.83	102	75	125				
Calcium	78234.610	500	10000	71950	62.8	75	125				S
Magnesium	27560.673	100	10000	19660	79.0	75	125				

Sample ID **LCS1-47973** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **LCSW** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.232	20	100.0	0	106	85	115				

Sample ID **N013831-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	685.455	20	100.0	522.5	163	75	125				S

Sample ID **N013831-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	686.088	20	100.0	522.5	164	75	125	685.5	0.0923	20	S

Sample ID **N013831-024B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/12/2014** RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	136.113	20	100.0	49.67	86.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**MB-47973**	SampType:	**MBLK**	TestCode:	**6010_WDPG**	Units:	**ug/L**		Prep Date:	**11/12/2014**		RunNo:	**96922**	
Client ID:	**PBW**	Batch ID:	**47973**	TestNo:	**EPA 6010B**	**EPA 3010A**			Analysis Date:	**11/24/2014**		SeqNo:	**1881176**	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Iron		16.177		20										

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 2:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141113A**	QC Batch: **47960**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	7.4	0.13	0.50		µg/L	5	11/13/2014 08:17 PM
Manganese	88	0.026	0.50		µg/L	1	11/13/2014 02:14 PM
Molybdenum	86	0.76	2.5		µg/L	5	11/13/2014 08:17 PM
Selenium	ND	1.7	12		µg/L	25	11/13/2014 09:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141113A**	QC Batch: **47960**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	7.0	0.13	0.50		µg/L	5	11/13/2014 08:22 PM
Manganese	73	0.026	0.50		µg/L	1	11/13/2014 02:19 PM
Molybdenum	90	0.76	2.5		µg/L	5	11/13/2014 08:22 PM
Selenium	ND	0.34	2.5		µg/L	5	11/13/2014 08:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141113A**	QC Batch: **47960**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	13	0.027	0.10		µg/L	1	11/13/2014 02:24 PM
Manganese	210	0.13	2.5		µg/L	5	11/13/2014 08:26 PM
Molybdenum	46	0.15	0.50		µg/L	1	11/13/2014 02:24 PM
Selenium	ND	0.069	0.50		µg/L	1	11/13/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Nov-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-200SMT
Lab Order:	N013832	**Collection Date:**	11/5/2014 12:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013832-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141113A**	QC Batch: **47960**			PrepDate	**11/11/2014**		Analyst: **CEI**
Arsenic	16	0.027	0.10		µg/L	1	11/13/2014 02:29 PM
Manganese	220	0.13	2.5		µg/L	5	11/13/2014 08:32 PM
Molybdenum	49	0.15	0.50		µg/L	1	11/13/2014 02:29 PM
Selenium	ND	0.069	0.50		µg/L	1	11/13/2014 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *26-Nov-14*

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-47960** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96811**
Client ID: **PBW** Batch ID: **47960** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/13/2014** SeqNo: **1875581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-47960** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96811**
Client ID: **LCSW** Batch ID: **47960** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/13/2014** SeqNo: **1875582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.192	0.10	10.00	0	102	85	115				
Manganese	97.639	0.50	100.0	0	97.6	85	115				
Molybdenum	9.888	0.50	10.00	0	98.9	85	115				
Selenium	10.038	0.50	10.00	0	100	85	115				

Sample ID **N013835-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96811**
Client ID: **ZZZZZZ** Batch ID: **47960** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/13/2014** SeqNo: **1875590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.907	0.10	10.00	2.809	101	75	125				
Manganese	91.981	0.50	100.0	0	92.0	75	125				
Molybdenum	15.119	0.50	10.00	4.829	103	75	125				
Selenium	10.307	0.50	10.00	0.1245	102	75	125				

Sample ID **N013835-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96811**
Client ID: **ZZZZZZ** Batch ID: **47960** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/13/2014** SeqNo: **1875593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.752	0.10	10.00	2.809	99.4	75	125	12.91	1.22	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N013835-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96811**
Client ID: **ZZZZZZ** Batch ID: **47960** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/13/2014** SeqNo: **1875593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	91.663	0.50	100.0	0	91.7	75	125	91.98	0.346	20	
Molybdenum	14.947	0.50	10.00	4.829	101	75	125	15.12	1.14	20	
Selenium	10.401	0.50	10.00	0.1245	103	75	125	10.31	0.910	20	

Sample ID **N013835-007B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/11/2014** RunNo: **96811**
Client ID: **ZZZZZZ** Batch ID: **47960** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/13/2014** SeqNo: **1875605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.485	0.10	10.00	3.810	107	75	125				
Manganese	94.482	0.50	100.0	0	94.5	75	125				
Molybdenum	14.279	0.50	10.00	3.031	112	75	125				
Selenium	10.702	0.50	10.00	0.1046	106	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/5/2014 3:45:23 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4SMT
Turnaround Time 10 Days
Shipping Date: 11/6/2014
COC Number: 3

			Container:	250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	NA	NA	NA	NA	NA			
			Holding Time:	28	180	180	7	7	7	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (SW6010B/SW6020Adis) Field Filtered Mo,Se,Mn,Cr,As	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (E353.3)		Number of Containers	COMMENTS
MW-38D-200	11/5/2014	14:06	Water	X	X	X	X	X	X	X	X	N01382-01	4	
MW-38D-200SMT	11/5/2014	13:20	Water	X	X	X	X	X	X	X	X	-02	4	
MW-38S-200	11/5/2014	12:22	Water	X	X	X	X	X	X	X	X	-03	4	
MW-38S-200SMT	11/5/2014	12:02	Water	X	X	X	X	X	X	X	X	-04	4	
												TOTAL NUMBER OF CONTAINERS	16	

	Signatures	Date/Time
Approved by		11-6-14
Sampled by		1710
Relinquished by		
Received by		11/6/14@1713
Relinquished by		11/6/14@1720
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 3.4, 0.2, 2.7
Airbill No: 5.4, 4.3 IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/6/2014	Workorder:	N013832
Rep sample Temp (Deg C):	0.2,2.7,3.4,4.3,5.4	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: MBC MBC 11/7/2014

Reviewed By: 11/12/14

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N013832-001C** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(30.7851-30.6663)*1000000}{10}$$
$$= 11{,}880$$

Reporting result in two significant figures,

TDS=12,000

11/20/2014

11/18/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/12/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47952	100	55.1694	55.17	6	1	6		
LCS-47952	100	54.9373	55.0426	1053	1	1053		
N013831-024D	100	55.3732	55.4368	636	1	636	844	0.754
N013831-030D	20	30.5898	30.6679	781	5	3905	5990	0.652
N013831-032C	10	30.8602	30.9658	1056	10	10560	14300	0.738
N013832-001C	10	30.6663	30.7851	1188	10	11880	19540	0.608
N013832-001C DUP	10	31.2249	31.3388	1139	10	11390	19540	0.583
N013832-002C	10	30.4969	30.6268	1299	10	12990	19750	0.658
N013832-003C	75	61.3082	61.3796	714	1.33333	951.99762	1531	0.622
N013832-004C	75	60.9801	61.0507	706	1.33333	941.33098	1553	0.606
N013835-033D	75	60.6285	60.7204	919	1.33333	1225.33027	1703	0.720
N013841-001A	50	60.6691	60.8014	1323	2	2646	2710	0.976

11/18/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013832-001A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 3.4967 * 5

= 17.4835

Reporting result in two significant figures,

Cr^{+6}, μg/L = 17

Nancy 11/24/2014

Sample ID: **N013832-001C @ pH 7.72**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.20mL)

= **0.02232 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (1.35) (0.02232 N) (1) * 1000

=30.132 **mg/L**

Reporting results in two significant figures,

= 30 **mg/L** as CaCO3

11/24/2014

11/19/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02232 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (1.35mL) (0.02232 N) (1) * 1000

= 30.132 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 30.132 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 30 **mg/L**

11/24/2014

11/19/2014

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N013832-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.882 * 100

= 688.2

Reporting result in two significant figures,

Sulfate, mg/L = 690

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013832-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 11.88045129 * 200 * (25/25) * 1000

= 2376090.258

Reporting results in two significant figures,

Sodium, ug/L = 2400000

11/26/2014

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013832
Test Method: EPA 6010
Analysis Date: 11/20/14

Matrix: Water
Batch No.: 47973

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013831-002B-DT 500X	Sodium	ug/L	2793629.58	PASS	2772821.419	0.75%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013832
Test Method: EPA 6010
Analysis Date: 11/21/14

Matrix: Water
Batch No.: 47973

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not appllicable for B. The calculated concentration is <25RL.
Dilution test failed for Fe.

Sample ID	Analyte	Units	Calc Val	OQual	SampRef Val	%DIFF	%DIFFlimit
N013831-001B-DT 5X	Boron	ug/L	111.5	NA	163.3	31.69%	10
N013831-001B-DT 5X	Calcium	ug/L	95952.2	PASS	97527.1	1.61%	10
N013831-001B-DT 5X	Iron	ug/L	589.5	FAIL	522.5	12.83%	10
N013831-001B-DT 5X	Magnesium	ug/L	21665.9	PASS	20964.5	3.35%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *24-Nov-14*

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013831-002B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96881**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/20/2014** SeqNo: **1879242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2815691.313	50000	10000	2773000	429	80	120				S

Sample ID **N013831-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1879764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5475.038	100	5000	163.3	106	80	120				
Calcium	125513.567	500	10000	97530	280	80	120				S
Magnesium	33749.762	100	10000	20960	128	80	120				S

Sample ID **N013831-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96902**
Client ID: **ZZZZZZ** Batch ID: **47973** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	685.692	20	100.0	522.5	163	80	120				S

DT for Ca Mg @5x and Na @500x are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

11/26/2014

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013832-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 15.4977096255426 * 1 * (25/25)

= 15.4977096255426

Reporting results in two significant figures,

Chromium, ug/L = 15

Nancy 11/25/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013832
Test Method: EPA 6020
Analysis Date: 11/13/2014

Matrix: Water
Batch No.: 47960

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn, Mo & Se. The calculated values are <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013835-001B-DT 5X	Chromium	µg/L	20.22574058	NA	18.56657322	8.94%	10
N013835-001B-DT 5X	Arsenic	µg/L	3.062815813	PASS	2.809259706	9.03%	10
N013835-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N013835-001B-DT 5X	Molybdenum	µg/L	4.985093924	NA	4.828816939	3.24%	10
N013835-001B-DT 5X	Selenium	µg/L	0	NA	0.124548117	100.00%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N013835-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**96811**
Client ID:	**ZZZZZZ**	Batch ID:	**47960**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**11/13/2014**		SeqNo:	**1875589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.752	0.10	10.00	2.809	99.4	80	120				
Manganese	90.863	0.50	100.0	0	90.9	80	120				
Molybdenum	15.095	0.50	10.00	4.829	103	80	120				
Selenium	10.323	0.50	10.00	0.1245	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013832
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N013835-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**96811**	
Client ID:	**ZZZZZZ**	Batch ID:	**47960**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**11/13/2014**		SeqNo:	**1875478**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.262	1.0	10.00	18.57	97.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 03, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013866

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 11, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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ASSET Laboratories **Date:** *03-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013866

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen and Deuterium were subcontracted to Zymax- Escondido,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N013866-011 nd N013866-020 due to matrix interference. Samples were analyzed at lower dilutions however matrix spikes were not recovered indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit.

Dilution was necessary for samples N013866-022 and N013866-024 due to matrix spike not meeting peak retention time criteria possibly due to matrix interference. Matrix spikes were analyzed with dilution and retention time met method criteria. Samples were reported at dilution that meet matrix spike peak retention time criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N013866-018 and N013866-026 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N013866-005B-MS and N013866-005B-MSD are outside recovery criteria for some analytes possibly due to matrix

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interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on samples N013866-010, N013866-011, N013866-020 and N013866-024 due to failed Internal Standard when samples were analyzed at no dilution.

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ASSET Laboratories

Date: *03-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013866
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013866-001A	MW-126-200	Water	11/10/2014 7:00:00 AM	11/11/2014	12/3/2014
N013866-001B	MW-126-200	Water	11/10/2014 7:00:00 AM	11/11/2014	12/3/2014
N013866-001C	MW-126-200	Water	11/10/2014 7:00:00 AM	11/11/2014	12/3/2014
N013866-001D	MW-126-200	Water	11/10/2014 7:00:00 AM	11/11/2014	12/3/2014
N013866-001E	MW-126-200	Water	11/10/2014 7:00:00 AM	11/11/2014	12/3/2014
N013866-002A	MW-21-200-EB	Water	11/10/2014 8:10:00 AM	11/11/2014	12/3/2014
N013866-003A	MW-23-060-200	Water	11/10/2014 1:22:00 PM	11/11/2014	12/3/2014
N013866-003B	MW-23-060-200	Water	11/10/2014 1:22:00 PM	11/11/2014	12/3/2014
N013866-003C	MW-23-060-200	Water	11/10/2014 1:22:00 PM	11/11/2014	12/3/2014
N013866-004A	MW-23-080-200	Water	11/10/2014 2:58:00 PM	11/11/2014	12/3/2014
N013866-004B	MW-23-080-200	Water	11/10/2014 2:58:00 PM	11/11/2014	12/3/2014
N013866-004C	MW-23-080-200	Water	11/10/2014 2:58:00 PM	11/11/2014	12/3/2014
N013866-005A	MW-29-200	Water	11/10/2014 1:45:00 PM	11/11/2014	12/3/2014
N013866-005B	MW-29-200	Water	11/10/2014 1:45:00 PM	11/11/2014	12/3/2014
N013866-005C	MW-29-200	Water	11/10/2014 1:45:00 PM	11/11/2014	12/3/2014
N013866-005D	MW-29-200	Water	11/10/2014 1:45:00 PM	11/11/2014	12/3/2014
N013866-005E	MW-29-200	Water	11/10/2014 1:45:00 PM	11/11/2014	12/3/2014
N013866-006A	MW-29-200-EB	Water	11/10/2014 12:50:00 PM	11/11/2014	12/3/2014
N013866-006B	MW-29-200-EB	Water	11/10/2014 12:50:00 PM	11/11/2014	12/3/2014
N013866-007A	MW-30-030-200	Water	11/10/2014 9:24:00 AM	11/11/2014	12/3/2014
N013866-007B	MW-30-030-200	Water	11/10/2014 9:24:00 AM	11/11/2014	12/3/2014
N013866-007C	MW-30-030-200	Water	11/10/2014 9:24:00 AM	11/11/2014	12/3/2014
N013866-007D	MW-30-030-200	Water	11/10/2014 9:24:00 AM	11/11/2014	12/3/2014
N013866-007E	MW-30-030-200	Water	11/10/2014 9:24:00 AM	11/11/2014	12/3/2014
N013866-008A	MW-30-030-200-EB	Water	11/10/2014 8:40:00 AM	11/11/2014	12/3/2014
N013866-008B	MW-30-030-200-EB	Water	11/10/2014 8:40:00 AM	11/11/2014	12/3/2014
N013866-009A	MW-30-050-200	Water	11/10/2014 10:35:00 AM	11/11/2014	12/3/2014
N013866-009B	MW-30-050-200	Water	11/10/2014 10:35:00 AM	11/11/2014	12/3/2014
N013866-009C	MW-30-050-200	Water	11/10/2014 10:35:00 AM	11/11/2014	12/3/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013866
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013866-009D	MW-30-050-200	Water	11/10/2014 10:35:00 AM	11/11/2014	12/3/2014
N013866-009E	MW-30-050-200	Water	11/10/2014 10:35:00 AM	11/11/2014	12/3/2014
N013866-010A	MW-57-185-200	Water	11/10/2014 11:34:00 AM	11/11/2014	12/3/2014
N013866-010B	MW-57-185-200	Water	11/10/2014 11:34:00 AM	11/11/2014	12/3/2014
N013866-010C	MW-57-185-200	Water	11/10/2014 11:34:00 AM	11/11/2014	12/3/2014
N013866-010D	MW-57-185-200	Water	11/10/2014 11:34:00 AM	11/11/2014	12/3/2014
N013866-011A	MW-127-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-011B	MW-127-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-011C	MW-127-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-011D	MW-127-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-012A	MW-15-200	Water	11/11/2014 9:16:00 AM	11/11/2014	12/3/2014
N013866-012B	MW-15-200	Water	11/11/2014 9:16:00 AM	11/11/2014	12/3/2014
N013866-012C	MW-15-200	Water	11/11/2014 9:16:00 AM	11/11/2014	12/3/2014
N013866-013A	MW-205-200	Water	11/11/2014 8:17:00 AM	11/11/2014	12/3/2014
N013866-014A	MW-206-200	Water	11/11/2014 8:15:00 AM	11/11/2014	12/3/2014
N013866-015A	MW-21-200	Water	11/11/2014 7:40:00 AM	11/11/2014	12/3/2014
N013866-015B	MW-21-200	Water	11/11/2014 7:40:00 AM	11/11/2014	12/3/2014
N013866-015C	MW-21-200	Water	11/11/2014 7:40:00 AM	11/11/2014	12/3/2014
N013866-015D	MW-21-200	Water	11/11/2014 7:40:00 AM	11/11/2014	12/3/2014
N013866-015E	MW-21-200	Water	11/11/2014 7:40:00 AM	11/11/2014	12/3/2014
N013866-016A	MW-28-025-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-016B	MW-28-025-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-016C	MW-28-025-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-016D	MW-28-025-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-016E	MW-28-025-200	Water	11/11/2014 8:20:00 AM	11/11/2014	12/3/2014
N013866-017A	MW-28-025-200-EB	Water	11/11/2014 7:33:00 AM	11/11/2014	12/3/2014
N013866-018A	MW-28-090-200	Water	11/11/2014 9:20:00 AM	11/11/2014	12/3/2014
N013866-018B	MW-28-090-200	Water	11/11/2014 9:20:00 AM	11/11/2014	12/3/2014
N013866-018C	MW-28-090-200	Water	11/11/2014 9:20:00 AM	11/11/2014	12/3/2014
N013866-018D	MW-28-090-200	Water	11/11/2014 9:20:00 AM	11/11/2014	12/3/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013866
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013866-018E	MW-28-090-200	Water	11/11/2014 9:20:00 AM	11/11/2014	12/3/2014
N013866-019A	MW-28-090-200-EB	Water	11/11/2014 8:13:00 AM	11/11/2014	12/3/2014
N013866-019B	MW-28-090-200-EB	Water	11/11/2014 8:13:00 AM	11/11/2014	12/3/2014
N013866-020A	MW-32-020-200	Water	11/11/2014 10:50:00 AM	11/11/2014	12/3/2014
N013866-020B	MW-32-020-200	Water	11/11/2014 10:50:00 AM	11/11/2014	12/3/2014
N013866-020C	MW-32-020-200	Water	11/11/2014 10:50:00 AM	11/11/2014	12/3/2014
N013866-020D	MW-32-020-200	Water	11/11/2014 10:50:00 AM	11/11/2014	12/3/2014
N013866-021A	MW-32-020-200-EB	Water	11/11/2014 10:21:00 AM	11/11/2014	12/3/2014
N013866-021B	MW-32-020-200-EB	Water	11/11/2014 10:21:00 AM	11/11/2014	12/3/2014
N013866-022A	MW-32-035-200	Water	11/11/2014 11:40:00 AM	11/11/2014	12/3/2014
N013866-022B	MW-32-035-200	Water	11/11/2014 11:40:00 AM	11/11/2014	12/3/2014
N013866-022C	MW-32-035-200	Water	11/11/2014 11:40:00 AM	11/11/2014	12/3/2014
N013866-022D	MW-32-035-200	Water	11/11/2014 11:40:00 AM	11/11/2014	12/3/2014
N013866-022E	MW-32-035-200	Water	11/11/2014 11:40:00 AM	11/11/2014	12/3/2014
N013866-023A	MW-32-035-200-EB	Water	11/11/2014 10:48:00 AM	11/11/2014	12/3/2014
N013866-023B	MW-32-035-200-EB	Water	11/11/2014 10:48:00 AM	11/11/2014	12/3/2014
N013866-024A	MW-33-040-200	Water	11/11/2014 1:32:00 PM	11/11/2014	12/3/2014
N013866-024B	MW-33-040-200	Water	11/11/2014 1:32:00 PM	11/11/2014	12/3/2014
N013866-024C	MW-33-040-200	Water	11/11/2014 1:32:00 PM	11/11/2014	12/3/2014
N013866-024D	MW-33-040-200	Water	11/11/2014 1:32:00 PM	11/11/2014	12/3/2014
N013866-024E	MW-33-040-200	Water	11/11/2014 1:32:00 PM	11/11/2014	12/3/2014
N013866-025A	MW-33-040-200-EB	Water	11/11/2014 12:48:00 PM	11/11/2014	12/3/2014
N013866-025B	MW-33-040-200-EB	Water	11/11/2014 12:48:00 PM	11/11/2014	12/3/2014
N013866-026A	MW-47-055-200	Water	11/11/2014 1:48:00 PM	11/11/2014	12/3/2014
N013866-026B	MW-47-055-200	Water	11/11/2014 1:48:00 PM	11/11/2014	12/3/2014
N013866-026C	MW-47-055-200	Water	11/11/2014 1:48:00 PM	11/11/2014	12/3/2014
N013866-026D	MW-47-055-200	Water	11/11/2014 1:48:00 PM	11/11/2014	12/3/2014
N013866-027A	MW-50-095-200	Water	11/11/2014 11:34:00 AM	11/11/2014	12/3/2014
N013866-027B	MW-50-095-200	Water	11/11/2014 11:34:00 AM	11/11/2014	12/3/2014
N013866-027C	MW-50-095-200	Water	11/11/2014 11:34:00 AM	11/11/2014	12/3/2014

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"Serving Clients with Passion and Professionalism"

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 2:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	37000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-15-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 7:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	9300	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	6200	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-020-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 10:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	37000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	4600	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141112D**	QC Batch: **R96755**			PrepDate			Analyst: **AC**
Specific Conductance	4900	0.10	0.10		umhos/cm	1	11/12/2014 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N013866-001CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96755**
Client ID: **ZZZZZZ** Batch ID: **R96755** TestNo: **EPA 120.1** Analysis Date: **11/12/2014** SeqNo: **1872945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1020.000	0.10						1026	0.587	10	

Sample ID **N013866-016DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96755**
Client ID: **ZZZZZZ** Batch ID: **R96755** TestNo: **EPA 120.1** Analysis Date: **11/12/2014** SeqNo: **1872956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1015.000	0.10						1017	0.197	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141113F**	QC Batch: **47978**				PrepDate	**11/13/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	700	10	10		mg/L	1	11/13/2014 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141113F**	QC Batch: **47978**				PrepDate	**11/13/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1500	17	17		mg/L	1	11/13/2014 07:59 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141113F**	QC Batch: **47978**				PrepDate	**11/13/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	5800	100	100		mg/L	1	11/13/2014 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141113F**	QC Batch: **47978**				PrepDate	**11/13/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	700	10	10		mg/L	1	11/13/2014 07:59 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-15-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141113F**	QC Batch: **47978**				PrepDate	**11/13/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1100	13	13		mg/L	1	11/13/2014 07:59 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 7:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141113F**	QC Batch: **47978**				PrepDate	**11/13/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	5900	100	100		mg/L	1	11/13/2014 07:59 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	730	10	10		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	5800	100	100		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	8000	100	100		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**			PrepDate	**11/18/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3000	33	33		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-47978** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/13/2014** RunNo: **96794**
Client ID: **PBW** Batch ID: **47978** TestNo: **SM2540C** Analysis Date: **11/13/2014** SeqNo: **1874933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-47978** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/13/2014** RunNo: **96794**
Client ID: **LCSW** Batch ID: **47978** TestNo: **SM2540C** Analysis Date: **11/13/2014** SeqNo: **1874934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1035.000	10	1000	0	104	80	120				

Sample ID **N013871-001FDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/13/2014** RunNo: **96794**
Client ID: **ZZZZZZ** Batch ID: **47978** TestNo: **SM2540C** Analysis Date: **11/13/2014** SeqNo: **1874942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	347.000	10						338.0	2.63	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-47991	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/18/2014	RunNo:	96850
Client ID:	PBW	Batch ID:	47991	TestNo:	SM2540C			Analysis Date:	11/18/2014	SeqNo:	1877399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-47991	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/18/2014	RunNo:	96850
Client ID:	LCSW	Batch ID:	47991	TestNo:	SM2540C			Analysis Date:	11/18/2014	SeqNo:	1877400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1015.000	10	1000	0	102	80	120				

Sample ID	N013866-016D-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/18/2014	RunNo:	96850
Client ID:	ZZZZZZ	Batch ID:	47991	TestNo:	SM2540C			Analysis Date:	11/18/2014	SeqNo:	1877402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	745.000	10						734.0	1.49	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 05:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 04:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	38	0.080	1.0		µg/L	5	11/13/2014 06:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	32	0.030	1.0		µg/L	1	11/21/2014 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 2:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141113A** QC Batch: **R96845** PrepDate							Analyst: **RB**
Hexavalent Chromium	5.3	0.080	1.0		µg/L	5	11/13/2014 06:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	5.2	0.030	1.0		µg/L	1	11/21/2014 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141113A**	QC Batch: **R96845**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/13/2014 06:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141114A**	QC Batch: **R96847**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.21	0.016	0.20		µg/L	1	11/14/2014 04:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 11:25 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141121A** QC Batch: **47996**				PrepDate	**11/14/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 05:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847**				PrepDate			Analyst: **RB**
Hexavalent Chromium	9.5	0.080	1.0		µg/L	5	11/14/2014 12:45 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141121A** QC Batch: **47996**				PrepDate	**11/14/2014**		Analyst: **CEI**
Chromium	8.9	0.030	1.0		µg/L	1	11/21/2014 06:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	11/14/2014 12:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	11/21/2014 06:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-15-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847** PrepDate							Analyst: **RB**
Hexavalent Chromium	13	0.032	0.40		µg/L	2	11/14/2014 05:25 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	13	0.030	1.0		µg/L	1	11/21/2014 06:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-205-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:17:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A**	QC Batch: **R96847**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 01:43 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-206-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A**	QC Batch: **R96847**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 02:02 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 7:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847** PrepDate							Analyst: **RB**
Hexavalent Chromium	2.4	0.016	0.20		µg/L	1	11/14/2014 02:52 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	2.7	0.030	1.0		µg/L	1	11/21/2014 06:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 03:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 06:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141114A** QC Batch: **R96847** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 03:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 07:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-020-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 10:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141118A** QC Batch: **R96852** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	11/18/2014 12:48 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	11/21/2014 07:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141118A** QC Batch: **R96852** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	11/18/2014 01:08 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 07:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141118A** QC Batch: **R96852** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	11/18/2014 04:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/21/2014 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-026

Client Sample ID: MW-47-055-200
Collection Date: 11/11/2014 1:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141118A** QC Batch: **R96852** PrepDate							Analyst: **RB**
Hexavalent Chromium	16	0.032	0.40		µg/L	2	11/18/2014 01:31 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	16	0.030	1.0		µg/L	1	11/21/2014 08:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141118A** QC Batch: **R96852** PrepDate							Analyst: **RB**
Hexavalent Chromium	13	0.032	0.40		µg/L	2	11/18/2014 04:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141121A** QC Batch: **47996** PrepDate **11/14/2014**							Analyst: **CEI**
Chromium	12	0.030	1.0		µg/L	1	11/21/2014 08:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *03-Dec-14*

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96845** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **PBW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96845** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **LCSW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	90	110				

Sample ID **N013831-028A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1876997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.405	0.20	1.000	0.3467	106	90	110				

Sample ID **N013831-028A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.393	0.20						0.3467	12.4	20	

Sample ID **N013831-028A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.418	0.20	1.000	0.3467	107	90	110	1.405	0.900	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013832-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.06390	103	90	110				

Sample ID **N013832-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.109	0.20	1.000	0.08350	103	90	110				

Sample ID **N013831-031A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.489	1.0	5.000	0.3595	103	90	110				

Sample ID **N013831-032A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.267	1.0	5.000	1.154	102	90	110				

Sample ID **N013832-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.021	1.0	25.00	17.48	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013832-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.116	1.0	25.00	17.83	101	90	110				

Sample ID **N013831-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0.06000	102	90	110				

Sample ID **N013866-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.092	0.20	1.000	0.06010	103	90	110				

Sample ID **N013866-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	63.165	1.0	25.00	37.83	101	90	110				

Sample ID **N013866-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.702	1.0	25.00	5.257	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96847** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **PBW** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96847** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **LCSW** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	90	110				

Sample ID **N013866-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.143	0.20	1.000	0.09540	105	90	110				

Sample ID **N013866-010A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.549	1.0						9.479	0.736	20	

Sample ID **N013866-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.640	1.0	25.00	9.479	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013866-010A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.888	1.0	25.00	9.479	102	90	110	34.64	0.713	20	

Sample ID **N013866-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.053	0.20	1.000	0.04030	101	90	110				

Sample ID **N013866-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0.03630	104	90	110				

Sample ID **N013866-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.334	0.40	10.00	13.14	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96852** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **PBW** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96852** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **LCSW** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	0.20	5.000	0	99.6	90	110				

Sample ID **N013866-026A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.493	0.40						16.47	0.152	20	

Sample ID **N013866-026A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.974	0.40	10.00	16.47	95.1	90	110				

Sample ID **N013866-026A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.211	0.40	10.00	16.47	97.4	90	110	25.97	0.907	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013831-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.884	0.40	10.00	17.28	106	90	110				

Sample ID **N013866-027A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	22.151	0.40	10.00	12.66	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96845** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **PBW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96845** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **LCSW** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	90	110				

Sample ID **N013831-024A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.08050	102	90	110				

Sample ID **N013831-026A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.03630	102	90	110				

Sample ID **N013831-028A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.405	0.20	1.000	0.3467	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013831-030A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0.03990	104	90	110				

Sample ID **N013831-028A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.393	0.20						0.3467	12.4	20	

Sample ID **N013831-028A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.418	0.20	1.000	0.3467	107	90	110	1.405	0.900	20	

Sample ID **N013866-005A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96845**
Client ID: **ZZZZZZ** Batch ID: **R96845** TestNo: **EPA 218.6** Analysis Date: **11/13/2014** SeqNo: **1877123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0.05300	97.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96847** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **PBW** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96847** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **LCSW** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	90	110				

Sample ID **N013866-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.023	1.0	5.000	0	100	90	110				

Sample ID **N013866-010A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.549	1.0						9.479	0.736	20	

Sample ID **N013866-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.640	1.0	25.00	9.479	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013866-010A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.888	1.0	25.00	9.479	102	90	110	34.64	0.713	20	

Sample ID **N013866-015A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.452	0.20	1.000	2.419	103	90	110				

Sample ID **N013866-016A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0.03160	103	90	110				

Sample ID **N013866-018A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	90	110				

Sample ID **N013866-007A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96847**
Client ID: **ZZZZZZ** Batch ID: **R96847** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.237	0.20	1.000	0.2137	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID	MB-R96852	SampType:	MBLK	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	96852
Client ID:	PBW	Batch ID:	R96852	TestNo:	EPA 218.6			Analysis Date:	11/18/2014	SeqNo:	1877460

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R96852	SampType:	LCS	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	96852
Client ID:	LCSW	Batch ID:	R96852	TestNo:	EPA 218.6			Analysis Date:	11/18/2014	SeqNo:	1877461

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	0.20	5.000	0	99.6	90	110				

Sample ID	N013866-020A-MS	SampType:	MS	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	96852
Client ID:	ZZZZZZ	Batch ID:	R96852	TestNo:	EPA 218.6			Analysis Date:	11/18/2014	SeqNo:	1877463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.744	1.0	5.000	0	94.9	90	110				

Sample ID	N013866-022A-MS	SampType:	MS	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	96852
Client ID:	ZZZZZZ	Batch ID:	R96852	TestNo:	EPA 218.6			Analysis Date:	11/18/2014	SeqNo:	1877465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.370	1.0	5.000	0	107	90	110				

Sample ID	N013866-026A-DUP	SampType:	DUP	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	96852
Client ID:	ZZZZZZ	Batch ID:	R96852	TestNo:	EPA 218.6			Analysis Date:	11/18/2014	SeqNo:	1877467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.493	0.40						16.47	0.152	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013866-026A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.974	0.40	10.00	16.47	95.1	90	110				

Sample ID **N013866-026A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.211	0.40	10.00	16.47	97.4	90	110	25.97	0.907	20	

Sample ID **N013866-024A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96852**
Client ID: **ZZZZZZ** Batch ID: **R96852** TestNo: **EPA 218.6** Analysis Date: **11/18/2014** SeqNo: **1877475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.638	1.0	5.000	0.2630	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-47996	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/14/2014	RunNo:	96905
Client ID:	PBW	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-47996	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/14/2014	RunNo:	96905
Client ID:	LCSW	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.558	1.0	10.00	0	95.6	85	115				

Sample ID	N013866-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/14/2014	RunNo:	96905
Client ID:	ZZZZZZ	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880077

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.844	1.0	10.00	0.3556	94.9	75	125				

Sample ID	N013866-001B-MSD	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/14/2014	RunNo:	96905
Client ID:	ZZZZZZ	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.837	1.0	10.00	0.3556	94.8	75	125	9.844	0.0724	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	160	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	420	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	420	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	970	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	970	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	190	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	190	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-15-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	77	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	77	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 7:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	810	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	810	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	200	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	200	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	260	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	260	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	550	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	550	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141114B**	QC Batch: **R96796**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	420	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/14/2014 01:15 PM
Alkalinity, Total (As CaCO3)	420	1.2	5.0		mg/L	1	11/14/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	62	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	62	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	55	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	55	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96796** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96796**
Client ID: **LCSW** Batch ID: **R96796** TestNo: **SM 2320 B** Analysis Date: **11/14/2014** SeqNo: **1875086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.291	5.0	100.0	0	98.3	85	115				
Alkalinity, Total (As CaCO3)	98.291	5.0	100.0	0	98.3	85	115				

Sample ID **MB-R96796** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96796**
Client ID: **PBW** Batch ID: **R96796** TestNo: **SM 2320 B** Analysis Date: **11/14/2014** SeqNo: **1875087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013866-001C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96796**
Client ID: **ZZZZZZ** Batch ID: **R96796** TestNo: **SM 2320 B** Analysis Date: **11/14/2014** SeqNo: **1875089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	162.393	5.0						163.5	0.656	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	162.393	5.0						163.5	0.656	30	

Sample ID **N013866-001C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96796**
Client ID: **ZZZZZZ** Batch ID: **R96796** TestNo: **SM 2320 B** Analysis Date: **11/14/2014** SeqNo: **1875090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	282.051	5.0	100.0	163.5	119	75	125				
Alkalinity, Total (As CaCO3)	282.051	5.0	100.0	163.5	119	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013866-001C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96796**
Client ID: **ZZZZZZ** Batch ID: **R96796** TestNo: **SM 2320 B** Analysis Date: **11/14/2014** SeqNo: **1875091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	287.393	5.0	100.0	163.5	124	75	125	282.1	1.88	20	
Alkalinity, Total (As CaCO3)	287.393	5.0	100.0	163.5	124	75	125	282.1	1.88	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96828** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **LCSW** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.501	5.0	100.0	0	98.5	85	115				
Alkalinity, Total (As CaCO3)	100.642	5.0	100.0	0	101	85	115				

Sample ID **MB-R96828** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **PBW** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013866-026C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **ZZZZZZ** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	65.310	5.0						62.10	5.04	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	65.310	5.0						62.10	5.04	30	

Sample ID **N013866-026C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **ZZZZZZ** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	148.822	5.0	100.0	62.10	86.7	75	125				
Alkalinity, Total (As CaCO3)	148.822	5.0	100.0	62.10	86.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013866-026C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **ZZZZZZ** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	149.893	5.0	100.0	62.10	87.8	75	125	148.8	0.717	20	
Alkalinity, Total (As CaCO3)	149.893	5.0	100.0	62.10	87.8	75	125	148.8	0.717	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-001

Client Sample ID: MW-126-200
Collection Date: 11/10/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 03:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Chloride	120	0.50	10		mg/L	20	11/17/2014 05:24 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	200	0.66	10		mg/L	20	11/17/2014 05:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-005

Client Sample ID: MW-29-200
Collection Date: 11/10/2014 1:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 03:31 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Chloride	270	1.2	25		mg/L	50	11/17/2014 02:19 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	420	1.6	25		mg/L	50	11/17/2014 02:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-007

Client Sample ID: MW-30-030-200
Collection Date: 11/10/2014 9:24:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	0.70	0.028	0.50		mg/L	1	11/17/2014 04:09 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Chloride	2200	12	250		mg/L	500	11/17/2014 03:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	1700	6.6	100		mg/L	200	11/17/2014 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-009

Client Sample ID: MW-30-050-200
Collection Date: 11/10/2014 10:35:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 04:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Chloride	120	0.50	10		mg/L	20	11/17/2014 02:44 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	200	0.66	10		mg/L	20	11/17/2014 02:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-012

Client Sample ID: MW-15-200
Collection Date: 11/11/2014 9:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 07:43 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	440	2.5	50		mg/L	100	11/18/2014 09:20 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	140	0.66	10		mg/L	20	11/17/2014 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-015

Client Sample ID: MW-21-200
Collection Date: 11/11/2014 7:40:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	2.1	0.028	0.50		mg/L	1	11/17/2014 08:09 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	1900	12	250		mg/L	500	11/18/2014 05:58 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	1700	6.6	100		mg/L	200	11/17/2014 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-016

Client Sample ID: MW-28-025-200
Collection Date: 11/11/2014 8:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 07:56 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Chloride	91	0.50	10		mg/L	20	11/17/2014 08:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	250	0.66	10		mg/L	20	11/17/2014 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-018

Client Sample ID: MW-28-090-200
Collection Date: 11/11/2014 9:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/17/2014 09:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	1800	12	250		mg/L	500	11/18/2014 09:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141120A** QC Batch: **R96884**				PrepDate			Analyst: **PS**
Fluoride	4.9	0.11	1.0		mg/L	10	11/20/2014 11:20 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	550	3.3	50		mg/L	100	11/17/2014 08:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-022

Client Sample ID: MW-32-035-200
Collection Date: 11/11/2014 11:40:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	3100	12	250		mg/L	500	11/18/2014 09:07 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	1500	6.6	100		mg/L	200	11/17/2014 09:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-024

Client Sample ID: MW-33-040-200
Collection Date: 11/11/2014 1:32:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 10:15 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	4000	12	250		mg/L	500	11/18/2014 04:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141120A** QC Batch: **R96884**				PrepDate			Analyst: **PS**
Fluoride	19	0.11	1.0		mg/L	10	11/20/2014 11:33 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	1500	3.3	50		mg/L	100	11/17/2014 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-026

Client Sample ID: MW-47-055-200
Collection Date: 11/11/2014 1:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/17/2014 10:28 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	1400	12	250		mg/L	500	11/18/2014 05:07 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	260	0.66	10		mg/L	20	11/17/2014 09:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-027

Client Sample ID: MW-50-095-200
Collection Date: 11/11/2014 11:34:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 10:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	1400	12	250		mg/L	500	11/18/2014 05:45 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	280	0.66	10		mg/L	20	11/17/2014 10:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96819_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96819_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.626	0.50	2.500	0	105	90	110				

Sample ID **N013866-001C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.067	0.50						0.08000	0	20	

Sample ID **N013866-001C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.456	0.50	2.500	0.08000	95.0	80	120				

Sample ID **N013866-009C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.485	0.50	2.500	0.09200	95.7	80	120	2.431	2.20	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**N013866-009C-MS**	SampType:	**MS**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96819**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96819**	TestNo:	**EPA 300.0**			Analysis Date:	**11/17/2014**		SeqNo:	**1877784**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.431	0.50	2.500	0.09200	93.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R96819_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	PBW	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877805

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R96819_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	LCSW	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877806

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.560	0.50	2.500	0	102	90	110				

Sample ID	N013866-001C-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	ZZZZZZ	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877820

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	169.100	10	50.00	115.7	107	80	120				

Sample ID	N013866-001C-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	ZZZZZZ	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	117.600	10						115.7	1.63	20	

Sample ID	N013866-001C-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	ZZZZZZ	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	168.980	10	50.00	115.7	107	80	120	169.1	0.0710	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96834_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **PBW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R96834_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **LCSW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.557	0.50	2.500	0	102	90	110				

Sample ID **N013866-015D-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3283.000	250	1250	1940	107	80	120				

Sample ID **N013866-015D-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3245.500	250	1250	1940	104	80	120	3283	1.15	20	

Sample ID **N013866-015D-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1949.000	250						1940	0.437	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R96884_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96884
Client ID:	PBW	Batch ID:	R96884	TestNo:	EPA 300.0			Analysis Date:	11/20/2014	SeqNo:	1879284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R96884_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96884
Client ID:	LCSW	Batch ID:	R96884	TestNo:	EPA 300.0			Analysis Date:	11/20/2014	SeqNo:	1879285

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.531	0.10	2.500	0	101	90	110				

Sample ID	N013866-018D-MS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96884
Client ID:	ZZZZZZ	Batch ID:	R96884	TestNo:	EPA 300.0			Analysis Date:	11/20/2014	SeqNo:	1879290

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.790	1.0	10.00	4.860	89.3	80	120				

Sample ID	N013866-018D-DUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96884
Client ID:	ZZZZZZ	Batch ID:	R96884	TestNo:	EPA 300.0			Analysis Date:	11/20/2014	SeqNo:	1879296

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.020	1.0						4.860	3.24	20	

Sample ID	N013866-018D-MSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	96884
Client ID:	ZZZZZZ	Batch ID:	R96884	TestNo:	EPA 300.0			Analysis Date:	11/20/2014	SeqNo:	1879297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.910	1.0	10.00	4.860	90.5	80	120	13.79	0.866	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96819_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96819_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.097	0.50	5.000	0	102	90	110				

Sample ID **N013831-018D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1538.200	100						1544	0.376	20	

Sample ID **N013831-018D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2627.600	100	1000	1544	108	80	120				

Sample ID **N013831-018D-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2627.200	100	1000	1544	108	80	120	2628	0.0152	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N013866-001C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	ZZZZZZ	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877852

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	308.340	10	100.0	201.7	107	80	120				

Sample ID	N013866-001C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	ZZZZZZ	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	204.000	10						201.7	1.12	20	

Sample ID	N013866-001C-MSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96819
Client ID:	ZZZZZZ	Batch ID:	R96819	TestNo:	EPA 300.0			Analysis Date:	11/17/2014	SeqNo:	1877854

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	303.980	10	100.0	201.7	102	80	120	308.3	1.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 7:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.68	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125D** QC Batch: **R96946** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.30	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *03-Dec-14*

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R96946** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96946**
Client ID: **PBW** Batch ID: **R96946** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R96946** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96946**
Client ID: **LCSW** Batch ID: **R96946** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.929	0.050	1.000	0	92.9	85	115				

Sample ID **N013866-005E-DUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96946**
Client ID: **ZZZZZZ** Batch ID: **R96946** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N013866-005E-MS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96946**
Client ID: **ZZZZZZ** Batch ID: **R96946** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.046	0.050	1.000	0	105	85	115				

Sample ID **N013866-005E-MSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96946**
Client ID: **ZZZZZZ** Batch ID: **R96946** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.069	0.050	1.000	0	107	85	115	1.046	2.20	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-001

Client Sample ID: MW-126-200
Collection Date: 11/10/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	180	19	100		ug/L	1	11/24/2014 10:15 AM
Calcium	64000	58	500		ug/L	1	11/24/2014 10:15 AM
Iron	27	1.3	20		ug/L	1	11/24/2014 10:15 AM
Magnesium	15000	11	100		ug/L	1	11/24/2014 10:15 AM
Sodium	140000	190	2500		ug/L	5	11/25/2014 09:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**				PrepDate	**11/14/2014**	Analyst: **CEI**
Boron	390	19	100		ug/L	1	11/24/2014 10:24 AM
Calcium	150000	58	500		ug/L	1	11/24/2014 10:24 AM
Iron	1600	1.3	20		ug/L	1	11/24/2014 10:24 AM
Magnesium	51000	11	100		ug/L	1	11/24/2014 10:24 AM
Sodium	330000	940	12000		ug/L	25	11/25/2014 10:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	2200	19	100		ug/L	1	11/24/2014 10:30 AM
Calcium	130000	58	500		ug/L	1	11/24/2014 10:30 AM
Iron	720	1.3	20		ug/L	1	11/24/2014 10:30 AM
Magnesium	85000	11	100		ug/L	1	11/24/2014 10:30 AM
Sodium	2300000	3800	50000		ug/L	100	11/25/2014 10:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	160	19	100		ug/L	1	11/24/2014 10:36 AM
Calcium	64000	58	500		ug/L	1	11/24/2014 10:36 AM
Iron	37	1.3	20		ug/L	1	11/24/2014 10:36 AM
Magnesium	15000	11	100		ug/L	1	11/24/2014 10:36 AM
Sodium	140000	190	2500		ug/L	5	11/25/2014 09:41 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-012

Client Sample ID: MW-15-200
Collection Date: 11/11/2014 9:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	240	19	100		ug/L	1	11/24/2014 10:41 AM
Calcium	120000	58	500		ug/L	1	11/24/2014 10:41 AM
Iron	ND	1.3	20		ug/L	1	11/24/2014 10:41 AM
Magnesium	26000	11	100		ug/L	1	11/24/2014 10:41 AM
Sodium	210000	940	12000		ug/L	25	11/25/2014 10:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-015

Client Sample ID: MW-21-200
Collection Date: 11/11/2014 7:40:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	3900	19	100		ug/L	1	11/24/2014 10:47 AM
Calcium	200000	58	500		ug/L	1	11/24/2014 10:47 AM
Iron	ND	1.3	20		ug/L	1	11/24/2014 10:47 AM
Magnesium	51000	11	100		ug/L	1	11/24/2014 10:47 AM
Sodium	2200000	3800	50000		ug/L	100	11/25/2014 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-016

Client Sample ID: MW-28-025-200
Collection Date: 11/11/2014 8:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	140	19	100		ug/L	1	11/24/2014 10:53 AM
Calcium	100000	58	500		ug/L	1	11/24/2014 10:53 AM
Iron	ND	1.3	20		ug/L	1	11/24/2014 10:53 AM
Magnesium	27000	11	100		ug/L	1	11/24/2014 10:53 AM
Sodium	86000	190	2500		ug/L	5	11/25/2014 09:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	850	19	100		ug/L	1	11/24/2014 11:09 AM
Calcium	260000	58	500		ug/L	1	11/24/2014 11:09 AM
Iron	580	1.3	20		ug/L	1	11/24/2014 11:09 AM
Magnesium	39000	11	100		ug/L	1	11/24/2014 11:09 AM
Sodium	1200000	3800	50000		ug/L	100	11/25/2014 11:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	1100	19	100		ug/L	1	11/24/2014 11:15 AM
Calcium	450000	58	500		ug/L	1	11/24/2014 11:15 AM
Iron	7400	1.3	20		ug/L	1	11/24/2014 11:15 AM
Magnesium	170000	11	100		ug/L	1	11/24/2014 11:15 AM
Potassium	18000	420	2500		ug/L	5	11/25/2014 10:10 AM
Sodium	2000000	3800	50000		ug/L	100	11/25/2014 11:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	2700	19	100		ug/L	1	11/24/2014 11:20 AM
Calcium	79000	58	500		ug/L	1	11/24/2014 11:20 AM
Iron	ND	1.3	20		ug/L	1	11/24/2014 11:20 AM
Magnesium	85000	11	100		ug/L	1	11/24/2014 11:20 AM
Sodium	3400000	3800	50000		ug/L	100	11/25/2014 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	540	19	100		ug/L	1	11/24/2014 11:26 AM
Calcium	220000	58	500		ug/L	1	11/24/2014 11:26 AM
Iron	ND	1.3	20		ug/L	1	11/24/2014 11:26 AM
Magnesium	27000	11	100		ug/L	1	11/24/2014 11:26 AM
Sodium	730000	940	12000		ug/L	25	11/25/2014 11:14 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-027

Client Sample ID: MW-50-095-200
Collection Date: 11/11/2014 11:34:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141124C**	QC Batch: **47997**			PrepDate	**11/14/2014**		Analyst: **CEI**
Boron	750	19	100		ug/L	1	11/24/2014 11:32 AM
Calcium	130000	58	500		ug/L	1	11/24/2014 11:32 AM
Iron	ND	1.3	20		ug/L	1	11/24/2014 11:32 AM
Magnesium	12000	11	100		ug/L	1	11/24/2014 11:32 AM
Sodium	950000	1900	25000		ug/L	50	11/25/2014 11:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-47997** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96922**
Client ID: **PBW** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	1.812	20									
Magnesium	ND	100									

Sample ID **LCS1-47997** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96922**
Client ID: **LCSW** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4746.503	100	5000	0	94.9	85	115				
Calcium	9571.780	500	10000	0	95.7	85	115				
Iron	90.119	20	100.0	0	90.1	85	115				
Magnesium	9502.371	100	10000	0	95.0	85	115				

Sample ID **N013866-005B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96922**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5806.003	100	5000	393.1	108	75	125				
Calcium	161809.940	500	10000	147400	144	75	125				S
Iron	1638.820	20	100.0	1574	64.4	75	125				S
Magnesium	61859.218	100	10000	51380	105	75	125				

Sample ID **N013866-026B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96922**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5844.060	100	5000	543.9	106	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013866-026B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96922**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	233368.745	500	10000	223100	103	75	125				
Iron	90.929	20	100.0	0	90.9	75	125				
Magnesium	36955.666	100	10000	27150	98.1	75	125				

Sample ID **N013866-005B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96922**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5809.006	100	5000	393.1	108	75	125	5806	0.0517	20	
Calcium	164173.993	500	10000	147400	167	75	125	161800	1.45	20	S
Iron	1633.456	20	100.0	1574	59.1	75	125	1639	0.328	20	S
Magnesium	61521.168	100	10000	51380	101	75	125	61860	0.548	20	

Sample ID **MB-47997** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96940**
Client ID: **PBW** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID **LCS2-47997** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96940**
Client ID: **LCSW** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19298.092	500	20000	0	96.5	85	115				
Sodium	19007.011	500	20000	0	95.0	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013866-027B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96940**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	29370.866	25000	20000	7171	111	75	125				

Sample ID **N013866-027B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1106828.638	25000	20000	952500	772	75	125				S

Sample ID **N013866-007B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	32537.533	2500	20000	8656	119	75	125				

Sample ID **N013866-007B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	32602.486	2500	20000	8656	120	75	125	32540	0.199	20	

Sample ID **N013866-007B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/14/2014** RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2695761.391	50000	20000	2308000	1940	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N013866-007B-MSD**	SampType:	**MSD**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:	**11/14/2014**	RunNo:	**96973**		
Client ID:	**ZZZZZZ**	Batch ID:	**47997**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**12/1/2014**	SeqNo:	**1883414**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		2644247.079	50000	20000	2308000	1680	75	125	2696000	1.93	20	S	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013866
Project: PG&E Topock
Lab ID: N013866-001

Client Sample ID: MW-126-200
Collection Date: 11/10/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	2.8	0.027	0.10		µg/L	1	11/21/2014 04:44 PM
Manganese	160	0.13	2.5		µg/L	5	11/21/2014 04:50 PM
Molybdenum	5.1	0.15	0.50		µg/L	1	11/21/2014 04:44 PM
Selenium	ND	0.069	0.50		µg/L	1	11/21/2014 04:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	3.1	0.027	0.10		µg/L	1	11/21/2014 04:55 PM
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 04:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 2:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	3.4	0.027	0.10		µg/L	1	11/21/2014 05:06 PM
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 05:06 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 1:45:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	7.8	0.027	0.10		µg/L	1	11/21/2014 05:17 PM
Manganese	330	0.13	2.5		µg/L	5	11/21/2014 05:34 PM
Molybdenum	9.3	0.15	0.50		µg/L	1	11/21/2014 05:17 PM
Selenium	ND	0.069	0.50		µg/L	1	11/21/2014 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 9:24:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	1.1	0.027	0.10		µg/L	1	11/21/2014 05:39 PM
Manganese	60	0.026	0.50		µg/L	1	11/21/2014 05:39 PM
Molybdenum	44	0.15	0.50		µg/L	1	11/21/2014 05:39 PM
Selenium	0.81	0.069	0.50		µg/L	1	11/21/2014 05:39 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-050-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 10:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	2.7	0.027	0.10		µg/L	1	11/21/2014 05:49 PM
Manganese	130	0.026	0.50		µg/L	1	11/21/2014 05:49 PM
Molybdenum	5.2	0.15	0.50		µg/L	1	11/21/2014 05:49 PM
Selenium	ND	0.069	0.50		µg/L	1	11/21/2014 05:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-200
Lab Order:	N013866	**Collection Date:**	11/10/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	12	0.027	0.10		µg/L	1	11/21/2014 06:01 PM
Manganese	170	0.13	2.5		µg/L	5	11/21/2014 06:07 PM
Molybdenum	84	0.76	2.5		µg/L	5	11/21/2014 06:07 PM
Selenium	ND	0.34	2.5		µg/L	5	11/21/2014 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	3.7	0.13	0.50		µg/L	5	11/25/2014 10:28 AM
Manganese	170	0.13	2.5		µg/L	5	11/21/2014 06:17 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-15-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 06:23 PM
Molybdenum	14	0.15	0.50		µg/L	1	11/21/2014 06:23 PM
Selenium	3.7	0.069	0.50		µg/L	1	11/21/2014 06:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 7:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 06:45 PM
Molybdenum	94	0.15	0.50		µg/L	1	11/21/2014 06:45 PM
Selenium	16	0.069	0.50		µg/L	1	11/21/2014 06:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	1.0	0.027	0.10		µg/L	1	11/21/2014 06:56 PM
Manganese	11	0.026	0.50		µg/L	1	11/21/2014 06:56 PM
Molybdenum	3.9	0.15	0.50		µg/L	1	11/21/2014 06:56 PM
Selenium	ND	0.069	0.50		µg/L	1	11/21/2014 06:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	1.7	0.027	0.10		µg/L	1	11/21/2014 07:07 PM
Manganese	100	0.026	0.50		µg/L	1	11/21/2014 07:07 PM
Molybdenum	20	0.15	0.50		µg/L	1	11/21/2014 07:07 PM
Selenium	ND	0.069	0.50		µg/L	1	11/21/2014 07:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-020-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 10:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	3.3	0.13	0.50		µg/L	5	11/21/2014 07:24 PM
Manganese	160	0.13	2.5		µg/L	5	11/21/2014 07:24 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	21	0.027	0.10		µg/L	1	11/21/2014 07:29 PM
Manganese	1200	0.64	12		µg/L	25	11/25/2014 10:33 AM
Molybdenum	15	0.15	0.50		µg/L	1	11/21/2014 07:29 PM
Selenium	ND	0.069	0.50		µg/L	1	11/21/2014 07:29 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	8.9	0.027	0.10		µg/L	1	11/21/2014 07:52 PM
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 07:52 PM
Molybdenum	370	0.76	2.5		µg/L	5	11/21/2014 07:57 PM
Selenium	ND	0.34	2.5		µg/L	5	11/21/2014 07:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Arsenic	1.1	0.027	0.10		µg/L	1	11/21/2014 08:03 PM
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 08:03 PM
Molybdenum	9.5	0.15	0.50		µg/L	1	11/21/2014 08:03 PM
Selenium	1.0	0.069	0.50		µg/L	1	11/21/2014 08:03 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *03-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-200
Lab Order:	N013866	**Collection Date:**	11/11/2014 11:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013866-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141121A**	QC Batch: **47996**			PrepDate	**11/14/2014**		Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/21/2014 08:14 PM
Molybdenum	16	0.15	0.50		µg/L	1	11/21/2014 08:14 PM
Selenium	0.99	0.069	0.50		µg/L	1	11/21/2014 08:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *03-Dec-14*

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-47996** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/14/2014** RunNo: **96905**
Client ID: **PBW** Batch ID: **47996** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-47996** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/14/2014** RunNo: **96905**
Client ID: **LCSW** Batch ID: **47996** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.719	0.10	10.00	0	97.2	85	115				
Manganese	97.853	0.50	100.0	0	97.9	85	115				
Molybdenum	9.475	0.50	10.00	0	94.8	85	115				
Selenium	9.306	0.50	10.00	0	93.1	85	115				

Sample ID **N013866-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/14/2014** RunNo: **96905**
Client ID: **ZZZZZZ** Batch ID: **47996** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.581	0.10	10.00	2.803	97.8	75	125				
Molybdenum	15.872	0.50	10.00	5.078	108	75	125				
Selenium	10.004	0.50	10.00	0	100	75	125				

Sample ID **N013866-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/14/2014** RunNo: **96905**
Client ID: **ZZZZZZ** Batch ID: **47996** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/21/2014** SeqNo: **1880152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	258.096	2.5	100.0	156.9	101	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N013866-001B-MSD	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	11/14/2014	RunNo:	96905
Client ID:	ZZZZZZ	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880153

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.598	0.10	10.00	2.803	98.0	75	125	12.58	0.137	0	
Molybdenum	15.704	0.50	10.00	5.078	106	75	125	15.87	1.06	0	
Selenium	10.474	0.50	10.00	0	105	75	125	10.00	4.59	0	

Sample ID	N013866-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	11/14/2014	RunNo:	96905
Client ID:	ZZZZZZ	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	256.823	2.5	100.0	156.9	99.9	75	125	258.1	0.495	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Please add K to the SW6010B list for sample MW-32-35-200

Shawn P. Duffy
11/26/2014

CH2MHILL

CHAIN OF CUSTODY RECORD

11/11/2014 4:10:18 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/11/2014
COC Number: 4

N013866

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-126-200	11/10/2014	7:00	Water	X		X	X	X		X		X		X	X	X	X	X		5	
MW-21-200-EB	11/10/2014	8:10	Water	X															Hold	1	
MW-23-060-200	11/10/2014	13:22	Water	X		X		X	X					X						3	
MW-23-080-200	11/10/2014	14:58	Water	X		X		X	X					X						3	
MW-29-200	11/10/2014	13:45	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-29-200-EB	11/10/2014	12:50	Water	X				X											Hold	2	
MW-30-030-200	11/10/2014	9:24	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-30-030-200-EB	11/10/2014	8:40	Water	X				X											Hold	2	
MW-30-050-200	11/10/2014	10:35	Water	X		X	X	X		X		X		X	X	X	X	X		5	
MW-57-185-200	11/10/2014	11:34	Water	X		X		X		X				X			X			4	
MW-127-200	11/11/2014	8:20	Water		X	X		X	X		X			X						5	
MW-15-200	11/11/2014	9:16	Water	X			X	X		X		X		X	X	X				3	
MW-205-200	11/11/2014	8:17	Water	X																1	
MW-206-200	11/11/2014	8:15	Water	X																1	

* Where provided w/ multiple bottles for Cr6 + total Cr, please analyze 1 + hold 2

Please place the specified samples on Hold.

Shawn P. Duffy
11/07/14

	Signatures	Date/Time
Approved by		11-11-14
Sampled by		1617
Relinquished by		
Received by	Bindy alang	11/11/14 1617
Relinquished by	Bindy alang	11/11/14
Received by	Bindy alang	11/11/14 1901

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.7°C / 1.9°C
Airbill No: R# 1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/11/2014 4:10:20 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/11/2014
COC Number: 4

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly	* where provided w/ multiple bottles for Cr6 + total Cr, please analyze 1 + hold 2		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-21-200	11/11/2014	7:40	Water		X		X	X		X	X	X		X	X	X	X			6	
MW-28-025-200	11/11/2014	8:20	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-28-025-200-EB	11/11/2014	7:33	Water					X											Hold	1	
MW-28-090-200	11/11/2014	9:20	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-28-090-200-EB	11/11/2014	8:13	Water	X				X											Hold	2	
MW-32-020-200	11/11/2014	10:50	Water		X	X		X	X		X			X						5	
MW-32-020-200-EB	11/11/2014	10:21	Water	X				X											Hold	2	BJL
MW-32-035-200	11/11/2014	11:40	Water		X	X	X	X		X	X	X		X	X	X		X	Add K to the SW6010B	6	
MW-32-035-200-EB	11/11/2014	10:48	Water	X				X											Hold	2	
MW-33-040-200	11/11/2014	13:32	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-33-040-200-EB	11/11/2014	12:48	Water	X				X											Hold	2	
MW-47-055-200	11/11/2014	13:48	Water	X		X	X	X		X		X		X	X	X		X		4	
MW-50-095-200	11/11/2014	11:34	Water	X			X	X		X		X		X	X	X				3	
																			TOTAL NUMBER OF CONTAINERS	~~107~~ 98	

	Signatures	Date/Time
Approved by		11-11-14
Sampled by		1617
Relinquished by		
Received by		11/11/14 1617
Relinquished by		11/11/14 1901
Received by		11/11/14 1901

Shipping Details

Method of Shipment: courier
On Ice: ~~yes~~ / no 2.3°C / 2.6°C
Airbill No: 1 of 1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/11/2014 4:10:18 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/11/2014
COC Number: 4

N013866

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-126-200	11/10/2014	7:00	Water	X		X	X	X		X		X		X	X	X	X	X		5	
MW-21-200-EB	11/10/2014	8:10	Water	X															Hold	1	
MW-23-060-200	11/10/2014	13:22	Water	X		X		X	X					X						3	
MW-23-080-200	11/10/2014	14:58	Water	X		X		X	X					X						3	
MW-29-200	11/10/2014	13:45	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-29-200-EB	11/10/2014	12:50	Water	X				X											Hold	2	
MW-30-030-200	11/10/2014	9:24	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-30-030-200-EB	11/10/2014	8:40	Water	X				X											Hold	2	
MW-30-050-200	11/10/2014	10:35	Water	X		X	X	X		X		X		X	X	X	X	X		5	
MW-57-185-200	11/10/2014	11:34	Water	X		X		X		X				X			X			4	
MW-127-200	11/11/2014	8:20	Water		X	X		X	X		X			X						5	
MW-15-200	11/11/2014	9:16	Water	X			X	X		X		X		X	X	X				3	
MW-205-200	11/11/2014	8:17	Water	X																1	
MW-206-200	11/11/2014	8:15	Water	X																1	

* Where provided w/ multiple bottles for Cr6 + total Cr, please analyze 1 + hold 2

Please place the specified samples on Hold.

Shawn P. Duffy 11/07/14

	Signatures	Date/Time
Approved by		11-11-14
Sampled by		1617
Relinquished by		
Received by	Bindy alang	11/11/14 1617
Relinquished by	Bindy alang	11/11/14
Received by	Bindy alang	11/11/14 1901

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.7°C / 1.9°C
Airbill No: R# 1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/11/2014 4:10:20 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/11/2014
COC Number: 4

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly	* where provided w/ multiple bottles for Cr6 + total Cr, please analyze 1 + hold 2	Number of Containers	
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)			COMMENTS
MW-21-200	11/11/2014	7:40	Water		X		X	X		X	X	X		X	X	X	X			6	
MW-28-025-200	11/11/2014	8:20	Water		X	X	X	X		X	X	X		X	X	X	X			6	
MW-28-025-200-EB	11/11/2014	7:33	Water					X											Hold	1	
MW-28-090-200	11/11/2014	9:20	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-28-090-200-EB	11/11/2014	8:13	Water	X				X											Hold	2	
MW-32-020-200	11/11/2014	10:50	Water		X	X		X	X		X			X						5	
MW-32-020-200-EB	11/11/2014	10:21	Water	X				X											Hold	2	BJL
MW-32-035-200	11/11/2014	11:40	Water		X	X	X	X		X	X	X		X	X	X		X		6	
MW-32-035-200-EB	11/11/2014	10:48	Water	X				X											Hold	2	
MW-33-040-200	11/11/2014	13:32	Water		X	X	X	X		X	X		X	X	X	X	X			6	
MW-33-040-200-EB	11/11/2014	12:48	Water	X				X											Hold	2	
MW-47-055-200	11/11/2014	13:48	Water	X		X	X	X		X		X		X	X	X		X		4	
MW-50-095-200	11/11/2014	11:34	Water	X			X	X		X		X		X	X	X				3	
																			TOTAL NUMBER OF CONTAINERS	~~107~~ 98	

	Signatures	Date/Time
Approved by		11-11-14
Sampled by		1617
Relinquished by		
Received by		11/11/14 1617
Relinquished by		11/11/14 1901
Received by		11/11/14 1901

Shipping Details

Method of Shipment: courier
On Ice: yes / no 2.3°C / 2.6°C
Airbill No: 1R#1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/11/2014 4:10:18 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/11/2014
COC Number: 4

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly	* Where provided w/ multiple bottles for Cr6 + total Cr, please analyze 1 + hold 2	Number of Containers	COMMENTS
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)			
MW-126-200	11/10/2014	7:00	Water	X		X	X	X		X		X		X	X	X	X	X	N0138666-01	5	
MW-21-200-EB	11/10/2014	8:10	Water	X															-02	1	
MW-23-060-200	11/10/2014	13:22	Water	X		X		X	X					X					-03	3	
MW-23-080-200	11/10/2014	14:58	Water	X		X		X	X					X					-04	3	
MW-29-200	11/10/2014	13:45	Water		X	X	X	X		X	X	X		X	X	X	X		-05	6	
MW-29-200-EB	11/10/2014	12:50	Water	X				X											-06	2	
MW-30-030-200	11/10/2014	9:24	Water		X	X	X	X		X	X	X		X	X	X	X		-07	6	
MW-30-030-200-EB	11/10/2014	8:40	Water	X				X											-08	2	
MW-30-050-200	11/10/2014	10:35	Water	X		X	X	X		X		X		X	X	X	X	X	-09	5	
MW-57-185-200	11/10/2014	11:34	Water	X		X		X		X				X			X		-10	4	
MW-127-200	11/11/2014	8:20	Water		X	X		X	X		X			X					-11	5	
MW-15-200	11/11/2014	9:16	Water	X			X	X		X		X		X	X	X			-12	3	
MW-205-200	11/11/2014	8:17	Water	X															-13	1	
MW-206-200	11/11/2014	8:15	Water	X															-14	1	

	Signatures	Date/Time
Approved by		11-11-14
Sampled by		1617
Relinquished by		
Received by		11/11/14 1617
Relinquished by		11/11/14
Received by		11/11/14 1901

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.7°C / 1.9°C
Airbill No: / R# 1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/11/2014 4:10:20 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/11/2014
COC Number: 4

				Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
Container:				250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
Preservatives:				(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
Filtered:				Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
Holding Time:				28	28	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix																		
MW-21-200	11/11/2014	7:40	Water		X		X	X		X	X	X		X	X	X	X		N0138866-15	~~6~~	
MW-28-025-200	11/11/2014	8:20	Water		X	X	X	X		X	X	X		X	X	X	X		-16	~~6~~	
MW-28-025-200-EB	11/11/2014	7:33	Water					X											-17	1	
MW-28-090-200	11/11/2014	9:20	Water		X	X	X	X		X	X		X	X	X	X	X		-18	~~6~~	
MW-28-090-200-EB	11/11/2014	8:13	Water	X				X											-19	2	
MW-32-020-200	11/11/2014	10:50	Water		X	X		X	X		X			X					-20	~~5~~	
MW-32-020-200-EB	11/11/2014	10:21	Water	X				X											-21	2	PGL
MW-32-035-200	11/11/2014	11:40	Water		X	X	X	X		X	X	X		X	X	X		X	-22	~~6~~	
MW-32-035-200-EB	11/11/2014	10:48	Water	X				X											-23	2	
MW-33-040-200	11/11/2014	13:32	Water		X	X	X	X		X	X		X	X	X	X	X		-24	~~6~~	
MW-33-040-200-EB	11/11/2014	12:48	Water	X				X											-25	2	
MW-47-055-200	11/11/2014	13:48	Water	X		X	X	X		X		X		X	X	X		X	-26	4	
MW-50-095-200	11/11/2014	11:34	Water	X			X	X		X		X		X	X	X			-27	3	
																			TOTAL NUMBER OF CONTAINERS	~~107~~ 98	

* where provided w/ multiple bottles for Cr6 + total Cr, please analyze 1 + hold 2

	Signatures	Date/Time
Approved by		11-11-14
Sampled by		1617
Relinquished by		
Received by		11/11/14 1617
Relinquished by		11/11/14 1901
Received by		11/11/14 1901

Shipping Details
Method of Shipment: courier
On Ice: yes / no 2.3°C / 2.6°C
Airbill No: 1R#1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/11/2014	Workorder:	N013866
Rep sample Temp (Deg C):	1.7,1.9,2.3,2.6	IR Gun ID:	1
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: For: JPG MBC 11/12/2014

Reviewed By: JPG 11/20/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

12-Nov-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N013866-001E / MW-126-200	Water	11/10/2014 7:00:00 AM	8OZP	1		
N013866-009E / MW-30-050-200	Water	11/10/2014 10:35:00 AM	8OZP	1		
N013866-022E / MW-32-035-200	Water	11/11/2014 11:40:00 AM	8OZP	1		
N013866-026D / MW-47-055-200	Water	11/11/2014 1:48:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13866A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen and Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)941-9227.

GSO# 526121713

		Date/Time			Date/Time
Relinquished by:	jpg 11/12/14	17:00	**Received by:**		
Relinquished by:	JPG		**Received by:**		

SampleControl.LV@assetlaboratories.com

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Wednesday, November 26, 2014 3:53 PM
To: 'SampleControl.LV@assetlaboratories.com'
Subject: FW: Revised COCs
Attachments: N013831-COC_11-26-14_rev2.pdf; N013866_COC_11-26-2014_Rev2.pdf

Please process.

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Shawn.Duffy@CH2M.com [mailto:Shawn.Duffy@CH2M.com]
Sent: Wednesday, November 26, 2014 3:29 PM
To: glen@assetlaboratories.com; marlon@assetlaboratories.com
Cc: Erlene.Contreras@CH2M.com; Priya.Kumar@CH2M.com
Subject: Revised COCs

Shawn

From: Glen Gesmundo [mailto:glen@assetlaboratories.com]
Sent: Wednesday, November 26, 2014 2:21 PM
To: Duffy, Shawn/RDD; marlon@assetlaboratories.com
Subject: RE: Need to add parameters to samples that have already been sampled.

See attached.

Thanks,|
Glen

From: Shawn.Duffy@CH2M.com [mailto:Shawn.Duffy@CH2M.com]
Sent: Wednesday, November 26, 2014 2:10 PM
To: marlon@assetlaboratories.com; glen@assetlaboratories.com
Subject: Need to add parameters to samples that have already been sampled.

Hi Marlon,

Can you send me the COC for the following Topock samples? I need to make corrections.

MW-32-35-200	sampled 11/11/14
MW-34-55-200	sampled 11/6/14
MW-34-80-200	sampled 11/6/14

Shawn Duffy
Project Chemist
CH2M HILL

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

N013866-001C

For **N01386~~64~~-001C** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(61.4148-61.3451)*1000000}{100}$$
$$= 697$$

Reporting result in two significant figures,

TDS=700

11/24/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/14/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47978	100	53.817	53.8172	2	1	2		
LCS-47978	100	56.0288	56.1323	1035	1	1035		
N013866-001C	100	61.3451	61.4148	697	1	697	1026	0.679
N013866-005D	60	60.8255	60.9173	918	1.66666	1529.99388	2090	0.732
N013866-007D	10	30.7045	30.7623	578	10	5780	9970	0.580
N013860-009C	100	63.765	63.8349	699	1	699	1028	0.680
N013860-012C	75	61.1251	61.2107	856	1.33333	1141.33048	1724	0.662
N013866-015D	10	30.1421	30.2014	593	10	5930	9270	0.640
N013871-001F	100	57.0903	57.1241	338	1	338	366	0.923
N013871-001F DUP	100	63.9752	64.0099	347	1	347	366	0.948
N013874-001F	100	64.0957	64.1326	369	1	369	567	0.651
N013875-001F	100	62.9811	63.0052	241	1	241	327	0.737
N013876-001F	100	63.9634	63.988	246	1	246	340	0.724

11/24/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/19/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47991	100	53.7181	53.7181	0	1	0		
LCS-47991	100	63.5018	63.6033	1015	1	1015		
N013866-016D	100	55.7352	55.8086	734	1	734	1017	0.722
N013866-016D DUP	100	54.3529	54.4274	745	1	745	1017	0.733
N013866-018D	20	31.4204	31.4982	778	5	3890	6230	0.624
N013866-022D	10	30.7056	30.7634	578	10	5780	10620	0.544
N013866-024D	10	30.4956	30.5758	802	10	8020	13620	0.589
N013866-026C	30	30.1442	30.223	788	3.33333	2626.66404	4560	0.576
N013866-027C	30	30.6655	30.754	885	3.33333	2949.99705	4910	0.601
N013884-001D	75	60.8297	60.9172	875	1.33333	1167	2000	0.583
N013884-003C	10	30.5904	30.6557	653	10	6530	13100	0.498
N013884-006C	20	30.8604	30.881	206	5	1030	1914	0.538

11/24/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013866-026A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 8.2339 * 2

= 16.4678

Reporting result in two significant figures,

Cr^{+6}, µg/L = 16

Sample Calculation

METHOD: EPA 218.6R
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013866-005A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.053 * 1

= 0.053

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

Sample ID: **N013866-001C @ pH 7.83**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.70mL)

= **0.02137 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (7.65) (0.02137 N) (1) * 1000

=163.48 **mg/L**

Reporting results in two significant figures,

= 160 **mg/L** as CaCO3

11/19/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02137 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (7.65mL) (0.02137 N) (1) * 1000

= 163.48 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 163.48 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 160 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N013866-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.785 * 20

= 115.7

Reporting result in two significant figures,

Chloride, mg/L = 120

12/3/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Calcium concentration, in ug/L, in the original sample as follows:

Calcium, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013866-018B**, the concentration in ug/L is calculated as follows:

Calcium, ug/L = 259.26 * 1 * (25/25) * 1000

= 259259.5

Reporting results in two significant figures,

Calcium, ug/L = 260000

12/3/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013866
Test Method: EPA 6010
Analysis Date: 11/24/14

Matrix: Water
Batch No.: 47997

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B. The calculated concentration is <25RL.
Dilution test failed ~~to~~ for Fe & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013866-005B-DT 5X	Boron	ug/L	532.00	NA	393.06	35.35%	10
N013866-005B-DT 5X	Calcium	ug/L	151076.69	PASS	147444.82	2.46%	10
N013866-005B-DT 5X	Iron	ug/L	1734.60	FAIL	1574.39	10.18%	10
N013866-005B-DT 5X	Magnesium	ug/L	58972.65	FAIL	51381.18	14.77%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013866
Test Method: EPA 6010
Analysis Date: 11/25/14 & 12/1/2014

Matrix: Water
Batch No.: 47997

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to K. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013866-007B-DT ~~100X~~ 500x	Sodium	ug/L	2317263.226	PASS	2308044.412	0.40%	10
N013866-007B-DT ~~5X~~ 25x	Potassium	ug/L	8818.010938	NA	8655.60442	1.88%	10

Note: NA - Not Applicable

Mary for 12/3/2014

ASSET Laboratories

Date: *02-Dec-14*

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013866-005B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96922**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5607.657	100	5000	393.1	104	80	120				
Calcium	150343.130	500	10000	147400	29.0	80	120				S
Iron	1535.901	20	100.0	1574	-38.5	80	120				S
Magnesium	57466.699	100	10000	51380	60.9	80	120				S

Sample ID **N013866-007B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	31954.355	2500	20000	8656	116	80	120				

Sample ID **N013866-007B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **47997** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2768558.193	50000	20000	2308000	2300	80	120				S

DT of Ca@5x and Na@500x are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 12/3/2014

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Manganese concentration, in ug/L, in the original sample as follows:

Manganese, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013866-001B,** the concentration in ug/L is calculated as follows:

Manganese, ug/L = 31.382988972 * 5 * (25/25)

= 156.91494486

Reporting results in two significant figures,

Manganese, ug/L = 160

12/3/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013866
Test Method: EPA 6020
Analysis Date: 11/21/2014

Matrix: Water
Batch No.: 47996

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mo & Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013866-001B-DT 5X	Chromium	µg/L	0.397503805	NA	0.355572163	11.79%	10
N013866-001B-DT 5X	Arsenic	µg/L	3.003122048	PASS	2.802614109	7.15%	10
N013866-001B-DT 25X	Manganese	µg/L	158.718806	PASS	156.9149449	1.15%	10
N013866-001B-DT 5X	Molybdenum	µg/L	5.567263097	NA	5.0779082	9.64%	10
N013866-001B-DT 5X	Selenium	µg/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N013866-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	96905
Client ID:	ZZZZZZ	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.996	0.10	10.00	2.803	102	80	120				
Molybdenum	16.093	0.50	10.00	5.078	110	80	120				
Selenium	10.396	0.50	10.00	0	104	80	120				

Sample ID	N013866-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	96905
Client ID:	ZZZZZZ	Batch ID:	47996	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/21/2014	SeqNo:	1880148

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	261.346	2.5	100.0	156.9	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013866
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N013866-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**96905**	
Client ID:	**ZZZZZZ**	Batch ID:	**47996**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**11/21/2014**		SeqNo:	**1880073**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.847	1.0	10.00	0.3556	94.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 04, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013884

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 13, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013884

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen and Deuterium were subcontracted to Zymax- Escondido,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N013884-003, N013884-010, N013884-011, N013884-013 and N013884-025 due to matrix spike not meeting peak retention time criteria possibly due to matrix interference. Matrix spikes were analyzed with dilution and retention time met method criteria. Samples were reported at dilution that meet matrix spike peak retention time criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N013884-003, N013884-010, N013884-011, N013884-012, N013884-016 and N013884-023 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory

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Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (4.835 ug/L) and hexavalent chromium (2.918 ug/L) for sample N013884-004 (MW-130-200) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 4.946 and 5.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (5.894 ug/L) and hexavalent chromium (4.010 ug/L) for sample N013884-014 (MW-44-125-200) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 6.222 and 5.992 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Dilution was necessary on samples N013884-003, N013884-011and N013884-013 due to failed Internal Standard when samples were analyzed at no dilution.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N013884-001B-MS, N013884-001B-MSD and N013884-014B-MS are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013884
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013884-001A	MW-44-070-200	Water	11/11/2014 3:36:00 PM	11/13/2014	12/4/2014
N013884-001B	MW-44-070-200	Water	11/11/2014 3:36:00 PM	11/13/2014	12/4/2014
N013884-001C	MW-44-070-200	Water	11/11/2014 3:36:00 PM	11/13/2014	12/4/2014
N013884-001D	MW-44-070-200	Water	11/11/2014 3:36:00 PM	11/13/2014	12/4/2014
N013884-001E	MW-44-070-200	Water	11/11/2014 3:36:00 PM	11/13/2014	12/4/2014
N013884-002A	MW-44-070-200-EB	Water	11/11/2014 2:33:00 PM	11/13/2014	12/4/2014
N013884-002B	MW-44-070-200-EB	Water	11/11/2014 2:33:00 PM	11/13/2014	12/4/2014
N013884-003A	MW-47-115-200	Water	11/11/2014 3:25:00 PM	11/13/2014	12/4/2014
N013884-003B	MW-47-115-200	Water	11/11/2014 3:25:00 PM	11/13/2014	12/4/2014
N013884-003C	MW-47-115-200	Water	11/11/2014 3:25:00 PM	11/13/2014	12/4/2014
N013884-003D	MW-47-115-200	Water	11/11/2014 3:25:00 PM	11/13/2014	12/4/2014
N013884-004A	MW-130-200	Water	11/12/2014 7:00:00 AM	11/13/2014	12/4/2014
N013884-004B	MW-130-200	Water	11/12/2014 7:00:00 AM	11/13/2014	12/4/2014
N013884-004C	MW-130-200	Water	11/12/2014 7:00:00 AM	11/13/2014	12/4/2014
N013884-004D	MW-130-200	Water	11/12/2014 7:00:00 AM	11/13/2014	12/4/2014
N013884-004E	MW-130-200	Water	11/12/2014 7:00:00 AM	11/13/2014	12/4/2014
N013884-005A	MW-133-200	Water	11/12/2014 8:15:00 AM	11/13/2014	12/4/2014
N013884-005B	MW-133-200	Water	11/12/2014 8:15:00 AM	11/13/2014	12/4/2014
N013884-005C	MW-133-200	Water	11/12/2014 8:15:00 AM	11/13/2014	12/4/2014
N013884-006A	MW-14-200	Water	11/12/2014 3:38:00 PM	11/13/2014	12/4/2014
N013884-006B	MW-14-200	Water	11/12/2014 3:38:00 PM	11/13/2014	12/4/2014
N013884-006C	MW-14-200	Water	11/12/2014 3:38:00 PM	11/13/2014	12/4/2014
N013884-006D	MW-14-200	Water	11/12/2014 3:38:00 PM	11/13/2014	12/4/2014
N013884-007A	MW-207-200	Water	11/12/2014 6:58:00 AM	11/13/2014	12/4/2014
N013884-008A	MW-208-200	Water	11/12/2014 6:50:00 AM	11/13/2014	12/4/2014
N013884-009A	MW-33-090-200	Water	11/12/2014 2:18:00 PM	11/13/2014	12/4/2014
N013884-009B	MW-33-090-200	Water	11/12/2014 2:18:00 PM	11/13/2014	12/4/2014
N013884-009C	MW-33-090-200	Water	11/12/2014 2:18:00 PM	11/13/2014	12/4/2014
N013884-009D	MW-33-090-200	Water	11/12/2014 2:18:00 PM	11/13/2014	12/4/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013884
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013884-009E	MW-33-090-200	Water	11/12/2014 2:18:00 PM	11/13/2014	12/4/2014
N013884-010A	MW-33-150-200	Water	11/12/2014 3:12:00 PM	11/13/2014	12/4/2014
N013884-010B	MW-33-150-200	Water	11/12/2014 3:12:00 PM	11/13/2014	12/4/2014
N013884-010C	MW-33-150-200	Water	11/12/2014 3:12:00 PM	11/13/2014	12/4/2014
N013884-010D	MW-33-150-200	Water	11/12/2014 3:12:00 PM	11/13/2014	12/4/2014
N013884-010E	MW-33-150-200	Water	11/12/2014 3:12:00 PM	11/13/2014	12/4/2014
N013884-011A	MW-33-210-200	Water	11/12/2014 1:36:00 PM	11/13/2014	12/4/2014
N013884-011B	MW-33-210-200	Water	11/12/2014 1:36:00 PM	11/13/2014	12/4/2014
N013884-011C	MW-33-210-200	Water	11/12/2014 1:36:00 PM	11/13/2014	12/4/2014
N013884-011D	MW-33-210-200	Water	11/12/2014 1:36:00 PM	11/13/2014	12/4/2014
N013884-011E	MW-33-210-200	Water	11/12/2014 1:36:00 PM	11/13/2014	12/4/2014
N013884-012A	MW-37S-200	Water	11/12/2014 2:13:00 PM	11/13/2014	12/4/2014
N013884-012B	MW-37S-200	Water	11/12/2014 2:13:00 PM	11/13/2014	12/4/2014
N013884-012C	MW-37S-200	Water	11/12/2014 2:13:00 PM	11/13/2014	12/4/2014
N013884-013A	MW-44-115-200	Water	11/12/2014 10:06:00 AM	11/13/2014	12/4/2014
N013884-013B	MW-44-115-200	Water	11/12/2014 10:06:00 AM	11/13/2014	12/4/2014
N013884-013C	MW-44-115-200	Water	11/12/2014 10:06:00 AM	11/13/2014	12/4/2014
N013884-013D	MW-44-115-200	Water	11/12/2014 10:06:00 AM	11/13/2014	12/4/2014
N013884-013E	MW-44-115-200	Water	11/12/2014 10:06:00 AM	11/13/2014	12/4/2014
N013884-014A	MW-44-125-200	Water	11/12/2014 8:50:00 AM	11/13/2014	12/4/2014
N013884-014B	MW-44-125-200	Water	11/12/2014 8:50:00 AM	11/13/2014	12/4/2014
N013884-014C	MW-44-125-200	Water	11/12/2014 8:50:00 AM	11/13/2014	12/4/2014
N013884-014D	MW-44-125-200	Water	11/12/2014 8:50:00 AM	11/13/2014	12/4/2014
N013884-014E	MW-44-125-200	Water	11/12/2014 8:50:00 AM	11/13/2014	12/4/2014
N013884-015A	MW-44-125-200-EB	Water	11/12/2014 7:56:00 AM	11/13/2014	12/4/2014
N013884-015B	MW-44-125-200-EB	Water	11/12/2014 7:56:00 AM	11/13/2014	12/4/2014
N013884-016A	OW-03D-200	Water	11/12/2014 9:36:00 AM	11/13/2014	12/4/2014
N013884-016B	OW-03D-200	Water	11/12/2014 9:36:00 AM	11/13/2014	12/4/2014
N013884-016C	OW-03D-200	Water	11/12/2014 9:36:00 AM	11/13/2014	12/4/2014
N013884-017A	OW-03M-200	Water	11/12/2014 10:53:00 AM	11/13/2014	12/4/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013884
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013884-017B	OW-03M-200	Water	11/12/2014 10:53:00 AM	11/13/2014	12/4/2014
N013884-017C	OW-03M-200	Water	11/12/2014 10:53:00 AM	11/13/2014	12/4/2014
N013884-018A	OW-03S-200	Water	11/12/2014 11:59:00 AM	11/13/2014	12/4/2014
N013884-018B	OW-03S-200	Water	11/12/2014 11:59:00 AM	11/13/2014	12/4/2014
N013884-018C	OW-03S-200	Water	11/12/2014 11:59:00 AM	11/13/2014	12/4/2014
N013884-019A	MW-13-200	Water	11/13/2014 9:08:00 AM	11/13/2014	12/4/2014
N013884-019B	MW-13-200	Water	11/13/2014 9:08:00 AM	11/13/2014	12/4/2014
N013884-019C	MW-13-200	Water	11/13/2014 9:08:00 AM	11/13/2014	12/4/2014
N013884-020A	MW-18-200	Water	11/13/2014 10:40:00 AM	11/13/2014	12/4/2014
N013884-020B	MW-18-200	Water	11/13/2014 10:40:00 AM	11/13/2014	12/4/2014
N013884-020C	MW-18-200	Water	11/13/2014 10:40:00 AM	11/13/2014	12/4/2014
N013884-021A	MW-209-200	Water	11/13/2014 7:22:00 AM	11/13/2014	12/4/2014
N013884-022A	MW-210-200	Water	11/13/2014 7:20:00 AM	11/13/2014	12/4/2014
N013884-023A	MW-35-060-200	Water	11/13/2014 12:23:00 PM	11/13/2014	12/4/2014
N013884-023B	MW-35-060-200	Water	11/13/2014 12:23:00 PM	11/13/2014	12/4/2014
N013884-023C	MW-35-060-200	Water	11/13/2014 12:23:00 PM	11/13/2014	12/4/2014
N013884-023D	MW-35-060-200	Water	11/13/2014 12:23:00 PM	11/13/2014	12/4/2014
N013884-023E	MW-35-060-200	Water	11/13/2014 12:23:00 PM	11/13/2014	12/4/2014
N013884-024A	MW-36-100-200	Water	11/13/2014 9:02:00 AM	11/13/2014	12/4/2014
N013884-024B	MW-36-100-200	Water	11/13/2014 9:02:00 AM	11/13/2014	12/4/2014
N013884-024C	MW-36-100-200	Water	11/13/2014 9:02:00 AM	11/13/2014	12/4/2014
N013884-024D	MW-36-100-200	Water	11/13/2014 9:02:00 AM	11/13/2014	12/4/2014
N013884-024E	MW-36-100-200	Water	11/13/2014 9:02:00 AM	11/13/2014	12/4/2014
N013884-025A	MW-46-205-200	Water	11/13/2014 10:58:00 AM	11/13/2014	12/4/2014
N013884-025B	MW-46-205-200	Water	11/13/2014 10:58:00 AM	11/13/2014	12/4/2014
N013884-025C	MW-46-205-200	Water	11/13/2014 10:58:00 AM	11/13/2014	12/4/2014

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-115-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:25:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-130-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	8400	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-133-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	1900	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	9300	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 1:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:13:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	5500	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03D-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	8800	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03M-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	5700	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 11:59:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-13-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-18-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	6700	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-205-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141114C**	QC Batch: **R96797**			PrepDate			Analyst: **AC**
Specific Conductance	2200	0.10	0.10		umhos/cm	1	11/14/2014 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N013884-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96797**
Client ID: **ZZZZZZ** Batch ID: **R96797** TestNo: **EPA 120.1** Analysis Date: **11/14/2014** SeqNo: **1875102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2010.000	0.10						2000	0.499	10	

Sample ID **N013884-013C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96797**
Client ID: **ZZZZZZ** Batch ID: **R96797** TestNo: **EPA 120.1** Analysis Date: **11/14/2014** SeqNo: **1875114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10830.000	0.10						10870	0.369	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**			PrepDate	**11/18/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-115-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:25:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	6500	100	100		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118E**	QC Batch: **47991**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1000	50	50		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141119D**	QC Batch: **48018**				PrepDate	**11/19/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	4500	100	100		mg/L	1	11/19/2014 07:53 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	8400	100	100		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 1:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:13:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3100	33	33		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**			PrepDate	**11/18/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	6400	100	100		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03D-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	5000	50	50		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03M-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**			PrepDate	**11/18/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3000	50	50		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-13-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1200	17	17		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-18-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**				PrepDate	**11/18/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	790	10	10		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**			PrepDate	**11/18/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	3600	50	50		mg/L	1	11/18/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141118D**	QC Batch: **47993**			PrepDate	**11/18/2014**		Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	11/18/2014 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-47991** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/18/2014** RunNo: **96850**
Client ID: **PBW** Batch ID: **47991** TestNo: **SM2540C** Analysis Date: **11/18/2014** SeqNo: **1877399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-47991** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/18/2014** RunNo: **96850**
Client ID: **LCSW** Batch ID: **47991** TestNo: **SM2540C** Analysis Date: **11/18/2014** SeqNo: **1877400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1015.000	10	1000	0	102	80	120				

Sample ID **N013866-016D-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/18/2014** RunNo: **96850**
Client ID: **ZZZZZZ** Batch ID: **47991** TestNo: **SM2540C** Analysis Date: **11/18/2014** SeqNo: **1877402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	745.000	10						734.0	1.49	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-47993	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/18/2014	RunNo:	96837
Client ID:	PBW	Batch ID:	47993	TestNo:	SM2540C			Analysis Date:	11/18/2014	SeqNo:	1876756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-47993	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/18/2014	RunNo:	96837
Client ID:	LCSW	Batch ID:	47993	TestNo:	SM2540C			Analysis Date:	11/18/2014	SeqNo:	1876757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1021.000	10	1000	0	102	80	120				

Sample ID	N013884-010C-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/18/2014	RunNo:	96837
Client ID:	ZZZZZZ	Batch ID:	47993	TestNo:	SM2540C			Analysis Date:	11/18/2014	SeqNo:	1876759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	8260.000	100						8380	1.44	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-48018	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/19/2014	RunNo:	96869
Client ID:	PBW	Batch ID:	48018	TestNo:	SM2540C			Analysis Date:	11/19/2014	SeqNo:	1878530

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-48018	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/19/2014	RunNo:	96869
Client ID:	LCSW	Batch ID:	48018	TestNo:	SM2540C			Analysis Date:	11/19/2014	SeqNo:	1878531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	954.000	10	1000	0	95.4	80	120				

Sample ID	N013908-001CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/19/2014	RunNo:	96869
Client ID:	ZZZZZZ	Batch ID:	48018	TestNo:	SM2540C			Analysis Date:	11/19/2014	SeqNo:	1878534

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	5700.000	100						5520	3.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141114A**	QC Batch: **R96848**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 11:06 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/25/2014 10:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-115-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:25:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A** QC Batch: **R96848**				PrepDate			Analyst: **RB**
Hexavalent Chromium	19	0.080	1.0		µg/L	5	11/14/2014 12:52 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	17	0.030	1.0		µg/L	1	11/25/2014 11:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-130-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A** QC Batch: **R96848** PrepDate							Analyst: **RB**
Hexavalent Chromium	2.9	0.016	0.20		µg/L	1	11/14/2014 05:18 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141125A** QC Batch: **48011** PrepDate **11/18/2014**							Analyst: **CEI**
Chromium	4.8	0.030	1.0		µg/L	1	11/25/2014 11:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-133-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A** QC Batch: **R96848** PrepDate							Analyst: **RB**
Hexavalent Chromium	23	0.080	1.0		µg/L	5	11/14/2014 05:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141125A** QC Batch: **48011** PrepDate **11/18/2014**							Analyst: **CEI**
Chromium	24	0.030	1.0		µg/L	1	11/25/2014 11:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-006

Client Sample ID: MW-14-200
Collection Date: 11/12/2014 3:38:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A** QC Batch: **R96848** PrepDate							Analyst: **RB**
Hexavalent Chromium	15	0.032	0.40		µg/L	2	11/14/2014 05:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141125A** QC Batch: **48011** PrepDate **11/18/2014**							Analyst: **CEI**
Chromium	16	0.030	1.0		µg/L	1	11/25/2014 11:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-207-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 6:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A**	QC Batch: **R96848**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 01:53 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-208-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 6:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A**	QC Batch: **R96848**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/14/2014 02:13 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A** QC Batch: **R96848** PrepDate							Analyst: **RB**
Hexavalent Chromium	7.9	0.016	0.20		µg/L	1	11/14/2014 03:17 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141125A** QC Batch: **48011** PrepDate **11/18/2014**							Analyst: **CEI**
Chromium	7.7	0.030	1.0		µg/L	1	11/25/2014 11:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141117A**	QC Batch: **R96849**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.86	0.032	0.40		µg/L	2	11/17/2014 07:43 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/25/2014 12:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 1:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849** PrepDate							Analyst: **RB**
Hexavalent Chromium	13	0.080	1.0		µg/L	5	11/17/2014 12:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141125A** QC Batch: **48011** PrepDate **11/18/2014**							Analyst: **CEI**
Chromium	12	0.030	1.0		µg/L	1	11/25/2014 12:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:13:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141114A** QC Batch: **R96848** PrepDate							Analyst: **RB**
Hexavalent Chromium	11	0.016	0.20		µg/L	1	11/14/2014 04:18 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141125A** QC Batch: **48011** PrepDate **11/18/2014**							Analyst: **CEI**
Chromium	11	0.030	1.0		µg/L	1	11/25/2014 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	32	0.080	1.0		µg/L	5	11/17/2014 11:51 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	30	0.030	1.0		µg/L	1	11/25/2014 12:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	4.0	0.016	0.20		µg/L	1	11/17/2014 01:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	5.9	0.030	1.0		µg/L	1	11/25/2014 01:04 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03D-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	11	0.016	0.20		µg/L	1	11/17/2014 02:02 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	10	0.030	1.0		µg/L	1	11/25/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03M-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	16	0.032	0.40		µg/L	2	11/17/2014 06:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	15	0.030	1.0		µg/L	1	11/25/2014 01:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 11:59:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	23	0.080	1.0		µg/L	5	11/17/2014 06:43 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	23	0.030	1.0		µg/L	1	11/25/2014 01:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-019

Client Sample ID: MW-13-200
Collection Date: 11/13/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	21	0.080	1.0		µg/L	5	11/17/2014 07:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	21	0.030	1.0		µg/L	1	11/25/2014 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-18-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	21	0.080	1.0		µg/L	5	11/17/2014 08:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	21	0.030	1.0		µg/L	1	11/25/2014 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-209-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 7:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141117A**	QC Batch: **R96849**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/17/2014 04:04 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-210-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 7:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141117A**	QC Batch: **R96849**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/17/2014 04:24 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-023

Client Sample ID: MW-35-060-200
Collection Date: 11/13/2014 12:23:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	21	0.080	1.0		µg/L	5	11/17/2014 08:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	20	0.030	1.0		µg/L	1	11/25/2014 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	65	0.16	2.0		µg/L	10	11/17/2014 08:43 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	62	0.030	1.0		µg/L	1	11/25/2014 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-205-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141117A** QC Batch: **R96849**				PrepDate			Analyst: **RB**
Hexavalent Chromium	1.5	0.080	1.0		µg/L	5	11/17/2014 09:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141125A** QC Batch: **48011**				PrepDate	**11/18/2014**		Analyst: **CEI**
Chromium	1.9	0.030	1.0		µg/L	1	11/25/2014 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96848** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **PBW** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96848** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **LCSW** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.773	0.20	5.000	0	95.5	90	110				

Sample ID **N013884-003A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.352	1.0						18.79	2.34	20	

Sample ID **N013884-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.550	1.0	25.00	18.79	99.1	90	110				

Sample ID **N013884-003A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.806	1.0	25.00	18.79	100	90	110	43.55	0.585	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013884-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0.02440	106	90	110				

Sample ID **N013884-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0.03770	97.3	90	110				

Sample ID **N013884-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.164	1.0	25.00	23.19	99.9	90	110				

Sample ID **N013884-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.260	0.40	10.00	15.24	100	90	110				

Sample ID **N013884-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.909	0.20	5.000	7.896	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N013884-012A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:			RunNo:	**96848**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96848**	TestNo:	**EPA 218.6**			Analysis Date:	**11/14/2014**		SeqNo:	**1877264**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.139	0.20	5.000	10.99	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96849** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **PBW** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96849** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **LCSW** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.886	0.20	5.000	0	97.7	90	110				

Sample ID **N013884-013A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.159	1.0						32.24	0.248	20	

Sample ID **N013884-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.896	1.0	25.00	32.24	98.6	90	110				

Sample ID **N013884-013A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.857	1.0	25.00	32.24	98.5	90	110	56.90	0.0677	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013884-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.267	1.0	25.00	12.92	97.4	90	110				

Sample ID **N013884-021A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0.04680	102	90	110				

Sample ID **N013884-022A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.027	0.20	1.000	0.08150	94.6	90	110				

Sample ID **N013884-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.073	0.20	5.000	11.08	99.9	90	110				

Sample ID **N013884-017A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.258	0.40	10.00	15.61	96.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013884-018A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.929	1.0	25.00	23.31	98.5	90	110				

Sample ID **N013884-019A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.258	1.0	25.00	20.95	97.2	90	110				

Sample ID **N013884-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.869	0.40	2.000	0.8624	100	90	110				

Sample ID **N013884-020A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.138	1.0	25.00	20.53	98.4	90	110				

Sample ID **N013884-023A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.573	1.0	25.00	20.86	98.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013884-024A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	114.326	2.0	50.00	64.95	98.8	90	110				

Sample ID **N013884-025A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.930	1.0	25.00	1.529	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96848** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **PBW** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96848** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **LCSW** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.773	0.20	5.000	0	95.5	90	110				

Sample ID **N013884-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0.02770	103	90	110				

Sample ID **N013884-003A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.352	1.0						18.79	2.34	20	

Sample ID **N013884-003A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.550	1.0	25.00	18.79	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013884-003A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.806	1.0	25.00	18.79	100	90	110	43.55	0.585	20	

Sample ID **N013884-004A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96848**
Client ID: **ZZZZZZ** Batch ID: **R96848** TestNo: **EPA 218.6** Analysis Date: **11/14/2014** SeqNo: **1877294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.046	0.20	5.000	2.918	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96849** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **PBW** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96849** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **LCSW** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.886	0.20	5.000	0	97.7	90	110				

Sample ID **N013884-013A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.159	1.0						32.24	0.248	20	

Sample ID **N013884-013A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.896	1.0	25.00	32.24	98.6	90	110				

Sample ID **N013884-013A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.857	1.0	25.00	32.24	98.5	90	110	56.90	0.0677	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013884-014A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96849**
Client ID: **ZZZZZZ** Batch ID: **R96849** TestNo: **EPA 218.6** Analysis Date: **11/17/2014** SeqNo: **1877377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.888	0.20	5.000	4.010	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-48011** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **PBW** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-48011** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **LCSW** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.795	1.0	10.00	0	98.0	85	115				

Sample ID **N013884-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.402	1.0	10.00	0.03803	93.6	75	125				

Sample ID **N013884-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.502	1.0	10.00	0.03803	94.6	75	125	9.402	1.06	20	

Sample ID **N013884-014B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	14.937	1.0	10.00	5.894	90.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	270	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	270	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-003

Client Sample ID: MW-47-115-200
Collection Date: 11/11/2014 3:25:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	51	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	51	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	73	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	73	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-009

Client Sample ID: MW-33-090-200
Collection Date: 11/12/2014 2:18:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	100	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	55	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	55	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-011

Client Sample ID: MW-33-210-200
Collection Date: 11/12/2014 1:36:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	59	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	59	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:13:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	42	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	92	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03D-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	35	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03M-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	50	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	50	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-13-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	69	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	69	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-18-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	97	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	97	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-023

Client Sample ID: MW-35-060-200
Collection Date: 11/13/2014 12:23:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	54	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	54	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-024

Client Sample ID: MW-36-100-200
Collection Date: 11/13/2014 9:02:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141118A**	QC Batch: **R96828**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	250	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/18/2014 02:00 PM
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	11/18/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96828** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **LCSW** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.501	5.0	100.0	0	98.5	85	115				
Alkalinity, Total (As CaCO3)	100.642	5.0	100.0	0	101	85	115				

Sample ID **MB-R96828** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **PBW** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013866-026C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **ZZZZZZ** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	65.310	5.0						62.10	5.04	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	65.310	5.0						62.10	5.04	30	

Sample ID **N013866-026C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **ZZZZZZ** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	148.822	5.0	100.0	62.10	86.7	75	125				
Alkalinity, Total (As CaCO3)	148.822	5.0	100.0	62.10	86.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013866-026C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96828**
Client ID: **ZZZZZZ** Batch ID: **R96828** TestNo: **SM 2320 B** Analysis Date: **11/18/2014** SeqNo: **1876304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	149.893	5.0	100.0	62.10	87.8	75	125	148.8	0.717	20	
Alkalinity, Total (As CaCO3)	149.893	5.0	100.0	62.10	87.8	75	125	148.8	0.717	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-001

Client Sample ID: MW-44-070-200
Collection Date: 11/11/2014 3:36:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/17/2014 11:43 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Chloride	340	2.5	50		mg/L	100	11/18/2014 09:45 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	230	0.66	10		mg/L	20	11/17/2014 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-003

Client Sample ID: MW-47-115-200
Collection Date: 11/11/2014 3:25:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/18/2014 12:09 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	4400	25	500		mg/L	1000	11/19/2014 03:15 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141117A** QC Batch: **R96819**				PrepDate			Analyst: **PS**
Sulfate	750	3.3	50		mg/L	100	11/17/2014 11:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-006

Client Sample ID: MW-14-200
Collection Date: 11/12/2014 3:38:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/18/2014 10:27 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	500	2.5	50		mg/L	100	11/19/2014 11:49 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	100	0.66	10		mg/L	20	11/18/2014 03:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-009

Client Sample ID: MW-33-090-200
Collection Date: 11/12/2014 2:18:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/18/2014 10:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	2900	12	250		mg/L	500	11/19/2014 12:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141120A** QC Batch: **R96884**				PrepDate			Analyst: **PS**
Fluoride	7.8	0.11	1.0		mg/L	10	11/20/2014 11:08 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	710	3.3	50		mg/L	100	11/18/2014 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-010

Client Sample ID: MW-33-150-200
Collection Date: 11/12/2014 3:12:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/18/2014 11:26 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	4800	25	500		mg/L	1000	11/19/2014 03:28 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141120A** QC Batch: **R96884**				PrepDate			Analyst: **PS**
Fluoride	11	0.22	2.0		mg/L	20	11/20/2014 02:10 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	800	3.3	50		mg/L	100	11/18/2014 04:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-011

Client Sample ID: MW-33-210-200
Collection Date: 11/12/2014 1:36:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/18/2014 11:01 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	6400	25	500		mg/L	1000	11/19/2014 03:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141120A** QC Batch: **R96884**				PrepDate			Analyst: **PS**
Fluoride	13	0.55	5.0		mg/L	50	11/20/2014 02:42 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	1300	3.3	50		mg/L	100	11/18/2014 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-012

Client Sample ID: MW-37S-200
Collection Date: 11/12/2014 2:13:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/18/2014 11:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	1600	12	250		mg/L	500	11/19/2014 01:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	290	1.6	25		mg/L	50	11/18/2014 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-013

Client Sample ID: MW-44-115-200
Collection Date: 11/12/2014 10:06:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/18/2014 11:39 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	3300	12	250		mg/L	500	11/19/2014 01:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	820	3.3	50		mg/L	100	11/18/2014 07:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-016

Client Sample ID: OW-03D-200
Collection Date: 11/12/2014 9:36:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/18/2014 11:51 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	2900	12	250		mg/L	500	11/19/2014 01:34 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	420	1.6	25		mg/L	50	11/18/2014 07:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-017

Client Sample ID: OW-03M-200
Collection Date: 11/12/2014 10:53:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/18/2014 12:04 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	1700	12	250		mg/L	500	11/19/2014 01:47 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	320	1.6	25		mg/L	50	11/18/2014 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-019

Client Sample ID: MW-13-200
Collection Date: 11/13/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/18/2014 12:42 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	510	5.0	100		mg/L	200	11/19/2014 01:59 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	150	0.66	10		mg/L	20	11/18/2014 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-020

Client Sample ID: MW-18-200
Collection Date: 11/13/2014 10:40:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/18/2014 12:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	320	1.2	25		mg/L	50	11/19/2014 02:12 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	92	0.33	5.0		mg/L	10	11/18/2014 08:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-023

Client Sample ID: MW-35-060-200
Collection Date: 11/13/2014 12:23:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/18/2014 01:20 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	2100	12	250		mg/L	500	11/19/2014 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	350	1.6	25		mg/L	50	11/18/2014 08:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-024

Client Sample ID: MW-36-100-200
Collection Date: 11/13/2014 9:02:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/18/2014 01:07 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141119A** QC Batch: **R96854**				PrepDate			Analyst: **PS**
Chloride	2100	12	250		mg/L	500	11/19/2014 02:37 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141118A** QC Batch: **R96834**				PrepDate			Analyst: **PS**
Sulfate	660	3.3	50		mg/L	100	11/18/2014 07:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96819_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96819_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.626	0.50	2.500	0	105	90	110				

Sample ID **N013866-001C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.067	0.50						0.08000	0	20	

Sample ID **N013866-001C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.456	0.50	2.500	0.08000	95.0	80	120				

Sample ID **N013866-009C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.485	0.50	2.500	0.09200	95.7	80	120	2.431	2.20	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**N013866-009C-MS**	SampType:	**MS**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96819**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96819**	TestNo:	**EPA 300.0**			Analysis Date:	**11/17/2014**		SeqNo:	**1877784**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.431	0.50	2.500	0.09200	93.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96834_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **PBW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96834_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **LCSW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.636	0.50	2.500	0	105	90	110				

Sample ID **N013884-006C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.149	0.50						0.1390	0	20	

Sample ID **N013884-006C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.365	0.50	2.500	0.1390	89.0	80	120				

Sample ID **N013884-006C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.358	0.50	2.500	0.1390	88.8	80	120	2.365	0.296	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**N013884-009C-DUP**	SampType:	**DUP**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96834**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96834**	TestNo:	**EPA 300.0**			Analysis Date:	**11/18/2014**		SeqNo:	**1879098**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.250	2.5						0.2300	0	20	

Sample ID	**N013884-009C-MS**	SampType:	**MS**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:			RunNo:	**96834**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96834**	TestNo:	**EPA 300.0**			Analysis Date:	**11/18/2014**		SeqNo:	**1879099**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	11.570	2.5	12.50	0.2300	90.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96819_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R96819_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.560	0.50	2.500	0	102	90	110				

Sample ID **N013866-001C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	169.100	10	50.00	115.7	107	80	120				

Sample ID **N013866-001C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	117.600	10						115.7	1.63	20	

Sample ID **N013866-001C-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	168.980	10	50.00	115.7	107	80	120	169.1	0.0710	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96834_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **PBW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R96834_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **LCSW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.557	0.50	2.500	0	102	90	110				

Sample ID **N013866-015D-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3283.000	250	1250	1940	107	80	120				

Sample ID **N013866-015D-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3245.500	250	1250	1940	104	80	120	3283	1.15	20	

Sample ID **N013866-015D-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1949.000	250						1940	0.437	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96854_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96854**
Client ID: **PBW** Batch ID: **R96854** TestNo: **EPA 300.0** Analysis Date: **11/19/2014** SeqNo: **1879173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-_R96854_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96854**
Client ID: **LCSW** Batch ID: **R96854** TestNo: **EPA 300.0** Analysis Date: **11/19/2014** SeqNo: **1879174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.512	0.50	2.500	0	100	90	110				

Sample ID **N013884-012C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96854**
Client ID: **ZZZZZZ** Batch ID: **R96854** TestNo: **EPA 300.0** Analysis Date: **11/19/2014** SeqNo: **1879191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1616.000	250						1613	0.186	20	

Sample ID **N013884-012C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96854**
Client ID: **ZZZZZZ** Batch ID: **R96854** TestNo: **EPA 300.0** Analysis Date: **11/19/2014** SeqNo: **1879192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2928.500	250	1250	1613	105	80	120				

Sample ID **N013884-012C-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96854**
Client ID: **ZZZZZZ** Batch ID: **R96854** TestNo: **EPA 300.0** Analysis Date: **11/19/2014** SeqNo: **1879193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2989.500	250	1250	1613	110	80	120	2928	2.06	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N013884-017C-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96854
Client ID:	ZZZZZZ	Batch ID:	R96854	TestNo:	EPA 300.0			Analysis Date:	11/19/2014	SeqNo:	1879194

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1691.500	250						1666	1.49	20	

Sample ID	N013884-017C-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96854
Client ID:	ZZZZZZ	Batch ID:	R96854	TestNo:	EPA 300.0			Analysis Date:	11/19/2014	SeqNo:	1879195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3001.500	250	1250	1666	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **MB-R96884_F** SampType: **MBLK** TestCode: **300_W_FPG** Units: **mg/L** Prep Date: RunNo: **96884**
Client ID: **PBW** Batch ID: **R96884** TestNo: **EPA 300.0** Analysis Date: **11/20/2014** SeqNo: **1879284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **LCS-R96884_F** SampType: **LCS** TestCode: **300_W_FPG** Units: **mg/L** Prep Date: RunNo: **96884**
Client ID: **LCSW** Batch ID: **R96884** TestNo: **EPA 300.0** Analysis Date: **11/20/2014** SeqNo: **1879285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.531	0.10	2.500	0	101	90	110				

Sample ID **N013866-018D-MS** SampType: **MS** TestCode: **300_W_FPG** Units: **mg/L** Prep Date: RunNo: **96884**
Client ID: **ZZZZZZ** Batch ID: **R96884** TestNo: **EPA 300.0** Analysis Date: **11/20/2014** SeqNo: **1879290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.790	1.0	10.00	4.860	89.3	80	120				

Sample ID **N013866-018D-DUP** SampType: **DUP** TestCode: **300_W_FPG** Units: **mg/L** Prep Date: RunNo: **96884**
Client ID: **ZZZZZZ** Batch ID: **R96884** TestNo: **EPA 300.0** Analysis Date: **11/20/2014** SeqNo: **1879296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.020	1.0						4.860	3.24	20	

Sample ID **N013866-018D-MSD** SampType: **MSD** TestCode: **300_W_FPG** Units: **mg/L** Prep Date: RunNo: **96884**
Client ID: **ZZZZZZ** Batch ID: **R96884** TestNo: **EPA 300.0** Analysis Date: **11/20/2014** SeqNo: **1879297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.910	1.0	10.00	4.860	90.5	80	120	13.79	0.866	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96819_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **PBW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96819_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **LCSW** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.097	0.50	5.000	0	102	90	110				

Sample ID **N013831-018D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1538.200	100						1544	0.376	20	

Sample ID **N013831-018D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2627.600	100	1000	1544	108	80	120				

Sample ID **N013831-018D-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2627.200	100	1000	1544	108	80	120	2628	0.0152	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **N013866-001C-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	308.340	10	100.0	201.7	107	80	120				

Sample ID **N013866-001C-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	204.000	10						201.7	1.12	20	

Sample ID **N013866-001C-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96819**
Client ID: **ZZZZZZ** Batch ID: **R96819** TestNo: **EPA 300.0** Analysis Date: **11/17/2014** SeqNo: **1877854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	303.980	10	100.0	201.7	102	80	120	308.3	1.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96834_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **PBW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96834_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **LCSW** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.107	0.50	5.000	0	102	90	110				

Sample ID **N013884-006C-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	102.420	10						103.2	0.797	20	

Sample ID **N013884-006C-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	203.560	10	100.0	103.2	100	80	120				

Sample ID **N013884-006C-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96834**
Client ID: **ZZZZZZ** Batch ID: **R96834** TestNo: **EPA 300.0** Analysis Date: **11/18/2014** SeqNo: **1879148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	200.820	10	100.0	103.2	97.6	80	120	203.6	1.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N013884-012C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96834
Client ID:	ZZZZZZ	Batch ID:	R96834	TestNo:	EPA 300.0			Analysis Date:	11/18/2014	SeqNo:	1879155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	286.300	25						288.0	0.609	20	

Sample ID	N013884-012C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96834
Client ID:	ZZZZZZ	Batch ID:	R96834	TestNo:	EPA 300.0			Analysis Date:	11/18/2014	SeqNo:	1879156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	538.900	25	250.0	288.0	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-130-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125E**	QC Batch: **R96947**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125E** QC Batch: **R96947** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	4.0	0.11	0.25		mg/L	5	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125E** QC Batch: **R96947** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125E** QC Batch: **R96947** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.3	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 1:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125E** QC Batch: **R96947** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.9	0.044	0.10		mg/L	2	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125E** QC Batch: **R96947** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.19	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125E** QC Batch: **R96947** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.12	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125I** QC Batch: **R97021** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.9	0.044	0.10		mg/L	2	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125I** QC Batch: **R97021** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.22	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R96947	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96947
Client ID:	PBW	Batch ID:	R96947	TestNo:	SM4500-NO3			Analysis Date:	11/25/2014	SeqNo:	1882109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R96947	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96947
Client ID:	LCSW	Batch ID:	R96947	TestNo:	SM4500-NO3			Analysis Date:	11/25/2014	SeqNo:	1882110

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.998	0.050	1.000	0	99.8	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N013884-013D-DUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97021**
Client ID: **ZZZZZZ** Batch ID: **R97021** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1885265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.197	0.050						0.1863	5.48	20	

Sample ID **N013884-013D-MS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97021**
Client ID: **ZZZZZZ** Batch ID: **R97021** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1885266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.290	0.050	1.000	0.1863	110	85	115				

Sample ID **N013884-013D-MSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97021**
Client ID: **ZZZZZZ** Batch ID: **R97021** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1885267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.303	0.050	1.000	0.1863	112	85	115	1.290	0.995	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-001

Client Sample ID: MW-44-070-200
Collection Date: 11/11/2014 3:36:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	350	19	100		ug/L	1	11/26/2014 11:14 AM
Calcium	41000	58	500		ug/L	1	11/26/2014 11:14 AM
Iron	120	1.3	20		ug/L	1	11/26/2014 11:14 AM
Magnesium	6800	11	100		ug/L	1	11/26/2014 11:14 AM
Sodium	400000	940	12000		ug/L	25	11/25/2014 01:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-003

Client Sample ID: MW-47-115-200
Collection Date: 11/11/2014 3:25:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	1000	19	100		ug/L	1	11/26/2014 11:19 AM
Calcium	420000	58	500		ug/L	1	11/26/2014 11:19 AM
Iron	ND	1.3	20		ug/L	1	11/26/2014 11:19 AM
Magnesium	30000	11	100		ug/L	1	11/26/2014 11:19 AM
Sodium	2600000	3800	50000		ug/L	100	11/25/2014 02:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	290	19	100		ug/L	1	11/26/2014 11:29 AM
Calcium	95000	58	500		ug/L	1	11/26/2014 11:29 AM
Iron	33	1.3	20		ug/L	1	11/26/2014 11:29 AM
Magnesium	13000	11	100		ug/L	1	11/26/2014 11:29 AM
Sodium	280000	940	12000		ug/L	25	11/25/2014 01:18 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**				PrepDate	**11/18/2014**	Analyst: **CEI**
Boron	940	19	100		ug/L	1	11/26/2014 11:34 AM
Calcium	320000	58	500		ug/L	1	11/26/2014 11:34 AM
Iron	ND	1.3	20		ug/L	1	11/26/2014 11:34 AM
Magnesium	25000	11	100		ug/L	1	11/26/2014 11:34 AM
Sodium	1800000	3800	50000		ug/L	100	11/25/2014 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-010

Client Sample ID: MW-33-150-200
Collection Date: 11/12/2014 3:12:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	1000	19	100		ug/L	1	11/26/2014 11:41 AM
Calcium	410000	290	2500		ug/L	5	12/1/2014 10:05 PM
Iron	34	1.3	20		ug/L	1	11/26/2014 11:41 AM
Magnesium	39000	11	100		ug/L	1	11/26/2014 11:41 AM
Sodium	3000000	3800	50000		ug/L	100	11/25/2014 01:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-011

Client Sample ID: MW-33-210-200
Collection Date: 11/12/2014 1:36:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	1300	19	100		ug/L	1	11/26/2014 11:46 AM
Calcium	630000	290	2500		ug/L	5	12/1/2014 10:09 PM
Iron	30	1.3	20		ug/L	1	11/26/2014 11:46 AM
Magnesium	59000	11	100		ug/L	1	11/26/2014 11:46 AM
Sodium	3900000	7500	100000		ug/L	200	11/25/2014 01:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:13:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	700	19	100		ug/L	1	11/26/2014 11:51 AM
Calcium	200000	58	500		ug/L	1	11/26/2014 11:51 AM
Iron	ND	1.3	20		ug/L	1	11/26/2014 11:51 AM
Magnesium	22000	11	100		ug/L	1	11/26/2014 11:51 AM
Sodium	1000000	3800	50000		ug/L	100	11/25/2014 01:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-013

Client Sample ID: MW-44-115-200
Collection Date: 11/12/2014 10:06:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	1600	19	100		ug/L	1	11/26/2014 12:13 PM
Calcium	120000	58	500		ug/L	1	11/26/2014 12:13 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:13 PM
Magnesium	5700	11	100		ug/L	1	11/26/2014 12:13 PM
Sodium	2300000	3800	50000		ug/L	100	11/25/2014 01:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03D-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	1200	19	100		ug/L	1	11/26/2014 12:25 PM
Calcium	220000	58	500		ug/L	1	11/26/2014 12:25 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:25 PM
Magnesium	15000	11	100		ug/L	1	11/26/2014 12:25 PM
Sodium	1900000	3800	50000		ug/L	100	11/25/2014 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03M-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**				PrepDate	**11/18/2014**	Analyst: **CEI**
Boron	910	19	100		ug/L	1	11/26/2014 12:31 PM
Calcium	110000	58	500		ug/L	1	11/26/2014 12:31 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:31 PM
Magnesium	8000	11	100		ug/L	1	11/26/2014 12:31 PM
Sodium	1200000	3800	50000		ug/L	100	11/25/2014 01:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-019

Client Sample ID: MW-13-200
Collection Date: 11/13/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	340	19	100		ug/L	1	11/26/2014 12:36 PM
Calcium	100000	58	500		ug/L	1	11/26/2014 12:36 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:36 PM
Magnesium	12000	11	100		ug/L	1	11/26/2014 12:36 PM
Sodium	300000	940	12000		ug/L	25	11/25/2014 01:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-18-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	180	19	100		ug/L	1	11/26/2014 12:42 PM
Calcium	81000	58	500		ug/L	1	11/26/2014 12:42 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:42 PM
Magnesium	12000	11	100		ug/L	1	11/26/2014 12:42 PM
Sodium	170000	190	2500		ug/L	5	11/25/2014 12:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	680	19	100		ug/L	1	11/26/2014 12:47 PM
Calcium	310000	58	500		ug/L	1	11/26/2014 12:47 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:47 PM
Magnesium	30000	11	100		ug/L	1	11/26/2014 12:47 PM
Sodium	1200000	3800	50000		ug/L	100	11/25/2014 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141126A**	QC Batch: **48010**			PrepDate	**11/18/2014**		Analyst: **CEI**
Boron	920	19	100		ug/L	1	11/26/2014 12:53 PM
Calcium	180000	58	500		ug/L	1	11/26/2014 12:53 PM
Iron	ND	1.3	20		ug/L	1	11/26/2014 12:53 PM
Magnesium	23000	11	100		ug/L	1	11/26/2014 12:53 PM
Sodium	1400000	3800	50000		ug/L	100	11/25/2014 02:15 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48010** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96940**
Client ID: **PBW** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-48010** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96940**
Client ID: **LCSW** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19801.822	500	20000	0	99.0	85	115				

Sample ID **N013884-003B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96940**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2685474.318	50000	20000	2637000	240	75	125				S

Sample ID **N013884-003B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96940**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2708037.255	50000	20000	2637000	353	75	125	2685000	0.837	20	S

Sample ID **N013884-024B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96940**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1881934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1507090.234	50000	20000	1410000	486	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48010** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96962**
Client ID: **PBW** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1882888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	2.444	20									
Magnesium	ND	100									

Sample ID **LCS1-48010** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96962**
Client ID: **LCSW** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1882889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4585.248	100	5000	0	91.7	85	115				
Calcium	9371.415	500	10000	0	93.7	85	115				
Iron	104.044	20	100.0	0	104	85	115				
Magnesium	9455.742	100	10000	0	94.6	85	115				

Sample ID **N013884-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96962**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1882913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5284.605	100	5000	349.9	98.7	75	125				
Calcium	54187.861	500	10000	41390	128	75	125				S
Iron	223.155	20	100.0	123.4	99.8	75	125				
Magnesium	16920.731	100	10000	6793	101	75	125				

Sample ID **N013884-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96962**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1882914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5333.114	100	5000	349.9	99.7	75	125	5285	0.914	20	
Calcium	53914.012	500	10000	41390	125	75	125	54190	0.507	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013884-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96962**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1882914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	222.665	20	100.0	123.4	99.3	75	125	223.2	0.220	20	
Magnesium	16773.377	100	10000	6793	99.8	75	125	16920	0.875	20	

Sample ID **N013884-023B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **11/18/2014** RunNo: **96962**
Client ID: **ZZZZZZ** Batch ID: **48010** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1882915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5828.566	100	5000	675.5	103	75	125				
Calcium	319148.504	500	10000	314200	50.0	75	125				S
Iron	101.519	20	100.0	2.228	99.3	75	125				
Magnesium	39559.004	100	10000	30090	94.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	4.5	0.027	0.10		µg/L	1	11/25/2014 10:50 AM
Manganese	100	0.13	2.5		µg/L	5	11/25/2014 10:55 AM
Molybdenum	14	0.15	0.50		µg/L	1	11/25/2014 10:50 AM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 10:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-115-200
Lab Order:	N013884	**Collection Date:**	11/11/2014 3:25:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 11:01 AM
Molybdenum	23	0.76	2.5		µg/L	5	11/25/2014 11:06 AM
Selenium	0.89	0.069	0.50		µg/L	1	12/1/2014 12:43 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-130-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	3.2	0.027	0.10		µg/L	1	11/25/2014 11:12 AM
Manganese	370	0.13	2.5		µg/L	5	11/25/2014 11:18 AM
Molybdenum	99	0.15	0.50		µg/L	1	11/25/2014 11:12 AM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 11:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	0.94	0.027	0.10		µg/L	1	11/25/2014 11:45 AM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 11:45 AM
Molybdenum	15	0.15	0.50		µg/L	1	11/25/2014 11:45 AM
Selenium	2.5	0.069	0.50		µg/L	1	11/25/2014 11:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	1.2	0.027	0.10		µg/L	1	11/25/2014 11:57 AM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 11:57 AM
Molybdenum	15	0.15	0.50		µg/L	1	11/25/2014 11:57 AM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 11:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	0.74	0.027	0.10		µg/L	1	11/25/2014 12:08 PM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 12:08 PM
Molybdenum	39	0.15	0.50		µg/L	1	11/25/2014 12:08 PM
Selenium	ND	0.069	0.50		µg/L	1	12/1/2014 12:54 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 1:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	1.0	0.027	0.10		µg/L	1	11/25/2014 12:19 PM
Manganese	14	0.026	0.50		µg/L	1	11/25/2014 12:19 PM
Molybdenum	17	0.76	2.5		µg/L	5	11/25/2014 12:24 PM
Selenium	ND	0.34	2.5		µg/L	5	11/25/2014 12:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37S-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 2:13:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	1.8	0.027	0.10		µg/L	1	11/25/2014 12:40 PM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 12:40 PM
Molybdenum	18	0.15	0.50		µg/L	1	11/25/2014 12:40 PM
Selenium	0.85	0.069	0.50		µg/L	1	11/25/2014 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013884
Project: PG&E Topock
Lab ID: N013884-013

Client Sample ID: MW-44-115-200
Collection Date: 11/12/2014 10:06:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Antimony	ND	0.18	0.50		µg/L	1	11/25/2014 12:53 PM
Arsenic	5.4	0.027	0.10		µg/L	1	11/25/2014 12:53 PM
Barium	18	0.030	1.0		µg/L	1	11/25/2014 12:53 PM
Beryllium	ND	0.051	2.5		µg/L	5	11/25/2014 12:58 PM
Cadmium	ND	0.013	0.50		µg/L	1	11/25/2014 12:53 PM
Cobalt	ND	0.017	0.50		µg/L	1	11/25/2014 12:53 PM
Copper	ND	0.040	1.0		µg/L	1	11/25/2014 12:53 PM
Lead	ND	0.053	5.0		µg/L	5	11/25/2014 12:58 PM
Manganese	2.9	0.026	0.50		µg/L	1	11/25/2014 12:53 PM
Molybdenum	85	0.15	0.50		µg/L	1	11/25/2014 12:53 PM
Nickel	ND	0.032	1.0		µg/L	1	11/25/2014 12:53 PM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 12:53 PM
Silver	ND	0.094	0.50		µg/L	1	11/25/2014 12:53 PM
Thallium	ND	0.040	2.5		µg/L	5	11/25/2014 12:58 PM
Vanadium	6.2	0.16	1.0		µg/L	1	11/25/2014 12:53 PM
Zinc	ND	0.23	10		µg/L	1	11/25/2014 12:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	3.3	0.027	0.10		µg/L	1	11/25/2014 01:04 PM
Manganese	400	0.13	2.5		µg/L	5	11/25/2014 01:09 PM
Molybdenum	110	0.15	0.50		µg/L	1	11/25/2014 01:04 PM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03D-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**				PrepDate	**11/18/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 01:15 PM
Molybdenum	25	0.15	0.50		µg/L	1	11/25/2014 01:15 PM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 01:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	OW-03M-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:53:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**				PrepDate	**11/18/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 01:26 PM
Molybdenum	16	0.15	0.50		µg/L	1	11/25/2014 01:26 PM
Selenium	0.62	0.069	0.50		µg/L	1	11/25/2014 01:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-13-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	1.9	0.027	0.10		µg/L	1	11/25/2014 01:59 PM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 01:59 PM
Molybdenum	12	0.15	0.50		µg/L	1	11/25/2014 01:59 PM
Selenium	3.2	0.069	0.50		µg/L	1	11/25/2014 01:59 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-18-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**				PrepDate	**11/18/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 02:10 PM
Molybdenum	5.3	0.15	0.50		µg/L	1	11/25/2014 02:10 PM
Selenium	3.4	0.069	0.50		µg/L	1	11/25/2014 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	0.93	0.027	0.10		µg/L	1	11/25/2014 02:21 PM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 02:21 PM
Molybdenum	9.2	0.15	0.50		µg/L	1	11/25/2014 02:21 PM
Selenium	0.80	0.069	0.50		µg/L	1	11/25/2014 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-200
Lab Order:	N013884	**Collection Date:**	11/13/2014 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141125A**	QC Batch: **48011**			PrepDate	**11/18/2014**		Analyst: **CEI**
Arsenic	8.9	0.027	0.10		µg/L	1	11/25/2014 02:32 PM
Manganese	ND	0.026	0.50		µg/L	1	11/25/2014 02:32 PM
Molybdenum	30	0.15	0.50		µg/L	1	11/25/2014 02:32 PM
Selenium	ND	0.069	0.50		µg/L	1	11/25/2014 02:32 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-48011	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	11/18/2014	RunNo:	96956
Client ID:	PBW	Batch ID:	48011	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/25/2014	SeqNo:	1882785

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	0.009	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID	LCS-48011	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	11/18/2014	RunNo:	96956
Client ID:	LCSW	Batch ID:	48011	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/25/2014	SeqNo:	1882786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.387	0.50	10.00	0	104	85	115				
Arsenic	10.020	0.10	10.00	0	100	85	115				
Barium	104.430	1.0	100.0	0	104	85	115				
Beryllium	10.537	0.50	10.00	0	105	85	115				
Cadmium	10.151	0.50	10.00	0	102	85	115				
Cobalt	9.535	0.50	10.00	0	95.4	85	115				
Copper	9.754	1.0	10.00	0	97.5	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LCS-48011** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **LCSW** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.621	1.0	10.00	0	106	85	115				
Manganese	99.954	0.50	100.0	0	100	85	115				
Molybdenum	10.309	0.50	10.00	0	103	85	115				
Nickel	9.740	1.0	10.00	0	97.4	85	115				
Selenium	9.574	0.50	10.00	0	95.7	85	115				
Silver	8.938	0.50	10.00	0	89.4	85	115				
Thallium	10.570	0.50	10.00	0	106	85	115				
Vanadium	10.332	1.0	10.00	0	103	85	115				
Zinc	103.540	10	100.0	0	104	85	115				

Sample ID **N013884-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.841	0.50	10.00	0	108	75	125				
Arsenic	14.432	0.10	10.00	4.497	99.4	75	125				
Barium	134.650	1.0	100.0	31.72	103	75	125				
Beryllium	9.912	0.50	10.00	0	99.1	75	125				
Cadmium	9.362	0.50	10.00	0	93.6	75	125				
Cobalt	9.013	0.50	10.00	0.1951	88.2	75	125				
Copper	7.281	1.0	10.00	0	72.8	75	125				S
Lead	10.782	1.0	10.00	0	108	75	125				
Molybdenum	25.617	0.50	10.00	13.97	117	75	125				
Nickel	9.195	1.0	10.00	0.2805	89.1	75	125				
Selenium	9.630	0.50	10.00	0	96.3	75	125				
Silver	7.186	0.50	10.00	0	71.9	75	125				S
Thallium	10.860	0.50	10.00	0	109	75	125				
Vanadium	11.806	1.0	10.00	1.053	108	75	125				
Zinc	85.283	10	100.0	0.5291	84.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N013884-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	201.392	2.5	100.0	101.2	100	75	125				

Sample ID **N013884-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.862	0.50	10.00	0	109	75	125	10.84	0.190	20	
Arsenic	14.660	0.10	10.00	4.497	102	75	125	14.43	1.57	20	
Barium	134.200	1.0	100.0	31.72	102	75	125	134.7	0.335	20	
Beryllium	9.924	0.50	10.00	0	99.2	75	125	9.912	0.123	20	
Cadmium	9.402	0.50	10.00	0	94.0	75	125	9.362	0.423	20	
Cobalt	9.102	0.50	10.00	0.1951	89.1	75	125	9.013	0.982	20	
Copper	7.325	1.0	10.00	0	73.3	75	125	7.281	0.615	20	S
Lead	10.740	1.0	10.00	0	107	75	125	10.78	0.395	20	
Molybdenum	25.410	0.50	10.00	13.97	114	75	125	25.62	0.811	20	
Nickel	9.259	1.0	10.00	0.2805	89.8	75	125	9.195	0.687	20	
Selenium	9.574	0.50	10.00	0	95.7	75	125	9.630	0.588	20	
Silver	7.182	0.50	10.00	0	71.8	75	125	7.186	0.0594	20	S
Thallium	10.775	0.50	10.00	0	108	75	125	10.86	0.789	20	
Vanadium	11.790	1.0	10.00	1.053	107	75	125	11.81	0.139	20	
Zinc	85.758	10	100.0	0.5291	85.2	75	125	85.28	0.555	20	

Sample ID **N013884-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	201.625	2.5	100.0	101.2	100	75	125	201.4	0.116	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N013884-014B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.819	0.50	10.00	0	108	75	125				
Arsenic	13.225	0.10	10.00	3.310	99.1	75	125				
Beryllium	10.756	0.50	10.00	0	108	75	125				
Cadmium	8.779	0.50	10.00	0	87.8	75	125				
Cobalt	8.264	0.50	10.00	0	82.6	75	125				
Copper	2.692	1.0	10.00	0	26.9	75	125				S
Molybdenum	124.150	0.50	10.00	113.7	104	75	125				
Nickel	8.504	1.0	10.00	0	85.0	75	125				
Selenium	9.689	0.50	10.00	0.08697	96.0	75	125				
Silver	6.989	0.50	10.00	0	69.9	75	125				S
Vanadium	10.819	1.0	10.00	0.4557	104	75	125				
Zinc	78.409	10	100.0	0	78.4	75	125				

Sample ID **N013884-014B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/18/2014** RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	209.340	5.0	100.0	93.18	116	75	125				
Lead	11.451	5.0	10.00	0	115	75	125				
Manganese	507.556	2.5	100.0	404.0	104	75	125				
Thallium	11.650	2.5	10.00	0	117	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-200
Lab Order:	N013884	**Collection Date:**	11/12/2014 10:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013884-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141202A**	QC Batch: **48084**			PrepDate	**12/1/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/2/2014 03:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID **MB-48084** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/1/2014** RunNo: **96993**
Client ID: **PBW** Batch ID: **48084** TestNo: **EPA 7470A** Analysis Date: **12/2/2014** SeqNo: **1883828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID **LCS-48084** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/1/2014** RunNo: **96993**
Client ID: **LCSW** Batch ID: **48084** TestNo: **EPA 7470A** Analysis Date: **12/2/2014** SeqNo: **1883829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.891	0.20	5.000	0	97.8	85	115				

Sample ID **N013884-013B-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/1/2014** RunNo: **96993**
Client ID: **ZZZZZZ** Batch ID: **48084** TestNo: **EPA 7470A** Analysis Date: **12/2/2014** SeqNo: **1883830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.604	0.20	5.000	0	92.1	75	125				

Sample ID **N013884-013B-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/1/2014** RunNo: **96993**
Client ID: **ZZZZZZ** Batch ID: **48084** TestNo: **EPA 7470A** Analysis Date: **12/2/2014** SeqNo: **1883831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.698	0.20	5.000	0	94.0	75	125	4.604	2.02	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/13/2014 3:45:50 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/13/2014
COC Number: 5

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-44-070-200	11/11/2014	15:36	Water		X	X	X		X		X	X	X		X	X	X		X	N013884-01	6	
MW-44-070-200-EB	11/11/2014	14:33	Water	X					X											-02	2	
MW-47-115-200	11/11/2014	15:25	Water	X			X		X		X		X		X	X	X		X	-03	4	
MW-130-200	11/12/2014	7:00	Water		X	X			X		X	X			X			X		-04	6	
MW-133-200	11/12/2014	8:15	Water	X					X						X					-05	3	
MW-14-200	11/12/2014	15:38	Water	X		X	X		X		X		X		X	X	X	X		-06	4	
MW-207-200	11/12/2014	6:58	Water	X																-07	1	
MW-208-200	11/12/2014	6:50	Water	X																-08	1	
MW-33-090-200	11/12/2014	14:18	Water	X		X	X		X		X			X	X	X	X	X	X	-09	5	
MW-33-150-200	11/12/2014	15:12	Water	X		X	X		X		X			X	X	X	X	X	X	-10	5	
MW-33-210-200	11/12/2014	13:36	Water	X		X	X		X		X			X	X	X	X	X	X	-11	5	
MW-37S-200	11/12/2014	14:13	Water	X		X	X		X		X		X		X	X	X			-12	3	
MW-44-115-200	11/12/2014	10:06	Water	X			X	X	X	X			X		X	X	X	X	X	-13	5	
MW-44-125-200	11/12/2014	8:50	Water		X	X			X		X	X			X			X		-14	6	

	Signatures	Date/Time
Approved by		11-13-14
Sampled by		1554
Relinquished by		
Received by		11/13/14 1554
Relinquished by		11/13/14 1824
Received by		11/13/14 1824

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 3.1°C / 3.5°C IR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/13/2014 3:45:51 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/13/2014
COC Number: 5

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	T22:SbAsBaBeCdCoCuPbHgMoNi Field Filtered Metals (6010B/6020A/7470Adis)	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-44-125-200-EB	11/12/2014	7:56	Water	X					X											N013884-15	2	
OW-03D-200	11/12/2014	9:36	Water	X			X		X		X		X		X	X	X			-16	3	
OW-03M-200	11/12/2014	10:53	Water	X			X		X		X		X		X	X	X			-17	3	
OW-03S-200	11/12/2014	11:59	Water	X					X						X					-18	3	
MW-13-200	11/13/2014	9:08	Water	X		X	X		X		X		X		X	X	X			-19	3	
MW-18-200	11/13/2014	10:40	Water	X			X		X		X		X		X	X	X			-20	3	
MW-209-200	11/13/2014	7:22	Water	X																-21	1	
MW-210-200	11/13/2014	7:20	Water	X																-22	1	
MW-35-060-200	11/13/2014	12:23	Water	X		X	X		X		X		X		X	X	X	X	X	-23	5	
MW-36-100-200	11/13/2014	9:02	Water	X		X	X		X		X		X		X	X	X	X	X	-24	5	
MW-46-205-200	11/13/2014	10:58	Water	X					X						X					-25	3	
																				TOTAL NUMBER OF CONTAINERS	~~80~~ 88	

	Signatures	Date/Time
Approved by		11-13-14
Sampled by		1554
Relinquished by		
Received by		11/13/14 1554
Relinquished by		11/13/14 1724
Received by		11/13/14 1724

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 2-3°C / 2.4°C
Airbill No: 1842
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

11/13/2014 3:45:50 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/13/2014
COC Number: 5

N013884

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-44-070-200	11/11/2014	15:36	Water		X	X	X		X		X	X	X		X	X	X		X		6	
MW-44-070-200-EB	11/11/2014	14:33	Water	X					X											Hold	2	
MW-47-115-200	11/11/2014	15:25	Water	X			X		X		X		X		X	X	X		X		4	
MW-130-200	11/12/2014	7:00	Water		X	X			X		X	X			X			X			6	
MW-133-200	11/12/2014	8:15	Water	X					X						X						3	
MW-14-200	11/12/2014	15:38	Water	X		X	X		X		X		X		X	X	X	X			4	
MW-207-200	11/12/2014	6:58	Water	X																	1	
MW-208-200	11/12/2014	6:50	Water	X																	1	
MW-33-090-200	11/12/2014	14:18	Water	X		X	X		X		X			X	X	X	X	X	X		5	
MW-33-150-200	11/12/2014	15:12	Water	X		X	X		X		X			X	X	X	X	X	X		5	
MW-33-210-200	11/12/2014	13:36	Water	X		X	X		X		X			X	X	X	X	X	X		5	
MW-37S-200	11/12/2014	14:13	Water	X		X	X		X		X		X		X	X	X				3	
MW-44-115-200	11/12/2014	10:06	Water	X			X	X	X	X			X		X	X	X	X	X		5	
MW-44-125-200	11/12/2014	8:50	Water		X	X			X		X	X			X			X			6	

	Signatures	Date/Time
Approved by		11-13-14
Sampled by		1554
Relinquished by		
Received by		11/13/14 1554
Relinquished by		11/13/14 1824
Received by		11/13/14 1824

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 3.1°C / 5.5°C / IR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

Please place the specified samples on hold.

Shawn P. Duffy
11/14/2014

CH2MHILL

CHAIN OF CUSTODY RECORD

11/13/2014 3:45:51 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/13/2014
COC Number: 5

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	180	7	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Anions (E300.0) Bromide,Chloride,Sulfate,Fluoride	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-44-125-200-EB	11/12/2014	7:56	Water	X					X											Hold	2	
OW-03D-200	11/12/2014	9:36	Water	X			X		X		X		X		X	X	X				3	
OW-03M-200	11/12/2014	10:53	Water	X			X		X		X		X		X	X	X				3	
OW-03S-200	11/12/2014	11:59	Water	X					X						X						3	
MW-13-200	11/13/2014	9:08	Water	X		X	X		X		X		X		X	X	X				3	
MW-18-200	11/13/2014	10:40	Water	X			X		X		X		X		X	X	X				3	
MW-209-200	11/13/2014	7:22	Water	X																	1	
MW-210-200	11/13/2014	7:20	Water	X																	1	
MW-35-060-200	11/13/2014	12:23	Water	X		X	X		X		X		X		X	X	X	X	X		5	
MW-36-100-200	11/13/2014	9:02	Water	X		X	X		X		X		X		X	X	X	X	X		5	
MW-46-205-200	11/13/2014	10:58	Water	X					X						X						3	
																				TOTAL NUMBER OF CONTAINERS	~~80~~ 88	

	Signatures	Date/Time
Approved by		11-13-14
Sampled by		1554
Relinquished by		
Received by		11/13/14 1554
Relinquished by		11/13/14 1624
Received by		11/13/14 1624

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 2-3°C / 2.4°C
Airbill No: 1842
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/13/2014	Workorder:	N013884
Rep sample Temp (Deg C):	3.1,3.5,2.3,2.4	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: For: JPG MBC 11/15/2014

Reviewed By: JPG 11/18/14

Marlon B. Cartin

From: Shawn.Duffy@CH2M.com
Sent: Friday, November 14, 2014 3:40 PM
To: marlon@assetlaboratories.com; glen@assetlaboratories.com
Cc: Erlene.Contreras@CH2M.com; Priya.Kumar@CH2M.com
Subject: Corrected COC
Attachments: N013884-COC-11-14-2014.pdf

Hi Marlon,

Please see the attached COC for corrections to the COC.

Shawn Duffy
Project Chemist
CH2M HILL
2525 Airpark Dr.
Redding, CA 96001
Office: (530) 229-3303
Home Office: (530) 243-1078
Fax: (530) 339-3303
Cell: (530) 510-2340

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
600 S. Andreasen Dr. Suite A
Escondido, Ca 92029

TEL: (760) 781-3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

17-Nov-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N013884-001E / MW-44-070-200	Water	11/11/2014 3:36:00 PM	8OZP	1		
N013884-003D / MW-47-115-200	Water	11/11/2014 3:25:00 PM	8OZP	1		
N013884-009E / MW-33-090-200	Water	11/12/2014 2:18:00 PM	8OZP	1		
N013884-010E / MW-33-150-200	Water	11/12/2014 3:12:00 PM	8OZP	1		
N013884-011E / MW-33-210-200	Water	11/12/2014 1:36:00 PM	8OZP	1		
N013884-013E / MW-44-115-200	Water	11/12/2014 10:06:00 AM	8OZP	1		
N013884-023E / MW-35-060-200	Water	11/13/2014 12:23:00 PM	8OZP	1		
N013884-024E / MW-36-100-200	Water	11/13/2014 9:02:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13884A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by:
Normal TAT

Please analyze for Oxygen/Deuterium. CH2M Hill sample.

FedEx# 7718 9119 5733

		Date/Time			Date/Time
Relinquished by:	jpg 11/17/14	17:00	**Received by:**		
Relinquished by:			**Received by:**		

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N013884-001D** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(60.9172-60.8297)*1000000}{75}$$
$$= 1167$$

Reporting result in two significant figures,

TDS=1200

11/24/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/19/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47991	100	53.7181	53.7181	0	1	0		
LCS-47991	100	63.5018	63.6033	1015	1	1015		
N013866-016D	100	55.7352	55.8086	734	1	734	1017	0.722
N013866-016D DUP	100	54.3529	54.4274	745	1	745	1017	0.733
N013866-018D	20	31.4204	31.4982	778	5	3890	6230	0.624
N013866-022D	10	30.7056	30.7634	578	10	5780	10620	0.544
N013866-024D	10	30.4956	30.5758	802	10	8020	13620	0.589
N013866-026C	30	30.1442	30.223	788	3.33333	2626.66404	4560	0.576
N013866-027C	30	30.6655	30.754	885	3.33333	2949.99705	4910	0.601
N013884-001D	75	60.8297	60.9172	875	1.33333	1167	2000	0.583
N013884-003C	10	30.5904	30.6557	653	10	6530	13100	0.498
N013884-006C	20	30.8604	30.881	206	5	1030	1914	0.538

11/24/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/19/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-47993	100	53.8186	53.8188	2	1	2		
LCS-47993	100	63.7889	63.891	1021	1	1021		
N013884-010C	10	30.8373	30.9211	838	10	8380	13940	0.601
N013884-010C DUP	10	31.0237	31.1063	826	10	8260	13940	0.593
N013884-011C	10	30.9883	31.0786	903	10	9030	17850	0.506
N013884-012C	30	30.7145	30.8062	917	3.33333	3057	5480	0.558
N013884-013C	10	30.11	30.1743	643	10	6430	10870	0.592
N013884-016C	20	31.3334	31.433	996	5	4980	8840	0.563
N013884-017C	20	30.9921	31.0531	610	5	3050	5680	0.537
N013884-019C	60	60.6281	60.6972	691	1.66667	1152	2030	0.567
N013884-020C	100	55.5605	55.6392	787	1	787	1340	0.587
N013884-023C	20	30.5967	30.6684	717	5	3585	6660	0.538
N013884-024C	20	31.2237	31.3108	871	5	4355	7400	0.589

11/24/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/20/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48018	100	55.5501	55.55	-1	1	-1		
LCS-48018	100	53.648	53.7434	954	1	954		
N013908-001C	10	57.09	57.1452	552	10	5520	10370	0.532
N013908-001C DUP	10	55.1688	55.2258	570	10	5700	10370	0.550
N013908-002C	10	61.3495	61.4482	987	10	9870	19170	0.515
N013910-001F	100	55.3718	55.3935	217	1	217	337	0.644
N013911-001F	100	63.9648	63.9878	230	1	230	323	0.712
N013884-009C	10	30.206	30.2514	454	10	4540	9280	0.489

11/24/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013884-003A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 3.7572 * 5

= 18.786

Reporting result in two significant figures,

Cr^{+6}, µg/L = 19

12/4/2014

Sample Calculation

METHOD: EPA 218.6R
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013884-004A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 2.9178 * 1

= 2.9178

Reporting result in two significant figures,

Cr^{+6}, µg/L = 2.9

12/4/2014

Sample ID: **N013884-001D @ pH 7.84**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.675mL)

= **0.02141 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (12.55) (0.02141 N) (1) * 1000

=268.69 **mg/L**

Reporting results in two significant figures,

= 270 **mg/L** as CaCO3

11/19/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02141 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (12.55mL) (0.02141 N) (1) * 1000

= 268.69 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 268.69 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 270 **mg/L**

11/19/2014

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N013884-023C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.04 * 50

= 352

Reporting result in two significant figures,

Sulfate, mg/L = 350

12/4/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013884-019B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 12.02497464 * 25 * (25/25) * 1000

= 300624.366

Reporting results in two significant figures,

Sodium, ug/L = 300000

12/4/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013884
Test Method: EPA 6010
Analysis Date: 11/25/14

Matrix: Water
Batch No.: 48010

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013884-003B-DT ~~100X~~ 500x	Sodium	ug/L	2666009.462	PASS	2637439.418	1.08%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013884
Test Method: EPA 6010
Analysis Date: 11/26/14

Matrix: Water
Batch No.: 48010

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B and Fe. The calculated concentrations are <25RL.
Dilution test failed ~~to~~ for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013884-001B-DT 5X	Boron	ug/L	438.7558649	NA	349.8596182	25.41%	10
N013884-001B-DT 5X	Calcium	ug/L	44876.72556	PASS	41388.84104	8.43%	10
N013884-001B-DT 5X	Iron	ug/L	129.2925489	NA	123.3838136	4.79%	10
N013884-001B-DT 5X	Magnesium	ug/L	7606.34055	FAIL	6793.219683	11.97%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *02-Dec-14*

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N013884-003B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	96940
Client ID:	ZZZZZZ	Batch ID:	48010	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/25/2014	SeqNo:	1881931

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2626610.777	50000	20000	2637000	-54.1	80	120				S

Sample ID	N013884-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	96962
Client ID:	ZZZZZZ	Batch ID:	48010	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/26/2014	SeqNo:	1882910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5422.094	100	5000	349.9	101	80	120				
Calcium	53296.352	500	10000	41390	119	80	120				
Iron	238.375	20	100.0	123.4	115	80	120				
Magnesium	16973.134	100	10000	6793	102	80	120				

DT of Na @500x is within criteria

Nancy 12/4/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013884-003B,** the concentration in ug/L is calculated as follows:

Molybdenum, ug/L = 4.66959150959736 * 5 * (25/25)

= 23.3479575479868

Reporting results in two significant figures,

Molybdenum, ug/L = 23

12/4/2014

ASSET Laboratories

ICP-MS Metals in Water

Dilution Test Summary

Work Order No.: N013884
Test Method: EPA 6020
Analysis Date: 11/25/2014

Matrix: Water
Batch No.: 48011

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to all analytes except As, Ba, Mn & Mo. The calculated values are <25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013884-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N013884-001B-DT 5X	Arsenic	µg/L	4.585204771	PASS	4.496568767	1.97%	10
N013884-001B-DT 5X	Barium	µg/L	33.45264604	PASS	31.71872326	5.47%	10
N013884-001B-DT 5X	Beryllium	µg/L	0	NA	0		10
N013884-001B-DT 5X	Cadmium	µg/L	0	NA	0		10
N013884-001B-DT 5X	Cobalt	µg/L	0.223193203	NA	0.195089178	14.41%	10
N013884-001B-DT 5X	Copper	µg/L	0	NA	0		10
N013884-001B-DT 5X	Chromium	µg/L	0	NA	0.038032502	100.00%	10
N013884-001B-DT 5X	Lead	µg/L	0	NA	0		10
N013884-001B-DT 25X	Manganese	µg/L	104.483343	PASS	101.1598216	3.29%	10
N013884-001B-DT 5X	Molybdenum	µg/L	13.95407655	PASS	13.96505298	0.08%	10
N013884-001B-DT 5X	Nickel	µg/L	0.347961446	NA	0.280454871	24.07%	10
N013884-001B-DT 5X	Selenium	µg/L	0	NA	0		10
N013884-001B-DT 5X	Silver	µg/L	0	NA	0		10
N013884-001B-DT 5X	Thallium	µg/L	0	NA	0		10
N013884-001B-DT 5X	Vanadium	µg/L	1.133781284	NA	1.053129151	7.66%	10
N013884-001B-DT 5X	Zinc	µg/L	0	NA	0.529067835	100.00%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N013884-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.980	0.50	10.00	0	110	80	120				
Arsenic	14.270	0.10	10.00	4.497	97.7	80	120				
Barium	133.528	1.0	100.0	31.72	102	80	120				
Beryllium	9.917	0.50	10.00	0	99.2	80	120				
Cadmium	9.456	0.50	10.00	0	94.6	80	120				
Cobalt	9.215	0.50	10.00	0.1951	90.2	80	120				
Copper	7.318	1.0	10.00	0	73.2	80	120				S
Lead	10.903	1.0	10.00	0	109	80	120				
Molybdenum	25.281	0.50	10.00	13.97	113	80	120				
Nickel	9.284	1.0	10.00	0.2805	90.0	80	120				
Selenium	9.523	0.50	10.00	0	95.2	80	120				
Silver	7.201	0.50	10.00	0	72.0	80	120				S
Thallium	10.909	0.50	10.00	0	109	80	120				
Vanadium	11.688	1.0	10.00	1.053	106	80	120				
Zinc	84.286	10	100.0	0.5291	83.8	80	120				

Sample ID: **N013884-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **96956**
Client ID: **ZZZZZZ** Batch ID: **48011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/25/2014** SeqNo: **1882840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	198.679	2.5	100.0	101.2	97.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013884
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N013884-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**96956**	
Client ID:	**ZZZZZZ**	Batch ID:	**48011**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**11/25/2014**		SeqNo:	**1882753**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.03803	95.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Sample Calculation

Work Order No.:	**N013884**
Test Method:	**EPA 7470**
Matrix:	**Aqueous**

FORMULA:

Calculate the Mercury concentration in ug/L in the original sample as follows:

Hg = [A] [DF]

where:

A = ug/L, instrument calculated concentration
DF = dilution factor

For: **N013884-013B**

The concentration in ug/L is calculated as follows:

Hg = [A] [DF]

Hg = [-0.05240] [1]

Hg = **-0.05240** ug/L

Since result is less than reporting limit.

Hg = ND ug/L

December 08, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013908

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 18, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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ASSET Laboratories **Date:** *08-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013908

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen and Deuterium were subcontracted to Zymax- Escondido,CA.

Analytical Comments for EPA 300.0:

Dilution was necessary for sample N013908-001 due to precipitation of sample upon the addition of eluent.

Dilution was necessary for sample N013908-002 due to high Chloride concentration.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary for samples N013908-001, N013908-002 and N013908-005 due to failed Internal Standard when samples were analyzed at no dilution.

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Date: *08-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013908
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013908-001A	MW-35-135-200	Water	11/13/2014 2:39:00 PM	11/18/2014	12/8/2014
N013908-001B	MW-35-135-200	Water	11/13/2014 2:39:00 PM	11/18/2014	12/8/2014
N013908-001C	MW-35-135-200	Water	11/13/2014 2:39:00 PM	11/18/2014	12/8/2014
N013908-001D	MW-35-135-200	Water	11/13/2014 2:39:00 PM	11/18/2014	12/8/2014
N013908-001E	MW-35-135-200	Water	11/13/2014 2:39:00 PM	11/18/2014	12/8/2014
N013908-002A	MW-46-175-200	Water	11/13/2014 2:22:00 PM	11/18/2014	12/8/2014
N013908-002B	MW-46-175-200	Water	11/13/2014 2:22:00 PM	11/18/2014	12/8/2014
N013908-002C	MW-46-175-200	Water	11/13/2014 2:22:00 PM	11/18/2014	12/8/2014
N013908-002D	MW-46-175-200	Water	11/13/2014 2:22:00 PM	11/18/2014	12/8/2014
N013908-002E	MW-46-175-200	Water	11/13/2014 2:22:00 PM	11/18/2014	12/8/2014
N013908-003A	MW-211-200	Water	11/17/2014 7:35:00 AM	11/18/2014	12/8/2014
N013908-004A	MW-212-200	Water	11/17/2014 7:48:00 AM	11/18/2014	12/8/2014
N013908-005A	MW-72BR-200-200	Water	11/17/2014 1:42:00 PM	11/18/2014	12/8/2014
N013908-005B	MW-72BR-200-200	Water	11/17/2014 1:42:00 PM	11/18/2014	12/8/2014
N013908-005C	MW-72BR-200-200	Water	11/17/2014 1:42:00 PM	11/18/2014	12/8/2014
N013908-005D	MW-72BR-200-200	Water	11/17/2014 1:42:00 PM	11/18/2014	12/8/2014
N013908-006A	MW-213-200	Water	11/18/2014 6:05:00 AM	11/18/2014	12/8/2014

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ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141119A**	QC Batch: **R96838**			PrepDate			Analyst: **AC**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	11/19/2014

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141119A**	QC Batch: **R96838**			PrepDate			Analyst: **AC**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	11/19/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-200
Lab Order:	N013908	**Collection Date:**	11/17/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141119A**	QC Batch: **R96838**				PrepDate		Analyst: **AC**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	11/19/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N013910-001F DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96838**
Client ID: **ZZZZZZ** Batch ID: **R96838** TestNo: **EPA 120.1** Analysis Date: **11/19/2014** SeqNo: **1885570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	331.000	0.10						337.0	1.80	10	

Sample ID **N013906-005A DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96838**
Client ID: **ZZZZZZ** Batch ID: **R96838** TestNo: **EPA 120.1** Analysis Date: **11/19/2014** SeqNo: **1885571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8660.000	0.10						8680	0.231	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141119D**	QC Batch: **48018**				PrepDate	**11/19/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	5500	100	100		mg/L	1	11/19/2014 07:53 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141119D**	QC Batch: **48018**				PrepDate	**11/19/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	9900	100	100		mg/L	1	11/19/2014 07:53 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *08-Dec-14*

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-48018	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/19/2014	RunNo:	96869
Client ID:	PBW	Batch ID:	48018	TestNo:	SM2540C			Analysis Date:	11/19/2014	SeqNo:	1878530

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-48018	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/19/2014	RunNo:	96869
Client ID:	LCSW	Batch ID:	48018	TestNo:	SM2540C			Analysis Date:	11/19/2014	SeqNo:	1878531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	954.000	10	1000	0	95.4	80	120				

Sample ID	N013908-001CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	11/19/2014	RunNo:	96869
Client ID:	ZZZZZZ	Batch ID:	48018	TestNo:	SM2540C			Analysis Date:	11/19/2014	SeqNo:	1878534

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	5700.000	100						5520	3.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141120A** QC Batch: **R96914** PrepDate							Analyst: **RB**
Hexavalent Chromium	30	0.080	1.0		µg/L	5	11/20/2014 03:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141124A** QC Batch: **48057** PrepDate **11/24/2014**							Analyst: **CEI**
Chromium	28	0.030	1.0		µg/L	1	11/24/2014 02:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141120A** QC Batch: **R96914** PrepDate							Analyst: **RB**
Hexavalent Chromium	23	0.080	1.0		µg/L	5	11/20/2014 03:43 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141124A** QC Batch: **48057** PrepDate **11/24/2014**							Analyst: **CEI**
Chromium	25	0.15	5.0		µg/L	5	11/24/2014 02:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-211-200
Lab Order:	N013908	**Collection Date:**	11/17/2014 7:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141120A**	QC Batch: **R96914**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/20/2014 01:24 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-212-200
Lab Order:	N013908	**Collection Date:**	11/17/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141120A**	QC Batch: **R96914**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/20/2014 01:44 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-200
Lab Order:	N013908	**Collection Date:**	11/17/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141120A** QC Batch: **R96914** PrepDate							Analyst: **RB**
Hexavalent Chromium	5.8	0.080	1.0		µg/L	5	11/20/2014 04:25 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141124A** QC Batch: **48057** PrepDate **11/24/2014**							Analyst: **CEI**
Chromium	6.0	0.15	5.0		µg/L	5	11/24/2014 02:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-213-200
Lab Order:	N013908	**Collection Date:**	11/18/2014 6:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141120A**	QC Batch: **R96914**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/20/2014 02:44 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R96914** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **PBW** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96914** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **LCSW** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.987	0.20	5.000	0	99.7	90	110				

Sample ID **N013908-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.06200	103	90	110				

Sample ID **N013908-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.04500	106	90	110				

Sample ID **N013908-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0.02940	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N013908-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.324	1.0						30.40	0.239	20	

Sample ID **N013908-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	54.414	1.0	25.00	30.40	96.1	90	110				

Sample ID **N013908-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	54.919	1.0	25.00	30.40	98.1	90	110	54.41	0.924	20	

Sample ID **N013908-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.631	1.0	25.00	23.48	96.6	90	110				

Sample ID **N013908-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **96914**
Client ID: **ZZZZZZ** Batch ID: **R96914** TestNo: **EPA 218.6** Analysis Date: **11/20/2014** SeqNo: **1880945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.374	1.0	25.00	5.751	98.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48057	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/24/2014	RunNo:	96923
Client ID:	PBW	Batch ID:	48057	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/24/2014	SeqNo:	1881393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48057	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/24/2014	RunNo:	96923
Client ID:	LCSW	Batch ID:	48057	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/24/2014	SeqNo:	1881394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.065	1.0	10.00	0	101	85	115				

Sample ID	N013941-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/24/2014	RunNo:	96923
Client ID:	ZZZZZZ	Batch ID:	48057	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/24/2014	SeqNo:	1881398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.495	1.0	10.00	1.633	98.6	75	125				

Sample ID	N013941-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/24/2014	RunNo:	96923
Client ID:	ZZZZZZ	Batch ID:	48057	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/24/2014	SeqNo:	1881399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.506	1.0	10.00	1.633	98.7	75	125	11.50	0.0931	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141120B**	QC Batch: **R96864**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	47	1.2	5.0		mg/L	1	11/20/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/20/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/20/2014
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013908
Project: PG&E Topock
Lab ID: N013908-002

Client Sample ID: MW-46-175-200
Collection Date: 11/13/2014 2:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141120B**	QC Batch: **R96864**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	39	1.2	5.0		mg/L	1	11/20/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/20/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/20/2014
Alkalinity, Total (As CaCO3)	39	1.2	5.0		mg/L	1	11/20/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96864** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96864**
Client ID: **LCSW** Batch ID: **R96864** TestNo: **SM 2320 B** Analysis Date: **11/20/2014** SeqNo: **1878477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.060	5.0	100.0	0	98.1	85	115				
Alkalinity, Total (As CaCO3)	100.216	5.0	100.0	0	100	85	115				

Sample ID **MB-R96864** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96864**
Client ID: **PBW** Batch ID: **R96864** TestNo: **SM 2320 B** Analysis Date: **11/20/2014** SeqNo: **1878478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013908-001C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96864**
Client ID: **ZZZZZZ** Batch ID: **R96864** TestNo: **SM 2320 B** Analysis Date: **11/20/2014** SeqNo: **1878480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	47.414	5.0						47.41	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	47.414	5.0						47.41	0	30	

Sample ID **N013908-001C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96864**
Client ID: **ZZZZZZ** Batch ID: **R96864** TestNo: **SM 2320 B** Analysis Date: **11/20/2014** SeqNo: **1878481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	145.474	5.0	100.0	47.41	98.1	75	125				
Alkalinity, Total (As CaCO3)	145.474	5.0	100.0	47.41	98.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013908-001C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96864**
Client ID: **ZZZZZZ** Batch ID: **R96864** TestNo: **SM 2320 B** Analysis Date: **11/20/2014** SeqNo: **1878482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	145.474	5.0	100.0	47.41	98.1	75	125	145.5	0	20	
Alkalinity, Total (As CaCO3)	145.474	5.0	100.0	47.41	98.1	75	125	145.5	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013908
Project: PG&E Topock
Lab ID: N013908-001

Client Sample ID: MW-35-135-200
Collection Date: 11/13/2014 2:39:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	11/21/2014 12:28 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Chloride	3000	12	250		mg/L	500	11/21/2014 05:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Sulfate	660	3.3	50		mg/L	100	11/21/2014 01:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013908
Project: PG&E Topock
Lab ID: N013908-002

Client Sample ID: MW-46-175-200
Collection Date: 11/13/2014 2:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	11/21/2014 02:22 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Chloride	5700	25	500		mg/L	1000	11/21/2014 06:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Sulfate	780	3.3	50		mg/L	100	11/21/2014 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96920_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **PBW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96920_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **LCSW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.555	0.50	2.500	0	102	90	110				

Sample ID **N013908-001C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.214	1.0						0.1360	0	20	

Sample ID **N013908-001C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.760	1.0	5.000	0.1360	92.5	80	120				

Sample ID **N013908-001C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.864	1.0	5.000	0.1360	94.6	80	120	4.760	2.16	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R96920_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	PBW	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R96920_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	LCSW	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.526	0.50	2.500	0	101	90	110				

Sample ID	N013934-012D-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	ZZZZZZ	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881119

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	85.500	10						85.38	0.140	20	

Sample ID	N013934-012D-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	ZZZZZZ	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	135.860	10	50.00	85.38	101	80	120				

Sample ID	N013934-012D-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	ZZZZZZ	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881121

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	136.920	10	50.00	85.38	103	80	120	135.9	0.777	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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P: 702.307.2659 F: 702.307.2691
"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R96920_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **PBW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R96920_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **LCSW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.039	0.50	5.000	0	101	90	110				

Sample ID **N013934-012D-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	229.660	10						226.4	1.43	20	

Sample ID **N013934-012D-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	327.940	10	100.0	226.4	102	80	120				

Sample ID **N013934-012D-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	330.740	10	100.0	226.4	104	80	120	327.9	0.850	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141126D**	QC Batch: **R96966**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	2.8	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	1.1	0.044	0.10		mg/L	2	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-200
Lab Order:	N013908	**Collection Date:**	11/17/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125F** QC Batch: **R96948** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.15	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R96948** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **PBW** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R96948** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **LCSW** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.035	0.050	1.000	0	103	85	115				

Sample ID **N013908-005DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.139	0.050						0.1454	4.50	20	

Sample ID **N013908-005DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.199	0.050	1.000	0.1454	105	85	115				

Sample ID **N013908-005DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.080	0.050	1.000	0.1454	93.5	85	115	1.199	10.4	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N013917-004E-DUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96948
Client ID:	ZZZZZZ	Batch ID:	R96948	TestNo:	SM4500-NO3			Analysis Date:	11/25/2014	SeqNo:	1883042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.251	0.050						0.2502	0.279	20	

Sample ID	N013917-004E-MS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96948
Client ID:	ZZZZZZ	Batch ID:	R96948	TestNo:	SM4500-NO3			Analysis Date:	11/25/2014	SeqNo:	1883075

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.380	0.050	1.000	0.2502	113	85	115				

Sample ID	N013917-004E-MSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96948
Client ID:	ZZZZZZ	Batch ID:	R96948	TestNo:	SM4500-NO3			Analysis Date:	11/25/2014	SeqNo:	1886495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.241	0.050	1.000	0.2502	99.1	85	115	1.380	10.6	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R96966	MBLK	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R96966	SM4500-NO3		11/26/2014	1882972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R96966	LCS	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R96966	SM4500-NO3		11/26/2014	1882973

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.967	0.050	1.000	0	96.7	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N013934-001EDUP	DUP	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R96966	SM4500-NO3		11/26/2014	1882977

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.292	0.050						0.2813	3.87	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N013934-001EMS	MS	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R96966	SM4500-NO3		11/26/2014	1882978

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.246	0.050	1.000	0.2813	96.5	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N013934-001EMSD	MSD	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R96966	SM4500-NO3		11/26/2014	1882979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.152	0.050	1.000	0.2813	87.1	85	115	1.246	7.86	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N013934-005EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96966
Client ID:	ZZZZZZ	Batch ID:	R96966	TestNo:	SM4500-NO3			Analysis Date:	11/26/2014	SeqNo:	1882982

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.343	0.050						0.2892	16.9	20	

Sample ID	N013934-005EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96966
Client ID:	ZZZZZZ	Batch ID:	R96966	TestNo:	SM4500-NO3			Analysis Date:	11/26/2014	SeqNo:	1882983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.260	0.050	1.000	0.2892	97.1	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141201C**	QC Batch: **48067**			PrepDate	**12/1/2014**		Analyst: **CEI**
Boron	680	19	100		ug/L	1	12/1/2014 08:32 PM
Calcium	280000	58	500		ug/L	1	12/1/2014 08:32 PM
Iron	ND	1.3	20		ug/L	1	12/1/2014 08:32 PM
Magnesium	28000	11	100		ug/L	1	12/1/2014 08:32 PM
Sodium	1800000	3800	50000		ug/L	100	12/1/2014 06:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141201C**	QC Batch: **48067**			PrepDate	**12/1/2014**		Analyst: **CEI**
Boron	1900	19	100		ug/L	1	12/1/2014 08:38 PM
Calcium	120000	58	500		ug/L	1	12/1/2014 08:38 PM
Iron	ND	1.3	20		ug/L	1	12/1/2014 08:38 PM
Magnesium	2600	11	100		ug/L	1	12/1/2014 08:38 PM
Sodium	3900000	7500	100000		ug/L	200	12/1/2014 06:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48067	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	PBW	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883415

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-48067	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	LCSW	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883416

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19568.962	500	20000	0	97.8	85	115				

Sample ID	N013934-012C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	ZZZZZZ	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883431

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	106639.442	2500	20000	88070	92.8	75	125				

Sample ID	N013934-012C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96973
Client ID:	ZZZZZZ	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	107084.549	2500	20000	88070	95.1	75	125	106600	0.417	20	

Sample ID	LCS1-48067	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/1/2014	RunNo:	96979
Client ID:	LCSW	Batch ID:	48067	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2014	SeqNo:	1883614

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4689.233	100	5000	0	93.8	85	115				
Calcium	9525.001	500	10000	0	95.3	85	115				
Iron	111.334	20	100.0	0	111	85	115				
Magnesium	9629.993	100	10000	0	96.3	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013908-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5694.528	100	5000	676.9	100	75	125				
Calcium	304553.756	500	10000	282900	216	75	125				S
Iron	151.828	20	100.0	7.431	144	75	125				S
Magnesium	37249.781	100	10000	27830	94.2	75	125				

Sample ID **N013908-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5714.678	100	5000	676.9	101	75	125	5695	0.353	20	
Calcium	306398.142	500	10000	282900	235	75	125	304600	0.604	20	S
Iron	149.091	20	100.0	7.431	142	75	125	151.8	1.82	20	S
Magnesium	37416.372	100	10000	27830	95.9	75	125	37250	0.446	20	

Sample ID **MB-48067** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **PBW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	7.437	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:39:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141124A**	QC Batch: **48057**			PrepDate	**11/24/2014**		Analyst: **CEI**
Arsenic	0.84	0.027	0.10		µg/L	1	11/24/2014 02:13 PM
Manganese	ND	0.026	0.50		µg/L	1	11/24/2014 02:13 PM
Molybdenum	25	0.76	2.5		µg/L	5	11/24/2014 02:41 PM
Selenium	ND	0.34	2.5		µg/L	5	11/24/2014 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-200
Lab Order:	N013908	**Collection Date:**	11/13/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141124A**	QC Batch: **48057**			PrepDate	**11/24/2014**		Analyst: **CEI**
Manganese	ND	0.13	2.5		µg/L	5	11/24/2014 02:46 PM
Molybdenum	190	3.8	12		µg/L	25	11/24/2014 03:03 PM
Selenium	ND	1.7	12		µg/L	25	11/24/2014 03:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-200
Lab Order:	N013908	**Collection Date:**	11/17/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013908-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141124A**	QC Batch: **48057**			PrepDate	**11/24/2014**		Analyst: **CEI**
Arsenic	16	0.13	0.50		µg/L	5	11/24/2014 02:52 PM
Manganese	ND	0.13	2.5		µg/L	5	11/24/2014 02:52 PM
Molybdenum	78	3.8	12		µg/L	25	11/24/2014 03:08 PM
Selenium	ND	1.7	12		µg/L	25	11/24/2014 03:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *08-Dec-14*

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48057** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/24/2014** RunNo: **96923**
Client ID: **PBW** Batch ID: **48057** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48057** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/24/2014** RunNo: **96923**
Client ID: **LCSW** Batch ID: **48057** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.272	0.10	10.00	0	103	85	115				
Manganese	100.034	0.50	100.0	0	100	85	115				
Molybdenum	9.812	0.50	10.00	0	98.1	85	115				
Selenium	10.315	0.50	10.00	0	103	85	115				

Sample ID **N013941-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/24/2014** RunNo: **96923**
Client ID: **ZZZZZZ** Batch ID: **48057** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.389	0.10	10.00	0.9368	105	75	125				
Manganese	94.133	0.50	100.0	0	94.1	75	125				
Molybdenum	13.561	0.50	10.00	2.450	111	75	125				
Selenium	10.397	0.50	10.00	0.4046	99.9	75	125				

Sample ID **N013941-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/24/2014** RunNo: **96923**
Client ID: **ZZZZZZ** Batch ID: **48057** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/24/2014** SeqNo: **1881452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.346	0.10	10.00	0.9368	104	75	125	11.39	0.372	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N013941-001B-MSD**	SampType:	**MSD**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**11/24/2014**	RunNo:	**96923**	
Client ID:	**ZZZZZZ**	Batch ID:	**48057**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**11/24/2014**	SeqNo:	**1881452**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.431	0.50	100.0	0	94.4	75	125	94.13	0.316	20	
Molybdenum	13.500	0.50	10.00	2.450	111	75	125	13.56	0.444	20	
Selenium	10.275	0.50	10.00	0.4046	98.7	75	125	10.40	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/18/2014 2:52:44 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 11/18/2014
COC Number: 6

				Cr6 (E218.6) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
			Container:	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix														
MW-35-135-200	11/13/2014	14:39	Water	X	X	X	X	X	X	X	X	X	X	X	N013908-01	5	
MW-46-175-200	11/13/2014	14:22	Water	X		X	X	X	X	X	X	X	X	X	-02	5	
MW-211-200	11/17/2014	7:35	Water	X											-03	1	
MW-212-200	11/17/2014	7:48	Water	X											-04	1	
MW-72BR-200-200	11/17/2014	13:42	Water	X	X		X	X		X			X		-05	4	
MW-213-200	11/18/2014	6:05	Water	X											-06	1	
															TOTAL NUMBER OF CONTAINERS	17	

	Signatures	Date/Time
Approved by		11-18-14
Sampled by		1600
Relinquished by		
Received by		11/18/14 1600
Relinquished by		11/18/14 1808
Received by		11/18/14

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1. 9°C
Airbill No: 1 R#3
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/18/2014	Workorder:	N013908
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 11/19/14

Reviewed By: gog 11/21/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

19-Nov-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N013908-001E / MW-35-135-200	Water	11/13/2014 2:39:00 PM	8OZP	1		
N013908-002E / MW-46-175-200	Water	11/13/2014 2:22:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N13908A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7719 2486 6720

		Date/Time			Date/Time
Relinquished by:	jpg	11/19/14 @ 17:00	**Received by:**		
Relinquished by:			**Received by:**		

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N013908-001C,** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(57.1452-57.0900)*1000000}{10}$$
$$= 5520$$

Reporting result in two significant figures,

TDS=5500

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/20/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48018	100	55.5501	55.55	-1	1	-1		
LCS-48018	100	53.648	53.7434	954	1	954		
N013908-001C	10	57.09	57.1452	552	10	5520	10370	0.532
N013908-001C DUP	10	55.1688	55.2258	570	10	5700	10370	0.550
N013908-002C	10	61.3495	61.4482	987	10	9870	19170	0.515
N013910-001F	100	55.3718	55.3935	217	1	217	337	0.644
N013911-001F	100	63.9648	63.9878	230	1	230	323	0.712
N013884-009C	10	30.206	30.2514	454	10	4540	9280	0.489

12/8/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013908-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 6.0793 * 5

= 30.3965

Reporting result in two significant figures,

Cr^{+6}, µg/L = 30

Nancy 12/8/2014

Sample ID: **N013908-001CD @ pH 7.71**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.60mL)

= **0.02155 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (2.20) (0.02155 N) (1) * 1000

=47.41 **mg/L**

Reporting results in two significant figures,

= 47 **mg/L** as CaCO3

12/8/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02155 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (2.20 mL) (0.02155 N) (1) * 1000

= ~~41.47~~ 47.41 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	OH Alkalinity as $CaCO_3$	CO_3 Alkalinity as $CaCO_3$	HCO_3 Alkalinity as $CaCO_3$
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = ~~41.47~~ 47.41 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = ~~41~~ 47 **mg/L**

12/8/2014

Nancy for 12/8/2014

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N013908-002C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.748 * 1000

= 5748

Reporting result in two significant figures,

Chloride, mg/L = 5700

Nancy 12/8/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013908-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 18.0278 * 100 * (25/25) * 1000

= 1802779

Reporting results in two significant figures,

Sodium, ug/L = 1800000

Nancy 12/8/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013908
Test Method: EPA 6010
Analysis Date: 12/01/14

Matrix: Water
Batch No.: 48067

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013934-012C-DT 25X	Sodium	ug/L	84985.4492	PASS	88073.39075	3.51%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013908
Test Method: EPA 6010
Analysis Date: 12/01/14

Matrix: Water
Batch No.: 48067

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed ~~to~~ for Ca.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013908-001B-DT 5X	Boron	ug/L	725.173494	NA	676.8616025	7.14%	10
N013884-001B-DT 5X	Calcium	ug/L	246739.6535	FAIL	282947.1358	12.80%	10
N013884-001B-DT 5X	Iron	ug/L	25.39887671	NA	7.430695154	241.81%	10
N013884-001B-DT 5X	Magnesium	ug/L	27399.10918	PASS	27829.39391	1.55%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N013934-012C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **96973**
Client ID:	**ZZZZZZ**	Batch ID: **48067**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/1/2014**	SeqNo: **1883428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	108280.753	2500	20000	88070	101	80	120				

Sample ID	**N013908-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **96979**
Client ID:	**ZZZZZZ**	Batch ID: **48067**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/1/2014**	SeqNo: **1883620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5648.876	100	5000	676.9	99.4	80	120				
Calcium	305422.803	500	10000	282900	225	80	120				S
Iron	151.859	20	100.0	7.431	144	80	120				S
Magnesium	37502.383	100	10000	27830	96.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013908-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 27.6568191085275 * 1 * (25/25)

= 27.6568191085275

Reporting results in two significant figures,

Chromium, ug/L = 28

Nancy 12/8/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013908
Test Method: EPA 6020
Analysis Date: 11/24/2014

Matrix: Water
Batch No.: 48057

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to all analytes. The calculated values are <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013941-001B-DT 5X	Chromium	µg/L	1.780028244	NA	1.633453333	8.97%	10
N013941-001B-DT 5X	Arsenic	µg/L	0.881096204	NA	0.936756112	5.94%	10
N013941-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N013941-001B-DT 5X	Molybdenum	µg/L	2.524588694	NA	2.449517446	3.06%	10
N013941-001B-DT 5X	Selenium	µg/L	0.456731317	NA	0.404638398	12.87%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N013941-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**96923**
Client ID:	**ZZZZZZ**	Batch ID:	**48057**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**11/24/2014**		SeqNo:	**1881450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.461	0.10	10.00	0.9368	105	80	120				
Manganese	94.324	0.50	100.0	0	94.3	80	120				
Molybdenum	13.335	0.50	10.00	2.450	109	80	120				
Selenium	10.972	0.50	10.00	0.4046	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013908
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N013941-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**96923**	
Client ID:	**ZZZZZZ**	Batch ID:	**48057**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**11/24/2014**		SeqNo:	**1881397**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.731	1.0	10.00	1.633	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 09, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013917

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 19, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013917

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

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ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013917
Contract No: 2014-RMP-198

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013917-001A	C-BNS-D-198	Water	11/19/2014 11:10:00 AM	11/19/2014	12/9/2014
N013917-001B	C-BNS-D-198	Water	11/19/2014 11:10:00 AM	11/19/2014	12/9/2014
N013917-001C	C-BNS-D-198	Water	11/19/2014 11:10:00 AM	11/19/2014	12/9/2014
N013917-001D	C-BNS-D-198	Water	11/19/2014 11:10:00 AM	11/19/2014	12/9/2014
N013917-001E	C-BNS-D-198	Water	11/19/2014 11:10:00 AM	11/19/2014	12/9/2014
N013917-002A	C-I-3-D-198	Water	11/19/2014 9:22:00 AM	11/19/2014	12/9/2014
N013917-002B	C-I-3-D-198	Water	11/19/2014 9:22:00 AM	11/19/2014	12/9/2014
N013917-002C	C-I-3-D-198	Water	11/19/2014 9:22:00 AM	11/19/2014	12/9/2014
N013917-002D	C-I-3-D-198	Water	11/19/2014 9:22:00 AM	11/19/2014	12/9/2014
N013917-002E	C-I-3-D-198	Water	11/19/2014 9:22:00 AM	11/19/2014	12/9/2014
N013917-003A	C-I-3-S-198	Water	11/19/2014 9:44:00 AM	11/19/2014	12/9/2014
N013917-003B	C-I-3-S-198	Water	11/19/2014 9:44:00 AM	11/19/2014	12/9/2014
N013917-003C	C-I-3-S-198	Water	11/19/2014 9:44:00 AM	11/19/2014	12/9/2014
N013917-003D	C-I-3-S-198	Water	11/19/2014 9:44:00 AM	11/19/2014	12/9/2014
N013917-003E	C-I-3-S-198	Water	11/19/2014 9:44:00 AM	11/19/2014	12/9/2014
N013917-004A	C-MAR-S-198	Water	11/19/2014 12:04:00 PM	11/19/2014	12/9/2014
N013917-004B	C-MAR-S-198	Water	11/19/2014 12:04:00 PM	11/19/2014	12/9/2014
N013917-004C	C-MAR-S-198	Water	11/19/2014 12:04:00 PM	11/19/2014	12/9/2014
N013917-004D	C-MAR-S-198	Water	11/19/2014 12:04:00 PM	11/19/2014	12/9/2014
N013917-004E	C-MAR-S-198	Water	11/19/2014 12:04:00 PM	11/19/2014	12/9/2014
N013917-005A	C-MW-80-198	Water	11/19/2014 10:00:00 AM	11/19/2014	12/9/2014
N013917-006A	C-MW-81-198	Water	11/19/2014 10:20:00 AM	11/19/2014	12/9/2014
N013917-007A	C-R22A-D-198	Water	11/19/2014 10:38:00 AM	11/19/2014	12/9/2014
N013917-007B	C-R22A-D-198	Water	11/19/2014 10:38:00 AM	11/19/2014	12/9/2014
N013917-007C	C-R22A-D-198	Water	11/19/2014 10:38:00 AM	11/19/2014	12/9/2014
N013917-007D	C-R22A-D-198	Water	11/19/2014 10:38:00 AM	11/19/2014	12/9/2014
N013917-007E	C-R22A-D-198	Water	11/19/2014 10:38:00 AM	11/19/2014	12/9/2014
N013917-008A	C-R22A-S-198	Water	11/19/2014 10:52:00 AM	11/19/2014	12/9/2014
N013917-008B	C-R22A-S-198	Water	11/19/2014 10:52:00 AM	11/19/2014	12/9/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013917
Contract No: 2014-RMP-198

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013917-008C	C-R22A-S-198	Water	11/19/2014 10:52:00 AM	11/19/2014	12/9/2014
N013917-008D	C-R22A-S-198	Water	11/19/2014 10:52:00 AM	11/19/2014	12/9/2014
N013917-008E	C-R22A-S-198	Water	11/19/2014 10:52:00 AM	11/19/2014	12/9/2014
N013917-009A	C-R27-D-198	Water	11/19/2014 11:36:00 AM	11/19/2014	12/9/2014
N013917-009B	C-R27-D-198	Water	11/19/2014 11:36:00 AM	11/19/2014	12/9/2014
N013917-009C	C-R27-D-198	Water	11/19/2014 11:36:00 AM	11/19/2014	12/9/2014
N013917-009D	C-R27-D-198	Water	11/19/2014 11:36:00 AM	11/19/2014	12/9/2014
N013917-009E	C-R27-D-198	Water	11/19/2014 11:36:00 AM	11/19/2014	12/9/2014
N013917-010A	C-R27-S-198	Water	11/19/2014 11:48:00 AM	11/19/2014	12/9/2014
N013917-010B	C-R27-S-198	Water	11/19/2014 11:48:00 AM	11/19/2014	12/9/2014
N013917-010C	C-R27-S-198	Water	11/19/2014 11:48:00 AM	11/19/2014	12/9/2014
N013917-010D	C-R27-S-198	Water	11/19/2014 11:48:00 AM	11/19/2014	12/9/2014
N013917-010E	C-R27-S-198	Water	11/19/2014 11:48:00 AM	11/19/2014	12/9/2014
N013917-011A	C-TAZ-D-198	Water	11/19/2014 8:36:00 AM	11/19/2014	12/9/2014
N013917-011B	C-TAZ-D-198	Water	11/19/2014 8:36:00 AM	11/19/2014	12/9/2014
N013917-011C	C-TAZ-D-198	Water	11/19/2014 8:36:00 AM	11/19/2014	12/9/2014
N013917-011D	C-TAZ-D-198	Water	11/19/2014 8:36:00 AM	11/19/2014	12/9/2014
N013917-011E	C-TAZ-D-198	Water	11/19/2014 8:36:00 AM	11/19/2014	12/9/2014
N013917-012A	C-TAZ-S-198	Water	11/19/2014 8:56:00 AM	11/19/2014	12/9/2014
N013917-012B	C-TAZ-S-198	Water	11/19/2014 8:56:00 AM	11/19/2014	12/9/2014
N013917-012C	C-TAZ-S-198	Water	11/19/2014 8:56:00 AM	11/19/2014	12/9/2014
N013917-012D	C-TAZ-S-198	Water	11/19/2014 8:56:00 AM	11/19/2014	12/9/2014
N013917-012E	C-TAZ-S-198	Water	11/19/2014 8:56:00 AM	11/19/2014	12/9/2014
N013917-013A	R63-198	Water	11/19/2014 10:08:00 AM	11/19/2014	12/9/2014
N013917-013B	R63-198	Water	11/19/2014 10:08:00 AM	11/19/2014	12/9/2014
N013917-013C	R63-198	Water	11/19/2014 10:08:00 AM	11/19/2014	12/9/2014
N013917-013D	R63-198	Water	11/19/2014 10:08:00 AM	11/19/2014	12/9/2014
N013917-013E	R63-198	Water	11/19/2014 10:08:00 AM	11/19/2014	12/9/2014
N013917-014A	RMP-AB1-198	Water	11/19/2014 12:30:00 PM	11/19/2014	12/9/2014

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ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141120D**	QC Batch: **R96868**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/20/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N013917-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96868**
Client ID: **ZZZZZZ** Batch ID: **R96868** TestNo: **EPA 120.1** Analysis Date: **11/20/2014** SeqNo: **1878509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	979.000	0.10						974.0	0.512	10	

Sample ID **N013917-012D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96868**
Client ID: **ZZZZZZ** Batch ID: **R96868** TestNo: **EPA 120.1** Analysis Date: **11/20/2014** SeqNo: **1878523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	977.000	0.10						972.0	0.513	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013917
Project: PG&E Topock
Lab ID: N013917-002

Client Sample ID: C-I-3-D-198
Collection Date: 11/19/2014 9:22:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C** QC Batch: **R96867**				PrepDate			Analyst: **AC**
pH	8.3	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.0	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.3	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.3	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141120C**	QC Batch: **R96867**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	pH Units	1	11/20/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N013917-001D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **96867**
Client ID: **ZZZZZZ** Batch ID: **R96867** TestNo: **SM4500-H+B** Analysis Date: **11/20/2014** SeqNo: **1878496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.250	0.10						8.200	0.608	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N013917-013D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **96867**
Client ID: **ZZZZZZ** Batch ID: **R96867** TestNo: **SM4500-H+B** Analysis Date: **11/20/2014** SeqNo: **1878507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.250	0.10						8.250	0	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120F**	QC Batch: **48034**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120F**	QC Batch: **48034**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120F**	QC Batch: **48034**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **WETCHEM_141120F** QC Batch: **48034** PrepDate **11/20/2014** Analyst: **AC**							
Suspended Solids (Residue, Non-Filterable)	46	20	20		mg/L	1	11/20/2014 08:06 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120F**	QC Batch: **48034**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120F**	QC Batch: **48034**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:06 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120G**	QC Batch: **48038**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:31 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120G**	QC Batch: **48038**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:31 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120G**	QC Batch: **48038**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:31 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120G**	QC Batch: **48038**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:31 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141120G**	QC Batch: **48038**				PrepDate	**11/20/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/20/2014 08:31 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48034	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/20/2014	RunNo:	96871
Client ID:	PBW	Batch ID:	48034	TestNo:	SM2540D			Analysis Date:	11/20/2014	SeqNo:	1878544

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48034	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/20/2014	RunNo:	96871
Client ID:	LCSW	Batch ID:	48034	TestNo:	SM2540D			Analysis Date:	11/20/2014	SeqNo:	1878545

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	1008.000	10	1000	0	101	80	120				

Sample ID	N013917-001D DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/20/2014	RunNo:	96871
Client ID:	ZZZZZZ	Batch ID:	48034	TestNo:	SM2540D			Analysis Date:	11/20/2014	SeqNo:	1878547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48038	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/20/2014	RunNo:	96872
Client ID:	PBW	Batch ID:	48038	TestNo:	SM2540D			Analysis Date:	11/20/2014	SeqNo:	1879454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48038	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/20/2014	RunNo:	96872
Client ID:	LCSW	Batch ID:	48038	TestNo:	SM2540D			Analysis Date:	11/20/2014	SeqNo:	1879455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	975.000	10	1000	0	97.5	80	120				

Sample ID	N013917-009D DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/20/2014	RunNo:	96872
Client ID:	ZZZZZZ	Batch ID:	48038	TestNo:	SM2540D			Analysis Date:	11/20/2014	SeqNo:	1879457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 01:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 02:27 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 02:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 03:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-80-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141121A**	QC Batch: **R96908**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 03:27 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-81-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141121A**	QC Batch: **R96908**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 04:11 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 04:33 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 04:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 05:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 02:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 05:33 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 07:02 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 07:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 02:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141121A** QC Batch: **R96908** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 07:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141126A** QC Batch: **48061** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	11/26/2014 03:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB1-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141121A**	QC Batch: **R96908**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/21/2014 08:02 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96908** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **PBW** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96908** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **LCSW** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.878	0.20	5.000	0	97.6	90	110				

Sample ID **N013940-001A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.589	0.20						1.610	1.35	20	

Sample ID **N013940-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.622	0.20	1.000	1.610	101	90	110				

Sample ID **N013940-001A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.588	0.20	1.000	1.610	97.7	90	110	2.622	1.30	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013917-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0.06500	102	90	110				

Sample ID **N013917-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0.05180	103	90	110				

Sample ID **N013917-003A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0.06690	97.7	90	110				

Sample ID **N013917-004A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.104	0.20	1.000	0.09580	101	90	110				

Sample ID **N013917-007A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0.06410	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013917-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.067	0.20	1.000	0.06880	99.8	90	110				

Sample ID **N013917-009A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0.06560	99.5	90	110				

Sample ID **N013917-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0.06860	102	90	110				

Sample ID **N013917-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.05200	103	90	110				

Sample ID **N013917-012A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1881326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.05840	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID	**N013917-013A-MS**	SampType:	**MS**	TestCode:	**218.6R_WPG**	Units:	**µg/L**	Prep Date:			RunNo:	**96908**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96908**	TestNo:	**EPA 218.6**			Analysis Date:	**11/21/2014**		SeqNo:	**1881328**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.07350	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **MB-R96908** SampType: **MBLK** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **PBW** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96908** SampType: **LCS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **LCSW** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.878	0.20	5.000	0	97.6	90	110				

Sample ID **N013940-001A-DUP** SampType: **DUP** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.589	0.20						1.610	1.35	20	

Sample ID **N013940-001A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.622	0.20	1.000	1.610	101	90	110				

Sample ID **N013940-001A-MSD** SampType: **MSD** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.588	0.20	1.000	1.610	97.7	90	110	2.622	1.30	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **N013917-005A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.128	0.20	1.000	0.07160	106	90	110				

Sample ID **N013917-006A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0.08980	96.8	90	110				

Sample ID **N013917-014A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96908**
Client ID: **ZZZZZZ** Batch ID: **R96908** TestNo: **EPA 218.6** Analysis Date: **11/21/2014** SeqNo: **1880652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.103	0.20	1.000	0.04770	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-48061** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **PBW** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-48061** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **LCSW** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.926	1.0	10.00	0	99.3	85	115				

Sample ID **N013917-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.143	1.0	10.00	0.09007	101	75	125				

Sample ID **N013917-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.070	1.0	10.00	0.09007	99.8	75	125	10.14	0.721	20	

Sample ID **N013917-013C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.994	1.0	10.00	0.07360	99.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125F** QC Batch: **R96948** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.25	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.31	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125F** QC Batch: **R96948** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125F** QC Batch: **R96948** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.29	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141125F**	QC Batch: **R96948**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.28	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141126D**	QC Batch: **R96966**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141125F** QC Batch: **R96948** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	11/25/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R96948** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **PBW** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R96948** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **LCSW** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.035	0.050	1.000	0	103	85	115				

Sample ID **N013908-005DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.139	0.050						0.1454	4.50	20	

Sample ID **N013908-005DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.199	0.050	1.000	0.1454	105	85	115				

Sample ID **N013908-005DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1882140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.080	0.050	1.000	0.1454	93.5	85	115	1.199	10.4	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N013917-004E-DUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1883042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.251	0.050						0.2502	0.279	20	

Sample ID **N013917-004E-MS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1883075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.380	0.050	1.000	0.2502	113	85	115				

Sample ID **N013917-004E-MSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96948**
Client ID: **ZZZZZZ** Batch ID: **R96948** TestNo: **SM4500-NO3** Analysis Date: **11/25/2014** SeqNo: **1886495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.241	0.050	1.000	0.2502	99.1	85	115	1.380	10.6	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R96966	MBLK	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R96966	SM4500-NO3		11/26/2014	1882972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R96966	LCS	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R96966	SM4500-NO3		11/26/2014	1882973

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.967	0.050	1.000	0	96.7	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N013934-001EDUP	DUP	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R96966	SM4500-NO3		11/26/2014	1882977

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.292	0.050						0.2813	3.87	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N013934-001EMS	MS	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R96966	SM4500-NO3		11/26/2014	1882978

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.246	0.050	1.000	0.2813	96.5	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N013934-001EMSD	MSD	4500N03F_W	mg/L		96966
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R96966	SM4500-NO3		11/26/2014	1882979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.152	0.050	1.000	0.2813	87.1	85	115	1.246	7.86	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N013934-005EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96966
Client ID:	ZZZZZZ	Batch ID:	R96966	TestNo:	SM4500-NO3			Analysis Date:	11/26/2014	SeqNo:	1882982

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.343	0.050						0.2892	16.9	20	

Sample ID	N013934-005EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	96966
Client ID:	ZZZZZZ	Batch ID:	R96966	TestNo:	SM4500-NO3			Analysis Date:	11/26/2014	SeqNo:	1882983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.260	0.050	1.000	0.2892	97.1	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013917
Project: PG&E Topock
Lab ID: N013917-001

Client Sample ID: C-BNS-D-198
Collection Date: 11/19/2014 11:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 01:51 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.028	0.0013	0.020		mg/L	1	12/3/2014 11:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:18 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.029	0.0013	0.020		mg/L	1	12/3/2014 11:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**			PrepDate		**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:23 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**			PrepDate		**12/2/2014**	Analyst: **CEI**
Iron	ND	0.0013	0.020		mg/L	1	12/3/2014 12:13 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:28 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	1.9	0.0013	0.020		mg/L	1	12/3/2014 12:18 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013917
Project: PG&E Topock
Lab ID: N013917-007

Client Sample ID: C-R22A-D-198
Collection Date: 11/19/2014 10:38:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:33 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.049	0.0013	0.020		mg/L	1	12/3/2014 12:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:49 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.052	0.0013	0.020		mg/L	1	12/3/2014 12:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:54 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.047	0.0013	0.020		mg/L	1	12/3/2014 12:43 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 02:59 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.040	0.0013	0.020		mg/L	1	12/3/2014 12:48 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013917
Project: PG&E Topock
Lab ID: N013917-011

Client Sample ID: C-TAZ-D-198
Collection Date: 11/19/2014 8:36:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 03:04 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.030	0.0013	0.020		mg/L	1	12/3/2014 12:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 03:08 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.031	0.0013	0.020		mg/L	1	12/3/2014 12:58 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48099**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 03:25 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48086**				PrepDate	**12/2/2014**	Analyst: **CEI**
Iron	0.075	0.0013	0.020		mg/L	1	12/3/2014 01:03 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48099** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/3/2014** RunNo: **97008**
Client ID: **PBW** Batch ID: **48099** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-48099** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/3/2014** RunNo: **97008**
Client ID: **LCSW** Batch ID: **48099** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.157	20	100.0	0	98.2	85	115				

Sample ID **N013917-001C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/3/2014** RunNo: **97008**
Client ID: **ZZZZZZ** Batch ID: **48099** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	91.598	20	100.0	0	91.6	75	125				

Sample ID **N013917-001C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/3/2014** RunNo: **97008**
Client ID: **ZZZZZZ** Batch ID: **48099** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	91.720	20	100.0	0	91.7	75	125	91.60	0.133	20	

Sample ID **N013917-013C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/3/2014** RunNo: **97008**
Client ID: **ZZZZZZ** Batch ID: **48099** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	93.456	20	100.0	0	93.5	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010W_HINK

Sample ID **MB-48086** SampType: **MBLK** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **12/2/2014** RunNo: **97007**
Client ID: **PBW** Batch ID: **48086** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.009	0.020									

Sample ID **LCS-48086** SampType: **LCS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **12/2/2014** RunNo: **97007**
Client ID: **LCSW** Batch ID: **48086** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.112	0.020	0.1000	0	112	85	115				

Sample ID **N013917-001B-MS** SampType: **MS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **12/2/2014** RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48086** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.123	0.020	0.1000	0.02823	94.8	75	125				

Sample ID **N013917-001B-MSD** SampType: **MSD** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **12/2/2014** RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48086** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.120	0.020	0.1000	0.02823	91.4	75	125	0.1230	2.75	20	

Sample ID **N013917-013B-MS** SampType: **MS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **12/2/2014** RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48086** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.183	0.020	0.1000	0.07466	108	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 12:55 PM
Barium	130	0.15	5.0		µg/L	5	11/26/2014 01:01 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 12:55 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	11/26/2014 12:55 PM
Selenium	1.5	0.069	0.50		µg/L	1	11/26/2014 12:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	11/26/2014 01:06 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 01:06 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 01:06 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	11/26/2014 01:06 PM
Selenium	1.3	0.069	0.50		µg/L	1	11/26/2014 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 9:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 01:17 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 01:17 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 01:17 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	11/26/2014 01:17 PM
Selenium	1.5	0.069	0.50		µg/L	1	11/26/2014 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 12:04:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	11/26/2014 01:29 PM
Barium	130	0.030	1.0		µg/L	1	11/26/2014 01:29 PM
Manganese	61	0.026	0.50		µg/L	1	11/26/2014 01:29 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	11/26/2014 01:29 PM
Selenium	1.2	0.069	0.50		µg/L	1	11/26/2014 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 01:51 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 01:51 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 01:51 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	11/26/2014 01:51 PM
Selenium	1.3	0.069	0.50		µg/L	1	11/26/2014 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 02:02 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 02:02 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 02:02 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	11/26/2014 02:02 PM
Selenium	1.4	0.069	0.50		µg/L	1	11/26/2014 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 02:13 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 02:13 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 02:13 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	11/26/2014 02:13 PM
Selenium	1.4	0.069	0.50		µg/L	1	11/26/2014 02:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 11:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 02:24 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 02:24 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 02:24 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	11/26/2014 02:24 PM
Selenium	1.5	0.069	0.50		µg/L	1	11/26/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 02:35 PM
Barium	110	0.030	1.0		µg/L	1	11/26/2014 02:35 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 02:35 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	11/26/2014 02:35 PM
Selenium	1.4	0.069	0.50		µg/L	1	11/26/2014 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 8:56:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	11/26/2014 02:57 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 02:57 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 02:57 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	11/26/2014 02:57 PM
Selenium	1.3	0.069	0.50		µg/L	1	11/26/2014 02:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-198
Lab Order:	N013917	**Collection Date:**	11/19/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013917-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141126A**	QC Batch: **48061**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	11/26/2014 03:08 PM
Barium	120	0.030	1.0		µg/L	1	11/26/2014 03:08 PM
Manganese	ND	0.026	0.50		µg/L	1	11/26/2014 03:08 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	11/26/2014 03:08 PM
Selenium	1.4	0.069	0.50		µg/L	1	11/26/2014 03:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48061** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **PBW** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48061** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **LCSW** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.190	0.10	10.00	0	102	85	115				
Barium	104.598	1.0	100.0	0	105	85	115				
Chromium	9.926	1.0	10.00	0	99.3	85	115				
Manganese	97.470	0.50	100.0	0	97.5	85	115				
Molybdenum	10.183	0.50	10.00	0	102	85	115				
Selenium	9.735	0.50	10.00	0	97.3	85	115				

Sample ID **N013917-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.023	0.10	10.00	2.532	105	75	125				
Chromium	10.143	1.0	10.00	0.09007	101	75	125				
Manganese	95.366	0.50	100.0	0	95.4	75	125				
Molybdenum	16.223	0.50	10.00	4.567	117	75	125				
Selenium	11.352	0.50	10.00	1.454	99.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N013917-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	251.548	5.0	100.0	130.2	121	75	125				

Sample ID **N013917-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.970	0.10	10.00	2.532	104	75	125	13.02	0.403	20	
Chromium	10.070	1.0	10.00	0.09007	99.8	75	125	10.14	0.721	20	
Manganese	95.086	0.50	100.0	0	95.1	75	125	95.37	0.294	20	
Molybdenum	16.294	0.50	10.00	4.567	117	75	125	16.22	0.437	20	
Selenium	11.265	0.50	10.00	1.454	98.1	75	125	11.35	0.771	20	

Sample ID **N013917-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	252.400	5.0	100.0	130.2	122	75	125	251.5	0.338	20	

Sample ID **N013917-013C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96970**
Client ID: **ZZZZZZ** Batch ID: **48061** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/26/2014** SeqNo: **1883328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.644	0.10	10.00	2.570	101	75	125				
Chromium	9.994	1.0	10.00	0.07360	99.2	75	125				
Manganese	96.331	0.50	100.0	0	96.3	75	125				
Molybdenum	16.054	0.50	10.00	4.580	115	75	125				
Selenium	10.888	0.50	10.00	1.400	94.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N013917-013C-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**		Prep Date:	**11/25/2014**		RunNo:	**96970**	
Client ID:	**ZZZZZZ**	Batch ID:	**48061**	TestNo:	**EPA 6020**		**EPA 3010A**		Analysis Date:	**11/26/2014**		SeqNo:	**1883329**	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual	
Barium		244.987	5.0	100.0	130.4	115	75	125						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/19/2014 3:07:38 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-RMP-198
Turnaround Time 10 Days
Shipping Date: 11/19/2014
COC Number: 3

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	125 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C		
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	7	7	7	28		
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Metals (6020A) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
C-BNS-D-198	11/19/2014	11:10	Water	X		X	X	X	X	X	X	X	N013917 -01	10	
C-I-3-D-198	11/19/2014	9:22	Water	X		X	X	X	X	X	X	X	-02	10	
C-I-3-S-198	11/19/2014	9:44	Water	X		X	X	X	X	X	X	X	-03	10	
C-MAR-S-198	11/19/2014	12:04	Water	X		X	X	X	X	X	X	X	-04	10	
C-MW-80-198	11/19/2014	10:00	Water		X								-05	1	
C-MW-81-198	11/19/2014	10:20	Water		X								-06	1	
C-R22A-D-198	11/19/2014	10:38	Water	X		X	X	X	X	X	X	X	-07	10	
C-R22A-S-198	11/19/2014	10:52	Water	X		X	X	X	X	X	X	X	-08	10	
C-R27-D-198	11/19/2014	11:36	Water	X		X	X	X	X	X	X	X	-09	10	
C-R27-S-198	11/19/2014	11:48	Water	X		X	X	X	X	X	X	X	-10	10	
C-TAZ-D-198	11/19/2014	8:36	Water	X		X	X	X	X	X	X	X	-11	10	
C-TAZ-S-198	11/19/2014	8:56	Water	X		X	X	X	X	X	X	X	-12	10	
R63-198	11/19/2014	10:08	Water	X		X	X	X	X	X	X	X	-13	10	
RMP-AB1-198	11/19/2014	12:30	Water		X								-14	1	

* where provided w/ multiple Cr6 + CrT bottles, please analyze 1 + hold 2

113 AKC

	Signatures	Date/Time
Approved by		11-19-14
Sampled by		1605
Relinquished by		
Received by		11/19/14 1605
Relinquished by		11/19/14 1634
Received by		11/19/14 1634

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1.5°C/2.1°C/1.5°C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marion

Special Instructions:
Nov 11-12, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/19/2014	Workorder:	N013917
Rep sample Temp (Deg C):	1.5, 2.1, 1.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 11/20/14

Reviewed By: jpg 11/25/14

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + filter + residue after drying
B = weight of dish + filter in g
C = volume of sample used in mL

For **N013917-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4266-1.4266)*1000000}{100}$$
$$= 0 \text{ mg/L}$$

Reporting result in two significant figures,

TSS = 0 mg/L = ND

11/21/2014

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 11/20/2014	vol of sample	Wi	Wf	TSS, mg/L
MB-48034	100	1.4351	1.4354	3
LCS-48034	100	1.4405	1.5413	1008
N013917-001D	100	1.4266	1.4266	0
N013917-001D DUP	100	1.4369	1.4369	0
N013917-002D	100	1.4386	1.439	4
N013917-003D	100	1.4487	1.4486	-1
N013917-004D	50	1.4436	1.4459	46
N013917-007D	100	1.4373	1.4377	4
N013917-008D	100	1.4386	1.4387	1

11/21/2014

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 11/20/2014	vol of sample	Wi	Wf	TSS, mg/L
MB-48038	100	1.4362	1.4361	-1
LCS-48038	100	1.4216	1.5191	975
N013917-009D	100	1.4363	1.4364	1
N013917-009D DUP	100	1.4183	1.4184	1
N013917-010D	100	1.4334	1.4336	2
N013917-011D	100	1.4264	1.4266	2
N013917-012D	100	1.4279	1.4281	2
N013917-013D	100	1.4252	1.4254	2

11/21/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013917-013A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0735 * 1

= 0.0735

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

Nancy 12/9/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013917-005A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0716 * 1

= 0.0716

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

Nancy 12/9/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF *CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013917-001C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0 * 1 * (25/25) * 1000

= 0

Since PQL of Iron = 20 ug/L,

Iron, ug/L = ND

Nancy 12/9/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013917
Test Method: EPA 6010
Analysis Date: 12/03/14

Matrix: Water
Batch No.: 48099

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated value is <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013917-001C-DT 5X	Iron	ug/L	0	NA	0		10

Note: NA - Not Applicable

ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N013917-001C-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:			RunNo:	**97008**	
Client ID:	**ZZZZZZ**	Batch ID:	**48099**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**12/3/2014**		SeqNo:	**1884640**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	90.937	20	100.0	0	90.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in mg/L, in the original sample as follows:

Iron, mg/L = A * DF * PF

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013917-001B**, the concentration in mg/L is calculated as follows:

Iron, mg/L = 0.02823358105 * 1 * (25/25)

= 0.02823358105

Reporting in two significant figures,

Iron, mg/L = 0.028

12/9/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013917
Test Method: EPA 6010
Analysis Date: 12/03/14

Matrix: Water
Batch No.: 48086

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated value is <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013917-001B-DT 5X	Iron	mg/L	0.021802852	NA	0.028233581	22.78%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010W_HINK

Sample ID **N013917-001B-PS** SampType: **PS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48086** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.131	0.020	0.1000	0.02823	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013917-001C,** the concentration in ug/L is calculated as follows:

Barium, ug/L = 26.0419345632856 * 5 * (25/25)

= 130.209672816428

Reporting results in two significant figures,

Barium, ug/L = 130

12/9/2014

ASSET Laboratories

ICP-MS Metals in Water

Dilution Test Summary

Work Order No.: N013917
Test Method: EPA 6020
Analysis Date: 11/26/2014

Matrix: Water
Batch No.: 48061

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for As. PS passed criteria.
Dilution test is not applicable to Cr, Mn, Mo & Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013917-001C-DT 5X	Arsenic	µg/L	2.833286717	FAIL	2.532113562	11.89%	10
N013917-001C-DT 25X	Barium	µg/L	134.9519271	PASS	130.2096728	3.64%	10
N013917-001C-DT 5X	Chromium	µg/L	0	NA	0.090071799	100.00%	10
N013917-001C-DT 5X	Manganese	µg/L	0	NA	0		10
N013917-001C-DT 5X	Molybdenum	µg/L	4.631605991	NA	4.567277203	1.41%	10
N013917-001C-DT 5X	Selenium	µg/L	1.73660261	NA	1.454276877	19.41%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *01-Dec-14*

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N013917-001C-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **96970**
Client ID: **ZZZZZZ**	Batch ID: **48061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/26/2014**	SeqNo: **1883320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.747	0.10	10.00	2.532	102	80	120				
Manganese	94.493	0.50	100.0	0	94.5	80	120				
Molybdenum	16.219	0.50	10.00	4.567	117	80	120				
Selenium	10.672	0.50	10.00	1.454	92.2	80	120				

Sample ID: **N013917-001C-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **96970**
Client ID: **ZZZZZZ**	Batch ID: **48061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/26/2014**	SeqNo: **1883321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	252.234	5.0	100.0	130.2	122	80	120				S

DT of Ba @25x is within criteria

12/9/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013917
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N013917-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**96970**	
Client ID:	**ZZZZZZ**	Batch ID:	**48061**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**11/26/2014**		SeqNo:	**1883267**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.066	1.0	10.00	0.09007	99.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 10, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N013934

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on November 20, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *10-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013934

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 218.6:

Matrix Spike (MS) on QC sample N013934-015A-MS recovery biased high . Sample result was non-detect (ND) therefore reanalysis was not necessary. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N013908-001B-MS and N013908-001B-MSD are outside recovery criteria for Iron possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Total:

Matrix Spike (MS) on QC sample N013934-014B-MS is outside recovery criteria for Iron possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ASSET Laboratories

Date: *10-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013934
Contract No: 2014-RMP-198

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013934-001A	C-CON-D-198	Water	11/20/2014 9:54:00 AM	11/20/2014	12/10/2014
N013934-001B	C-CON-D-198	Water	11/20/2014 9:54:00 AM	11/20/2014	12/10/2014
N013934-001C	C-CON-D-198	Water	11/20/2014 9:54:00 AM	11/20/2014	12/10/2014
N013934-001D	C-CON-D-198	Water	11/20/2014 9:54:00 AM	11/20/2014	12/10/2014
N013934-001E	C-CON-D-198	Water	11/20/2014 9:54:00 AM	11/20/2014	12/10/2014
N013934-002A	C-CON-S-198	Water	11/20/2014 10:02:00 AM	11/20/2014	12/10/2014
N013934-002B	C-CON-S-198	Water	11/20/2014 10:02:00 AM	11/20/2014	12/10/2014
N013934-002C	C-CON-S-198	Water	11/20/2014 10:02:00 AM	11/20/2014	12/10/2014
N013934-002D	C-CON-S-198	Water	11/20/2014 10:02:00 AM	11/20/2014	12/10/2014
N013934-002E	C-CON-S-198	Water	11/20/2014 10:02:00 AM	11/20/2014	12/10/2014
N013934-003A	C-MW-82-198	Water	11/20/2014 8:30:00 AM	11/20/2014	12/10/2014
N013934-004A	C-MW-83-198	Water	11/20/2014 8:32:00 AM	11/20/2014	12/10/2014
N013934-005A	C-NR1-D-198	Water	11/20/2014 10:22:00 AM	11/20/2014	12/10/2014
N013934-005B	C-NR1-D-198	Water	11/20/2014 10:22:00 AM	11/20/2014	12/10/2014
N013934-005C	C-NR1-D-198	Water	11/20/2014 10:22:00 AM	11/20/2014	12/10/2014
N013934-005D	C-NR1-D-198	Water	11/20/2014 10:22:00 AM	11/20/2014	12/10/2014
N013934-005E	C-NR1-D-198	Water	11/20/2014 10:22:00 AM	11/20/2014	12/10/2014
N013934-006A	C-NR1-S-198	Water	11/20/2014 10:34:00 AM	11/20/2014	12/10/2014
N013934-006B	C-NR1-S-198	Water	11/20/2014 10:34:00 AM	11/20/2014	12/10/2014
N013934-006C	C-NR1-S-198	Water	11/20/2014 10:34:00 AM	11/20/2014	12/10/2014
N013934-006D	C-NR1-S-198	Water	11/20/2014 10:34:00 AM	11/20/2014	12/10/2014
N013934-006E	C-NR1-S-198	Water	11/20/2014 10:34:00 AM	11/20/2014	12/10/2014
N013934-007A	C-NR3-D-198	Water	11/20/2014 11:04:00 AM	11/20/2014	12/10/2014
N013934-007B	C-NR3-D-198	Water	11/20/2014 11:04:00 AM	11/20/2014	12/10/2014
N013934-007C	C-NR3-D-198	Water	11/20/2014 11:04:00 AM	11/20/2014	12/10/2014
N013934-007D	C-NR3-D-198	Water	11/20/2014 11:04:00 AM	11/20/2014	12/10/2014
N013934-007E	C-NR3-D-198	Water	11/20/2014 11:04:00 AM	11/20/2014	12/10/2014
N013934-008A	C-NR3-S-198	Water	11/20/2014 11:20:00 AM	11/20/2014	12/10/2014
N013934-008B	C-NR3-S-198	Water	11/20/2014 11:20:00 AM	11/20/2014	12/10/2014

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P: 702.307.2659 F: 702.307.2691

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013934
Contract No: 2014-RMP-198

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013934-008C	C-NR3-S-198	Water	11/20/2014 11:20:00 AM	11/20/2014	12/10/2014
N013934-008D	C-NR3-S-198	Water	11/20/2014 11:20:00 AM	11/20/2014	12/10/2014
N013934-008E	C-NR3-S-198	Water	11/20/2014 11:20:00 AM	11/20/2014	12/10/2014
N013934-009A	C-NR4-D-198	Water	11/20/2014 11:46:00 AM	11/20/2014	12/10/2014
N013934-009B	C-NR4-D-198	Water	11/20/2014 11:46:00 AM	11/20/2014	12/10/2014
N013934-009C	C-NR4-D-198	Water	11/20/2014 11:46:00 AM	11/20/2014	12/10/2014
N013934-009D	C-NR4-D-198	Water	11/20/2014 11:46:00 AM	11/20/2014	12/10/2014
N013934-009E	C-NR4-D-198	Water	11/20/2014 11:46:00 AM	11/20/2014	12/10/2014
N013934-010A	C-NR4-S-198	Water	11/20/2014 11:58:00 AM	11/20/2014	12/10/2014
N013934-010B	C-NR4-S-198	Water	11/20/2014 11:58:00 AM	11/20/2014	12/10/2014
N013934-010C	C-NR4-S-198	Water	11/20/2014 11:58:00 AM	11/20/2014	12/10/2014
N013934-010D	C-NR4-S-198	Water	11/20/2014 11:58:00 AM	11/20/2014	12/10/2014
N013934-010E	C-NR4-S-198	Water	11/20/2014 11:58:00 AM	11/20/2014	12/10/2014
N013934-011A	R-19-198	Water	11/20/2014 9:20:00 AM	11/20/2014	12/10/2014
N013934-011B	R-19-198	Water	11/20/2014 9:20:00 AM	11/20/2014	12/10/2014
N013934-011C	R-19-198	Water	11/20/2014 9:20:00 AM	11/20/2014	12/10/2014
N013934-011D	R-19-198	Water	11/20/2014 9:20:00 AM	11/20/2014	12/10/2014
N013934-011E	R-19-198	Water	11/20/2014 9:20:00 AM	11/20/2014	12/10/2014
N013934-012A	R-28-198	Water	11/20/2014 9:08:00 AM	11/20/2014	12/10/2014
N013934-012B	R-28-198	Water	11/20/2014 9:08:00 AM	11/20/2014	12/10/2014
N013934-012C	R-28-198	Water	11/20/2014 9:08:00 AM	11/20/2014	12/10/2014
N013934-012D	R-28-198	Water	11/20/2014 9:08:00 AM	11/20/2014	12/10/2014
N013934-012E	R-28-198	Water	11/20/2014 9:08:00 AM	11/20/2014	12/10/2014
N013934-013A	RMP-AB2-198	Water	11/20/2014 12:15:00 PM	11/20/2014	12/10/2014
N013934-014A	RRB-198	Water	11/20/2014 8:46:00 AM	11/20/2014	12/10/2014
N013934-014B	RRB-198	Water	11/20/2014 8:46:00 AM	11/20/2014	12/10/2014
N013934-014C	RRB-198	Water	11/20/2014 8:46:00 AM	11/20/2014	12/10/2014
N013934-014D	RRB-198	Water	11/20/2014 8:46:00 AM	11/20/2014	12/10/2014
N013934-014E	RRB-198	Water	11/20/2014 8:46:00 AM	11/20/2014	12/10/2014
N013934-015A	SW1-198	Water	11/20/2014 8:00:00 AM	11/20/2014	12/10/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N013934
Contract No: 2014-RMP-198

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N013934-015B	SW1-198	Water	11/20/2014 8:00:00 AM	11/20/2014	12/10/2014
N013934-015C	SW1-198	Water	11/20/2014 8:00:00 AM	11/20/2014	12/10/2014
N013934-016A	SW2-198	Water	11/20/2014 8:15:00 AM	11/20/2014	12/10/2014
N013934-016B	SW2-198	Water	11/20/2014 8:15:00 AM	11/20/2014	12/10/2014
N013934-016C	SW2-198	Water	11/20/2014 8:15:00 AM	11/20/2014	12/10/2014

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ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	990	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	650	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	980	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	970	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141121C**	QC Batch: **R96895**			PrepDate			Analyst: **AC**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	11/21/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N013934-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96895**
Client ID: **ZZZZZZ** Batch ID: **R96895** TestNo: **EPA 120.1** Analysis Date: **11/21/2014** SeqNo: **1879579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	981.000	0.10						986.0	0.508	10	

Sample ID **N013934-014D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **96895**
Client ID: **ZZZZZZ** Batch ID: **R96895** TestNo: **EPA 120.1** Analysis Date: **11/21/2014** SeqNo: **1879591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1013.000	0.10						1015	0.197	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-001

Client Sample ID: C-CON-D-198
Collection Date: 11/20/2014 9:54:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**				PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-002

Client Sample ID: C-CON-S-198
Collection Date: 11/20/2014 10:02:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**				PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D**	QC Batch: **R96897**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**				PrepDate			Analyst: **AC**
pH	8.3	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D**	QC Batch: **R96897**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-008

Client Sample ID: C-NR3-S-198
Collection Date: 11/20/2014 11:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**				PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-009

Client Sample ID: C-NR4-D-198
Collection Date: 11/20/2014 11:46:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**				PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D**	QC Batch: **R96897**			PrepDate			Analyst: **AC**
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-011

Client Sample ID: R-19-198
Collection Date: 11/20/2014 9:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**			PrepDate				Analyst: **AC**
pH	8.3	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-012

Client Sample ID: R-28-198
Collection Date: 11/20/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121D** QC Batch: **R96897**				PrepDate			Analyst: **AC**
pH	8.3	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-014

Client Sample ID: RRB-198
Collection Date: 11/20/2014 8:46:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **WETCHEM_141121E** QC Batch: **R96898** PrepDate Analyst: **AC**							
pH	8.2	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-015

Client Sample ID: SW1-198
Collection Date: 11/20/2014 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121E** QC Batch: **R96898**				PrepDate			Analyst: **AC**
pH	7.8	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-016

Client Sample ID: SW2-198
Collection Date: 11/20/2014 8:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_141121E** QC Batch: **R96898**				PrepDate			Analyst: **AC**
pH	8.0	0.10	0.10	H	pH Units	1	11/21/2014 03:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2014 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *10-Dec-14*

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID	**N013934-001D DUP**	SampType:	**DUP**	TestCode:	**150.1_4500H**	Units:	**pH Units**	Prep Date:			RunNo:	**96897**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96897**	TestNo:	**SM4500-H+B**			Analysis Date:	**11/21/2014**		SeqNo:	**1879619**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.230	0.10						8.210	0.243	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N013934-014D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **96898**
Client ID: **ZZZZZZ** Batch ID: **R96898** TestNo: **SM4500-H+B** Analysis Date: **11/21/2014** SeqNo: **1879631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.160	0.10						8.170	0.122	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141124D**	QC Batch: **48051**				PrepDate	**11/24/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	620	10	10		mg/L	1	11/24/2014 07:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48051** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/24/2014** RunNo: **96932**
Client ID: **PBW** Batch ID: **48051** TestNo: **SM2540C** Analysis Date: **11/24/2014** SeqNo: **1881748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48051** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/24/2014** RunNo: **96932**
Client ID: **LCSW** Batch ID: **48051** TestNo: **SM2540C** Analysis Date: **11/24/2014** SeqNo: **1881749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	973.000	10	1000	0	97.3	80	120				

Sample ID **N013934-012DDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/24/2014** RunNo: **96932**
Client ID: **ZZZZZZ** Batch ID: **48051** TestNo: **SM2540C** Analysis Date: **11/24/2014** SeqNo: **1881752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	627.000	10						625.0	0.319	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124A**	QC Batch: **48053**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	5.0	5.0		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124A**	QC Batch: **48053**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124A**	QC Batch: **48053**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/24/2014 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124A**	QC Batch: **48053**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124A**	QC Batch: **48053**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124A**	QC Batch: **48053**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	5.0	5.0		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124B**	QC Batch: **48055**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	5.0	5.0		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124B**	QC Batch: **48055**				PrepDate	**11/24/2014**	Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124B**	QC Batch: **48055**			PrepDate	**11/24/2014**		Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	5.0	5.0		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_141124B**	QC Batch: **48055**			PrepDate	**11/24/2014**		Analyst: **AC**
Suspended Solids (Residue, Non-Filterable)	ND	5.0	5.0		mg/L	1	11/24/2014 07:58 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **WETCHEM_141124B** QC Batch: **48055** PrepDate **11/24/2014** Analyst: **AC**							
Suspended Solids (Residue, Non-Filterable)	10	5.0	5.0		mg/L	1	11/24/2014 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48053	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/24/2014	RunNo:	96915
Client ID:	PBW	Batch ID:	48053	TestNo:	SM2540D			Analysis Date:	11/24/2014	SeqNo:	1880990

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48053	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/24/2014	RunNo:	96915
Client ID:	LCSW	Batch ID:	48053	TestNo:	SM2540D			Analysis Date:	11/24/2014	SeqNo:	1880991

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	867.000	10	1000	0	86.7	80	120				

Sample ID	N013934-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/24/2014	RunNo:	96915
Client ID:	ZZZZZZ	Batch ID:	48053	TestNo:	SM2540D			Analysis Date:	11/24/2014	SeqNo:	1880993

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	5.0						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48055	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/24/2014	RunNo:	96916
Client ID:	PBW	Batch ID:	48055	TestNo:	SM2540D			Analysis Date:	11/24/2014	SeqNo:	1880999

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48055	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/24/2014	RunNo:	96916
Client ID:	LCSW	Batch ID:	48055	TestNo:	SM2540D			Analysis Date:	11/24/2014	SeqNo:	1881000

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	867.000	10	1000	0	86.7	80	120				

Sample ID	N013934-009DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	11/24/2014	RunNo:	96916
Client ID:	ZZZZZZ	Batch ID:	48055	TestNo:	SM2540D			Analysis Date:	11/24/2014	SeqNo:	1881002

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	5.0						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141124A** QC Batch: **R96949** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 01:20 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141124A** QC Batch: **R96949** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 01:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-82-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141124A**	QC Batch: **R96949**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 02:19 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-83-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141124A**	QC Batch: **R96949**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 02:39 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141124A** QC Batch: **R96949** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 02:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 01:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141124A** QC Batch: **R96949** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 03:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141124A** QC Batch: **R96949** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/24/2014 03:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 02:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 03:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 03:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141125A**	QC Batch: **R96950**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 04:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:31 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-012

Client Sample ID: R-28-198
Collection Date: 11/20/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 04:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB2-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 12:15:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A**	QC Batch: **R96950**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 05:31 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141201A** QC Batch: **48062**				PrepDate	**11/25/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 05:50 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 03:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141125A** QC Batch: **R96950** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	11/25/2014 06:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141201A** QC Batch: **48062** PrepDate **11/25/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/1/2014 03:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96949** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **PBW** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96949** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **LCSW** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.844	0.20	5.000	0	96.9	90	110				

Sample ID **N013934-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0.07760	108	90	110				

Sample ID **N013934-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.08780	101	90	110				

Sample ID **N013934-005A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0.05930	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013934-006A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.133	0.20	1.000	0.05890	107	90	110				

Sample ID **N013934-007A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.06690	105	90	110				

Sample ID **N013950-019C-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.310	4.0						115.3	0.860	20	

Sample ID **N013950-019C-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	215.304	4.0	100.0	115.3	100	90	110				

Sample ID **N013950-019C-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	220.274	4.0	100.0	115.3	105	90	110	215.3	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R96950** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **PBW** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96950** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **LCSW** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.949	0.20	5.000	0	99.0	90	110				

Sample ID **N013934-008A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.102	0.20						0.1053	0	20	

Sample ID **N013934-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.111	0.20	1.000	0.1053	101	90	110				

Sample ID **N013934-008A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.111	0.20	1.000	0.1053	101	90	110	1.111	0.0180	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013934-009A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0.08420	98.4	90	110				

Sample ID **N013934-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0.08280	102	90	110				

Sample ID **N013934-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.09730	102	90	110				

Sample ID **N013934-012A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.108	0.20	1.000	0.09140	102	90	110				

Sample ID **N013934-014A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.109	0.20	1.000	0.1041	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N013934-015A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0	116	90	110				S

Sample ID **N013934-016A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0.09210	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **MB-R96949** SampType: **MBLK** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **PBW** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96949** SampType: **LCS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **LCSW** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.844	0.20	5.000	0	96.9	90	110				

Sample ID **N013934-003A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.127	0.20	1.000	0.07430	105	90	110				

Sample ID **N013934-004A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.023	0.20	1.000	0.07900	94.4	90	110				

Sample ID **N013950-019C-DUP** SampType: **DUP** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.310	4.0						115.3	0.860	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **N013950-019C-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	215.304	4.0	100.0	115.3	100	90	110				

Sample ID **N013950-019C-MSD** SampType: **MSD** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96949**
Client ID: **ZZZZZZ** Batch ID: **R96949** TestNo: **EPA 218.6** Analysis Date: **11/24/2014** SeqNo: **1882266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	220.274	4.0	100.0	115.3	105	90	110	215.3	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **MB-R96950** SampType: **MBLK** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **PBW** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R96950** SampType: **LCS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **LCSW** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.949	0.20	5.000	0	99.0	90	110				

Sample ID **N013934-008A-DUP** SampType: **DUP** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.102	0.20						0.1053	0	20	

Sample ID **N013934-008A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.111	0.20	1.000	0.1053	101	90	110				

Sample ID **N013934-008A-MSD** SampType: **MSD** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **96950**
Client ID: **ZZZZZZ** Batch ID: **R96950** TestNo: **EPA 218.6** Analysis Date: **11/25/2014** SeqNo: **1882392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.111	0.20	1.000	0.1053	101	90	110	1.111	0.0180	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID	**N013934-013A-MS**	SampType:	**MS**	TestCode:	**218.6R_WUP**	Units:	**µg/L**	Prep Date:			RunNo:	**96950**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96950**	TestNo:	**EPA 218.6**			Analysis Date:	**11/25/2014**		SeqNo:	**1882404**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.119	0.20	1.000	0.1050	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-48062** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **PBW** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-48062** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **LCSW** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.124	1.0	10.00	0	101	85	115				

Sample ID **N013934-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.937	1.0	10.00	0.09064	98.5	75	125				

Sample ID **N013934-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.923	1.0	10.00	0.09064	98.3	75	125	9.937	0.140	20	

Sample ID **N013934-014C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.787	1.0	10.00	0.1039	96.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-012

Client Sample ID: R-28-198
Collection Date: 11/20/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141126A**	QC Batch: **R96951**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	130	1.2	5.0		mg/L	1	11/26/2014 10:00 AM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	11/26/2014 10:00 AM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	11/26/2014 10:00 AM
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	11/26/2014 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *10-Dec-14*

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R96951** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96951**
Client ID: **LCSW** Batch ID: **R96951** TestNo: **SM 2320 B** Analysis Date: **11/26/2014** SeqNo: **1882492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.081	5.0	100.0	0	98.1	85	115				
Alkalinity, Total (As CaCO3)	102.345	5.0	100.0	0	102	85	115				

Sample ID **MB-R96951** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96951**
Client ID: **PBW** Batch ID: **R96951** TestNo: **SM 2320 B** Analysis Date: **11/26/2014** SeqNo: **1882493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N013934-012D DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96951**
Client ID: **ZZZZZZ** Batch ID: **R96951** TestNo: **SM 2320 B** Analysis Date: **11/26/2014** SeqNo: **1882495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	130.064	5.0						127.9	1.65	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	130.064	5.0						127.9	1.65	30	

Sample ID **N013934-012D MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96951**
Client ID: **ZZZZZZ** Batch ID: **R96951** TestNo: **SM 2320 B** Analysis Date: **11/26/2014** SeqNo: **1882496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	232.409	5.0	100.0	127.9	104	75	125				
Alkalinity, Total (As CaCO3)	232.409	5.0	100.0	127.9	104	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N013934-012D MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **96951**
Client ID: **ZZZZZZ** Batch ID: **R96951** TestNo: **SM 2320 B** Analysis Date: **11/26/2014** SeqNo: **1882497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	231.343	5.0	100.0	127.9	103	75	125	232.4	0.460	20	
Alkalinity, Total (As CaCO3)	231.343	5.0	100.0	127.9	103	75	125	232.4	0.460	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-012

Client Sample ID: R-28-198
Collection Date: 11/20/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	11/21/2014 12:53 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Chloride	85	0.50	10		mg/L	20	11/21/2014 04:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141121A** QC Batch: **R96920**				PrepDate			Analyst: **PS**
Sulfate	230	0.66	10		mg/L	20	11/21/2014 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R96920_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **PBW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R96920_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **LCSW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.555	0.50	2.500	0	102	90	110				

Sample ID **N013908-001C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.214	1.0						0.1360	0	20	

Sample ID **N013908-001C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.760	1.0	5.000	0.1360	92.5	80	120				

Sample ID **N013908-001C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.864	1.0	5.000	0.1360	94.6	80	120	4.760	2.16	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R96920_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **PBW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R96920_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **LCSW** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.526	0.50	2.500	0	101	90	110				

Sample ID **N013934-012D-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	85.500	10						85.38	0.140	20	

Sample ID **N013934-012D-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	135.860	10	50.00	85.38	101	80	120				

Sample ID **N013934-012D-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **96920**
Client ID: **ZZZZZZ** Batch ID: **R96920** TestNo: **EPA 300.0** Analysis Date: **11/21/2014** SeqNo: **1881121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	136.920	10	50.00	85.38	103	80	120	135.9	0.777	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R96920_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	PBW	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R96920_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	LCSW	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.039	0.50	5.000	0	101	90	110				

Sample ID	N013934-012D-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	ZZZZZZ	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	229.660	10						226.4	1.43	20	

Sample ID	N013934-012D-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	ZZZZZZ	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881140

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	327.940	10	100.0	226.4	102	80	120				

Sample ID	N013934-012D-MSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	96920
Client ID:	ZZZZZZ	Batch ID:	R96920	TestNo:	EPA 300.0			Analysis Date:	11/21/2014	SeqNo:	1881141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	330.740	10	100.0	226.4	104	80	120	327.9	0.850	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.28	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.28	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.29	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.29	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141126D**	QC Batch: **R96966**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.29	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.28	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.29	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.29	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141126D** QC Batch: **R96966** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.27	0.022	0.050		mg/L	1	11/26/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R96966** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96966**
Client ID: **PBW** Batch ID: **R96966** TestNo: **SM4500-NO3** Analysis Date: **11/26/2014** SeqNo: **1882972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R96966** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96966**
Client ID: **LCSW** Batch ID: **R96966** TestNo: **SM4500-NO3** Analysis Date: **11/26/2014** SeqNo: **1882973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.967	0.050	1.000	0	96.7	85	115				

Sample ID **N013934-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96966**
Client ID: **ZZZZZZ** Batch ID: **R96966** TestNo: **SM4500-NO3** Analysis Date: **11/26/2014** SeqNo: **1882977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.292	0.050						0.2813	3.87	20	

Sample ID **N013934-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96966**
Client ID: **ZZZZZZ** Batch ID: **R96966** TestNo: **SM4500-NO3** Analysis Date: **11/26/2014** SeqNo: **1882978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.246	0.050	1.000	0.2813	96.5	85	115				

Sample ID **N013934-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **96966**
Client ID: **ZZZZZZ** Batch ID: **R96966** TestNo: **SM4500-NO3** Analysis Date: **11/26/2014** SeqNo: **1882979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.152	0.050	1.000	0.2813	87.1	85	115	1.246	7.86	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	**N013934-005EDUP**	SampType:	**DUP**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:			RunNo:	**96966**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96966**	TestNo:	**SM4500-NO3**			Analysis Date:	**11/26/2014**		SeqNo:	**1882982**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.343	0.050						0.2892	16.9	20	

Sample ID	**N013934-005EMS**	SampType:	**MS**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:			RunNo:	**96966**	
Client ID:	**ZZZZZZ**	Batch ID:	**R96966**	TestNo:	**SM4500-NO3**			Analysis Date:	**11/26/2014**		SeqNo:	**1882983**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.260	0.050	1.000	0.2892	97.1	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 07:43 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.043	0.0013	0.020		mg/L	1	12/3/2014 04:13 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:11 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.028	0.0013	0.020		mg/L	1	12/3/2014 04:41 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:16 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.051	0.0013	0.020		mg/L	1	12/3/2014 04:46 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:20 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141204C**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	ND	0.0013	0.020		mg/L	1	12/4/2014 06:15 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:25 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.030	0.0013	0.020		mg/L	1	12/3/2014 05:22 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-008

Client Sample ID: C-NR3-S-198
Collection Date: 11/20/2014 11:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:30 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.024	0.0013	0.020		mg/L	1	12/3/2014 05:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:45 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	ND	0.0013	0.020		mg/L	1	12/3/2014 05:31 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**			PrepDate	**12/3/2014**		Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:50 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**			PrepDate	**11/26/2014**		Analyst: **CEI**
Iron	ND	0.0013	0.020		mg/L	1	12/3/2014 05:36 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 08:55 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.042	0.0013	0.020		mg/L	1	12/3/2014 05:41 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT: CH2M HILL
Lab Order: N013934
Project: PG&E Topock
Lab ID: N013934-012

Client Sample ID: R-28-198
Collection Date: 11/20/2014 9:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141201C**	QC Batch: **48067**				PrepDate	**12/1/2014**	Analyst: **CEI**
Boron	130	19	100		ug/L	1	12/1/2014 08:43 PM
Calcium	68000	58	500		ug/L	1	12/1/2014 08:43 PM
Iron	ND	1.3	20		ug/L	1	12/3/2014 09:00 PM
Magnesium	23000	11	100		ug/L	1	12/1/2014 08:43 PM
Potassium	4500	420	2500		ug/L	5	12/1/2014 06:08 PM
Sodium	88000	190	2500		ug/L	5	12/1/2014 06:08 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203A**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.052	0.0013	0.020		mg/L	1	12/3/2014 05:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141203B**	QC Batch: **48104**				PrepDate	**12/3/2014**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	12/3/2014 09:05 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141204C**	QC Batch: **48073**				PrepDate	**11/26/2014**	Analyst: **CEI**
Iron	0.36	0.0013	0.020		mg/L	1	12/4/2014 06:19 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48067** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96973**
Client ID: **PBW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID **LCS2-48067** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96973**
Client ID: **LCSW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19584.576	500	20000	0	97.9	85	115				
Sodium	19568.962	500	20000	0	97.8	85	115				

Sample ID **N013934-012C-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	24871.139	2500	20000	4458	102	75	125				
Sodium	106639.442	2500	20000	88070	92.8	75	125				

Sample ID **N013934-012C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	24987.748	2500	20000	4458	103	75	125	24870	0.468	20	
Sodium	107084.549	2500	20000	88070	95.1	75	125	106600	0.417	20	

Sample ID **LCS1-48067** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **LCSW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48067** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **LCSW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4689.233	100	5000	0	93.8	85	115				
Calcium	9525.001	500	10000	0	95.3	85	115				
Iron	111.334	20	100.0	0	111	85	115				
Magnesium	9629.993	100	10000	0	96.3	85	115				

Sample ID **N013908-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5694.528	100	5000	676.9	100	75	125				
Calcium	304553.756	500	10000	282900	216	75	125				S
Iron	151.828	20	100.0	7.431	144	75	125				S
Magnesium	37249.781	100	10000	27830	94.2	75	125				

Sample ID **N013908-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5714.678	100	5000	676.9	101	75	125	5695	0.353	20	
Calcium	306398.142	500	10000	282900	235	75	125	304600	0.604	20	S
Iron	149.091	20	100.0	7.431	142	75	125	151.8	1.82	20	S
Magnesium	37416.372	100	10000	27830	95.9	75	125	37250	0.446	20	

Sample ID **MB-48067** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/1/2014** RunNo: **96979**
Client ID: **PBW** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**MB-48067**	SampType:	**MBLK**	TestCode:	**6010_WDPG**	Units:	**ug/L**		Prep Date:	**12/1/2014**		RunNo:	**96979**	
Client ID:	**PBW**	Batch ID:	**48067**	TestNo:	**EPA 6010B**		**EPA 3010A**		Analysis Date:	**12/1/2014**		SeqNo:	**1883625**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	7.437	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48104	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/3/2014	RunNo:	97008
Client ID:	PBW	Batch ID:	48104	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/3/2014	SeqNo:	1884696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-48104	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/3/2014	RunNo:	97008
Client ID:	LCSW	Batch ID:	48104	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/3/2014	SeqNo:	1884697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	90.953	20	100.0	0	91.0	85	115				

Sample ID	N013934-001C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/3/2014	RunNo:	97008
Client ID:	ZZZZZZ	Batch ID:	48104	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/3/2014	SeqNo:	1884703

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	93.178	20	100.0	0	93.2	75	125				

Sample ID	N013934-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/3/2014	RunNo:	97008
Client ID:	ZZZZZZ	Batch ID:	48104	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/3/2014	SeqNo:	1884704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	94.252	20	100.0	0	94.3	75	125	93.18	1.15	20	

Sample ID	N013934-014C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/3/2014	RunNo:	97008
Client ID:	ZZZZZZ	Batch ID:	48104	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/3/2014	SeqNo:	1884717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.738	20	100.0	0	102	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Date: *19-Dec-14*

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010W_HINK

Sample ID: **MB-48073** SampType: **MBLK** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **11/26/2014** RunNo: **97007**
Client ID: **PBW** Batch ID: **48073** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	0.020									

Sample ID: **LCS-48073** SampType: **LCS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **11/26/2014** RunNo: **97007**
Client ID: **LCSW** Batch ID: **48073** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.090	0.020	0.1000	0	90.5	85	115				

Sample ID: **N013934-001B-MS** SampType: **MS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **11/26/2014** RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48073** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.136	0.020	0.1000	0.04301	93.3	75	125				

Sample ID: **N013934-001B-MSD** SampType: **MSD** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **11/26/2014** RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48073** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.136	0.020	0.1000	0.04301	93.2	75	125	0.1363	0.0580	20	

Sample ID: **N013934-014B-MS** SampType: **MS** TestCode: **6010W_HINK** Units: **mg/L** Prep Date: **11/26/2014** RunNo: **97007**
Client ID: **ZZZZZZ** Batch ID: **48073** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/3/2014** SeqNo: **1884568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.447	0.020	0.1000	0.3568	90.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 01:10 PM
Barium	160	0.15	5.0		µg/L	5	12/1/2014 01:16 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 01:10 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	12/1/2014 01:10 PM
Selenium	1.4	0.069	0.50		µg/L	1	12/1/2014 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 01:49 PM
Barium	110	0.030	1.0		µg/L	1	12/1/2014 01:49 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 01:49 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	12/1/2014 01:49 PM
Selenium	1.4	0.069	0.50		µg/L	1	12/1/2014 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 01:54 PM
Barium	110	0.030	1.0		µg/L	1	12/1/2014 01:54 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 01:54 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	12/1/2014 01:54 PM
Selenium	1.4	0.069	0.50		µg/L	1	12/1/2014 01:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 10:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 02:00 PM
Barium	120	0.030	1.0		µg/L	1	12/1/2014 02:00 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:00 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	12/1/2014 02:00 PM
Selenium	1.4	0.069	0.50		µg/L	1	12/1/2014 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:04:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 02:05 PM
Barium	120	0.030	1.0		µg/L	1	12/1/2014 02:05 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:05 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	12/1/2014 02:05 PM
Selenium	1.4	0.069	0.50		µg/L	1	12/1/2014 02:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	12/1/2014 02:11 PM
Barium	120	0.030	1.0		µg/L	1	12/1/2014 02:11 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:11 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	12/1/2014 02:11 PM
Selenium	1.5	0.069	0.50		µg/L	1	12/1/2014 02:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 02:18 PM
Barium	120	0.030	1.0		µg/L	1	12/1/2014 02:18 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:18 PM
Molybdenum	4.9	0.15	0.50		µg/L	1	12/1/2014 02:18 PM
Selenium	1.3	0.069	0.50		µg/L	1	12/1/2014 02:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	12/1/2014 02:24 PM
Barium	120	0.030	1.0		µg/L	1	12/1/2014 02:24 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:24 PM
Molybdenum	4.9	0.15	0.50		µg/L	1	12/1/2014 02:24 PM
Selenium	1.5	0.069	0.50		µg/L	1	12/1/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/1/2014 02:31 PM
Barium	110	0.030	1.0		µg/L	1	12/1/2014 02:31 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:31 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	12/1/2014 02:31 PM
Selenium	1.4	0.069	0.50		µg/L	1	12/1/2014 02:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 9:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	12/1/2014 02:37 PM
Barium	120	0.030	1.0		µg/L	1	12/1/2014 02:37 PM
Manganese	ND	0.026	0.50		µg/L	1	12/1/2014 02:37 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	12/1/2014 02:37 PM
Selenium	1.6	0.069	0.50		µg/L	1	12/1/2014 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-198
Lab Order:	N013934	**Collection Date:**	11/20/2014 8:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N013934-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141201A**	QC Batch: **48062**			PrepDate	**11/25/2014**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	12/1/2014 02:43 PM
Barium	140	0.15	5.0		µg/L	5	12/1/2014 04:19 PM
Manganese	14	0.026	0.50		µg/L	1	12/1/2014 02:43 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	12/1/2014 02:43 PM
Selenium	1.3	0.069	0.50		µg/L	1	12/1/2014 02:43 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48062** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **PBW** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.332	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48062** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **LCSW** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.284	0.10	10.00	0	103	85	115				
Barium	106.260	1.0	100.0	0	106	85	115				
Manganese	99.413	0.50	100.0	0	99.4	85	115				
Molybdenum	10.575	0.50	10.00	0	106	85	115				
Selenium	10.152	0.50	10.00	0	102	85	115				

Sample ID **N013934-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.873	0.10	10.00	2.474	104	75	125				
Manganese	92.904	0.50	100.0	0	92.9	75	125				
Molybdenum	16.340	0.50	10.00	4.563	118	75	125				
Selenium	11.257	0.50	10.00	1.379	98.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N013934-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.928	0.10	10.00	2.474	105	75	125	12.87	0.427	20	
Manganese	93.939	0.50	100.0	0	93.9	75	125	92.90	1.11	20	
Molybdenum	16.356	0.50	10.00	4.563	118	75	125	16.34	0.0967	20	
Selenium	11.402	0.50	10.00	1.379	100	75	125	11.26	1.28	20	

Sample ID **N013934-014C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.367	0.10	10.00	2.395	99.7	75	125				
Manganese	107.785	0.50	100.0	14.13	93.7	75	125				
Molybdenum	15.758	0.50	10.00	4.672	111	75	125				
Selenium	11.061	0.50	10.00	1.317	97.4	75	125				

Sample ID **N013934-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	250.782	5.0	100.0	158.4	92.3	75	125				

Sample ID **N013934-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **11/25/2014** RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	249.850	5.0	100.0	158.4	91.4	75	125	250.8	0.372	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N013934-014C-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**11/25/2014**	RunNo:	**96977**		
Client ID:	**ZZZZZZ**	Batch ID:	**48062**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**12/1/2014**	SeqNo:	**1883578**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Barium		256.662	5.0	100.0	138.7	118	75	125					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

11/20/2014 4:06:38 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-RMP-198
Turnaround Time 10 Days
Shipping Date: 11/17/2014
COC Number: RMP-198

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	NA	NA	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	7	7	7	7	7	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (6010BFF) Field Filtered Dissolved Ca,Mg,K,Na,B	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Metals (6020A) Field Filtered Chromium	Anions (E300.0) Br,Cl,SO4	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
C-CON-D-198	11/20/2014	9:54	Water	X		X		X	X		X			X	X	X	N013934-01	10	
C-CON-S-198	11/20/2014	10:02	Water	X		X		X	X		X			X	X	X	-02	10	
C-MW-82-198	11/20/2014	8:30	Water		X												-03	1	
C-MW-83-198	11/20/2014	8:32	Water		X												-04	1	
C-NR1-D-198	11/20/2014	10:22	Water	X		X		X	X		X			X	X	X	-05	10	
C-NR1-S-198	11/20/2014	10:34	Water	X		X		X	X		X			X	X	X	-06	10	
C-NR3-D-198	11/20/2014	11:04	Water	X		X		X	X		X			X	X	X	-07	10	
C-NR3-S-198	11/20/2014	11:20	Water	X		X		X	X		X			X	X	X	-08	10	
C-NR4-D-198	11/20/2014	11:46	Water	X		X		X	X		X			X	X	X	-09	10	
C-NR4-S-198	11/20/2014	11:58	Water	X		X		X	X		X			X	X	X	-10	10	
R-19-198	11/20/2014	9:20	Water	X		X		X	X		X			X	X	X	-11	10	
R-28-198	11/20/2014	9:08	Water	X		X	X	X	X	X	X	X	X	X	X	X	-12	10	
RMP-AB2-198	11/20/2014	12:15	Water		X												-13	1	
RRB-198	11/20/2014	8:46	Water	X		X		X	X		X			X	X	X	-14	10	

* where provided w/ multiple bottles for Cr6 + CrT, please analyze 1 + hold 2

	Signatures	Date/Time
Approved by		11-20-14
Sampled by		1610
Relinquished by		
Received by		11/20/14 1610
Relinquished by		11/20/14
Received by		11/20/14 1648

Shipping Details
Method of Shipment: FedEx
On Ice: (yes) / no 1-9°C / 1-5°C
Airbill No: 1242
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 11-12, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL **CHAIN OF CUSTODY RECORD** *11/20/2014 4:06:39 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2014-RMP-198
Turnaround Time 10 Days
Shipping Date: 11/17/2014
COC Number: RMP-198

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	125 ml Poly	
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	
			Filtered:	Field	NA	NA	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA	
			Holding Time:	28	28	180	180	180	180	7	7	7	7	7	7	28	
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (6010BFF) Field Filtered Dissolved Ca,Mg,K,Na,B	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Metals (6020A) Field Filtered Chromium	Anions (E300.0) Br,Cl,SO4	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate	Number of Containers	COMMENTS
SW1-198	11/20/2014	8:00	Water	X					X		X			X			8	
SW2-198	11/20/2014	8:15	Water	X					X		X			X			8	
																TOTAL NUMBER OF CONTAINERS	~~123~~ 129	

*Where provided w/ multiple bottles for Cr6 + CrT, please analyze 1 + hold 2

N013934-15
-16

	Signatures	Date/Time
Approved by		11-20-14 1610
Sampled by		
Relinquished by		
Received by		11/20/14 1610
Relinquished by		11/21/14
Received by		11/21/14 1848

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 1x 8oz 1x 4oz
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Nov 11-12, 2014

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/20/2014	Workorder:	N013934
Rep sample Temp (Deg C):	1.5, 1.8, 1.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples received for pH are past holding time.

Checklist Completed By JPG jpg 11/24/14

Reviewed By: jpg 11/26/14

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N013934-012D** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(54.9052-54.8427)*1000000}{100}$$
$$= 625$$

Reporting result in two significant figures,

TDS=620

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 11/25/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48051	100	55.3721	55.3723	2	1	2		
LCS-48051	100	53.9245	54.0218	973	1	973		
N013925-001B	50	60.6282	60.7463	1181	2	2362	2690	0.878
N013934-012D	100	54.8427	54.9052	625	1	625	972	0.643
N013934-012D DUP	100	53.9343	53.997	627	1	627	972	0.645
N013944-001A	30	30.5898	30.692	1022	3.33333	3407	4260	0.800

12/8/2014

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + filter + residue after drying
B = weight of dish + filter in g
C = volume of sample used in mL

For **N013934-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4238-1.4237)*1000000}{200}$$
$$= 0.5 \text{ mg/L}$$

Reporting result in two significant figures,

TSS = 0.5 mg/L = ND

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 11/24/2014	vol of sample	Wi	Wf	TSS, mg/L
MB-48053	100	1.4246	1.4246	0
LCS-48053	100	1.4323	1.519	867
N013934-001D	200	1.4237	1.4238	0.5
N013934-001D DUP	200	1.428	1.4281	0.5
N013934-002D	100	1.4336	1.4337	1
N013934-005D	100	1.4366	1.4367	1
N013934-006D	100	1.4303	1.4305	2
N013934-007D	100	1.4271	1.4272	1
N013934-008D	200	1.4537	1.4539	1

11/25/2014

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 11/24/2014	vol of sample	Wi	Wf	TSS, mg/L
MB-48055	100	1.4232	1.4236	4
LCS-48055	100	1.4197	1.5064	867
N013934-009D	200	1.4359	1.4361	1
N013934-009D DUP	200	1.4323	1.4325	1
N013934-010D	100	1.4403	1.4405	2
N013934-011D	200	1.4368	1.437	1
N013934-012D	200	1.4378	1.4378	0
N013934-013D	200	1.4199	1.422	10.5

11/25/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013934-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0776 * 1

= 0.0776

Since PQL 0.20 µg/L,

Cr^{+6}, µg/L = ND

Nancy 12/10/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N013934-003A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0743 * 1

= 0.0743

Since PQL 0.20 µg/L,

Cr^{+6}, mg/L = ND

12/10/2014

Sample ID: **N013934-012D @ pH 8.30**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.725mL)

= **0.02132 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (6.00) (0.02132 N) (1) * 1000

=127.92 **mg/L**

Reporting results in two significant figures,

= 130 **mg/L** as CaCO3

12/3/2014

11/26/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02132 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.00 mL) (0.02132 N) (1) * 1000

= 127.92 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 127.92 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 130 **mg/L**

12/3/2014

11/26/2014

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N013934-012D** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.269 * 20

= 85.38

Reporting result in two significant figures,

Chloride, mg/L = 85

Nancy 12/8/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013934-012C**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 17.6147 * 5 * (25/25) * 1000

= 88073.39

Reporting results in two significant figures,

Sodium, ug/L = 88000

12/10/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013934
Test Method: EPA 6010
Analysis Date: 12/01/14

Matrix: Water
Batch No.: 48067

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to K. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013934-012C-DT 25X	Potassium	ug/L	4709.774483	NA	4457.611834	5.66%	10
N013934-012C-DT 25X	Sodium	ug/L	84985.4492	PASS	88073.39075	3.51%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013934
Test Method: EPA 6010
Analysis Date: 12/01/14

Matrix: Water
Batch No.: 48067

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B. The calculated concentration is <25RL.
Dilution test failed for Ca.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013908-001B-DT 5X	Boron	ug/L	725.173494	NA	676.8616025	7.14%	10
N013884-001B-DT 5X	Calcium	ug/L	246739.6535	FAIL	282947.1358	12.80%	10
N013884-001B-DT 5X	Magnesium	ug/L	27399.10918	PASS	27829.39391	1.55%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N013934-012C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96973**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25131.026	2500	20000	4458	103	80	120				
Sodium	108280.753	2500	20000	88070	101	80	120				

Sample ID **N013908-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **96979**
Client ID: **ZZZZZZ** Batch ID: **48067** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5648.876	100	5000	676.9	99.4	80	120				
Calcium	305422.803	500	10000	282900	225	80	120				S
Magnesium	37502.383	100	10000	27830	96.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013934
Test Method: EPA 6010
Analysis Date: 12/03/14

Matrix: Water
Batch No.: 48104

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated value is <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013934-001C-DT 5X	Iron	ug/L	0	NA	0		10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N013934-001C-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:				RunNo:	**97008**
Client ID:	**ZZZZZZ**	Batch ID:	**48104**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**12/3/2014**			SeqNo:	**1884702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.881	20	100.0	0	98.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in mg/L, in the original sample as follows:

Iron, mg/L = A * DF * PF

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N013934-001B**, the concentration in mg/L is calculated as follows:

Iron, mg/L = 0.04301269152 * 1 * (25/25)

= 0.04301269152

Reporting in two significant figures,

Iron, mg/L = 0.043

Nancy 12/10/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N013934
Test Method: EPA 6010
Analysis Date: 12/03/14

Matrix: Water
Batch No.: 48073

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated value is <25X RL. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N013934-001B-DT 5X	Iron	mg/L	0.018963281	NA	0.043012692	55.91%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *04-Dec-14*

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010W_HINK

Sample ID	**N013934-001B-PS**	SampType:	**PS**	TestCode:	**6010W_HINK**	Units:	**mg/L**	Prep Date:			RunNo:	**97007**	
Client ID:	**ZZZZZZ**	Batch ID:	**48073**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**12/3/2014**		SeqNo:	**1884550**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.135	0.020	0.1000	0.04301	91.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N013934-014C,** the concentration in ug/L is calculated as follows:

Barium, ug/L = 27.7431293349398 * 5 * (25/25)

= 138.715646674699

Reporting results in two significant figures,

Barium, ug/L = 140

Nancy 12/10/2014

ASSET Laboratories

ICP-MS Metals in Water

Dilution Test Summary

Work Order No.: N013934
Test Method: EPA 6020
Analysis Date: 12/1/2014

Matrix: Water
Batch No.: 48062

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for As. PS passed criteria.
Dilution test is not applicable to Cr, Mn, Mo & Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N013934-001C-DT 5X	Arsenic	µg/L	3.264152772	FAIL	2.474240852	31.93%	10
N013934-001C-DT 25X	Barium	µg/L	165.8030106	PASS	158.4480288	4.64%	10
N013934-001C-DT 5X	Chromium	µg/L	0	NA	0.090637707	100.00%	10
N013934-001C-DT 5X	Manganese	µg/L	0	NA	0		10
N013934-001C-DT 5X	Molybdenum	µg/L	5.873942453	NA	4.563322714	28.72%	10
N013934-001C-DT 5X	Selenium	µg/L	1.988765341	NA	1.378544902	44.27%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N013934-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.876	0.10	10.00	2.474	104	80	120				
Manganese	93.483	0.50	100.0	0	93.5	80	120				
Molybdenum	16.016	0.50	10.00	4.563	115	80	120				
Selenium	11.214	0.50	10.00	1.379	98.4	80	120				

Sample ID: **N013934-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **96977**
Client ID: **ZZZZZZ** Batch ID: **48062** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/1/2014** SeqNo: **1883572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	241.115	5.0	100.0	158.4	82.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N013934
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N013934-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**96977**
Client ID:	**ZZZZZZ**	Batch ID:	**48062**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/1/2014**			SeqNo:	**1883495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.887	1.0	10.00	0.09064	98.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 16, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014023

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 02, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *16-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014023

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen and Deuterium were subcontracted to Zymax- Escondido,CA.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014023-005 and N014023-012 due to precipitation of samples upon the addition of eluent.

Dilution was necessary on samples N014023-001 and N014023-004 due to high Chloride concentration.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014023-004B-MS, N014023-004B-MSD, N014057-001B-MS and N014057-002B-MS are outside recovery criteria for Sodium and Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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3151 W. Post Rd., Las Vegas, NV 89118
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CASE NARRATIVE

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary for some analytes on samples N014023-001, N014023-004, N014023-005, N014023-006, N014023-012 and N014023-013 due to failed Internal Standard when samples were analyzed at no dilution possibly due to matrix interference.

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ASSET Laboratories

Date: *16-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014023
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014023-001A	MW-128-200	Water	12/1/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-001B	MW-128-200	Water	12/1/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-001C	MW-128-200	Water	12/1/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-001D	MW-128-200	Water	12/1/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-001E	MW-128-200	Water	12/1/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-002A	MW-32-035-200b	Water	12/1/2014 9:00:00 AM	12/2/2014	12/16/2014
N014023-003A	MW-34-080-200b	Water	12/1/2014 11:44:00 AM	12/2/2014	12/16/2014
N014023-004A	MW-34-100-200	Water	12/1/2014 12:24:00 PM	12/2/2014	12/16/2014
N014023-004B	MW-34-100-200	Water	12/1/2014 12:24:00 PM	12/2/2014	12/16/2014
N014023-004C	MW-34-100-200	Water	12/1/2014 12:24:00 PM	12/2/2014	12/16/2014
N014023-004D	MW-34-100-200	Water	12/1/2014 12:24:00 PM	12/2/2014	12/16/2014
N014023-004E	MW-34-100-200	Water	12/1/2014 12:24:00 PM	12/2/2014	12/16/2014
N014023-005A	MW-39-100-200	Water	12/1/2014 10:08:00 AM	12/2/2014	12/16/2014
N014023-005B	MW-39-100-200	Water	12/1/2014 10:08:00 AM	12/2/2014	12/16/2014
N014023-005C	MW-39-100-200	Water	12/1/2014 10:08:00 AM	12/2/2014	12/16/2014
N014023-005D	MW-39-100-200	Water	12/1/2014 10:08:00 AM	12/2/2014	12/16/2014
N014023-005E	MW-39-100-200	Water	12/1/2014 10:08:00 AM	12/2/2014	12/16/2014
N014023-006A	MW-72-080-200	Water	12/1/2014 3:12:00 PM	12/2/2014	12/16/2014
N014023-006B	MW-72-080-200	Water	12/1/2014 3:12:00 PM	12/2/2014	12/16/2014
N014023-006C	MW-72-080-200	Water	12/1/2014 3:12:00 PM	12/2/2014	12/16/2014
N014023-006D	MW-72-080-200	Water	12/1/2014 3:12:00 PM	12/2/2014	12/16/2014
N014023-007A	MW-09-200	Water	12/2/2014 9:48:00 AM	12/2/2014	12/16/2014
N014023-007B	MW-09-200	Water	12/2/2014 9:48:00 AM	12/2/2014	12/16/2014
N014023-007C	MW-09-200	Water	12/2/2014 9:48:00 AM	12/2/2014	12/16/2014
N014023-007D	MW-09-200	Water	12/2/2014 9:48:00 AM	12/2/2014	12/16/2014
N014023-008A	MW-10-200	Water	12/2/2014 10:36:00 AM	12/2/2014	12/16/2014
N014023-008B	MW-10-200	Water	12/2/2014 10:36:00 AM	12/2/2014	12/16/2014
N014023-008C	MW-10-200	Water	12/2/2014 10:36:00 AM	12/2/2014	12/16/2014
N014023-008D	MW-10-200	Water	12/2/2014 10:36:00 AM	12/2/2014	12/16/2014

ASSET LABORATORIES
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3151 W. Post Rd., Las Vegas, NV 89118
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014023
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014023-009A	MW-11-200	Water	12/2/2014 8:52:00 AM	12/2/2014	12/16/2014
N014023-009B	MW-11-200	Water	12/2/2014 8:52:00 AM	12/2/2014	12/16/2014
N014023-009C	MW-11-200	Water	12/2/2014 8:52:00 AM	12/2/2014	12/16/2014
N014023-009D	MW-11-200	Water	12/2/2014 8:52:00 AM	12/2/2014	12/16/2014
N014023-010A	MW-121-200	Water	12/2/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-010B	MW-121-200	Water	12/2/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-010C	MW-121-200	Water	12/2/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-010D	MW-121-200	Water	12/2/2014 7:00:00 AM	12/2/2014	12/16/2014
N014023-011A	MW-214-200	Water	12/2/2014 6:35:00 AM	12/2/2014	12/16/2014
N014023-012A	MW-37D-200	Water	12/2/2014 1:42:00 PM	12/2/2014	12/16/2014
N014023-012B	MW-37D-200	Water	12/2/2014 1:42:00 PM	12/2/2014	12/16/2014
N014023-012C	MW-37D-200	Water	12/2/2014 1:42:00 PM	12/2/2014	12/16/2014
N014023-012D	MW-37D-200	Water	12/2/2014 1:42:00 PM	12/2/2014	12/16/2014
N014023-013A	MW-73-080-200	Water	12/2/2014 7:05:00 AM	12/2/2014	12/16/2014
N014023-013B	MW-73-080-200	Water	12/2/2014 7:05:00 AM	12/2/2014	12/16/2014
N014023-013C	MW-73-080-200	Water	12/2/2014 7:05:00 AM	12/2/2014	12/16/2014
N014023-013D	MW-73-080-200	Water	12/2/2014 7:05:00 AM	12/2/2014	12/16/2014

ASSET LABORATORIES
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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 12:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	2700	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 10:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	2400	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141203B**	QC Batch: **R97000**			PrepDate			Analyst: **AC**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/3/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014023-001C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97000**
Client ID: **ZZZZZZ** Batch ID: **R97000** TestNo: **EPA 120.1** Analysis Date: **12/3/2014** SeqNo: **1884302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16620.000	0.10						16580	0.241	10	

Sample ID **N014026-001F DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97000**
Client ID: **ZZZZZZ** Batch ID: **R97000** TestNo: **EPA 120.1** Analysis Date: **12/3/2014** SeqNo: **1886493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	313.000	0.10						314.0	0.319	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204E**	QC Batch: **48091**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	9900	100	100		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 12:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204E**	QC Batch: **48091**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	9900	100	100		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204E**	QC Batch: **48091**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	9500	100	100		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204E**	QC Batch: **48091**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 10:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204E**	QC Batch: **48091**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1500	17	17		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204F**	QC Batch: **48092**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1400	17	17		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204F**	QC Batch: **48092**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141204F**	QC Batch: **48092**				PrepDate	**12/4/2014**	Analyst: **AC**
Total Dissolved Solids (Residue, Filterable)	7400	100	100		mg/L	1	12/4/2014 08:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48091** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/4/2014** RunNo: **97043**
Client ID: **PBW** Batch ID: **48091** TestNo: **SM2540C** Analysis Date: **12/4/2014** SeqNo: **1885664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48091** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/4/2014** RunNo: **97043**
Client ID: **LCSW** Batch ID: **48091** TestNo: **SM2540C** Analysis Date: **12/4/2014** SeqNo: **1885665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	999.000	10	1000	0	99.9	80	120				

Sample ID **N014002-001FDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/4/2014** RunNo: **97043**
Client ID: **ZZZZZZ** Batch ID: **48091** TestNo: **SM2540C** Analysis Date: **12/4/2014** SeqNo: **1885667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	316.000	10						314.0	0.635	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-48092	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/4/2014	RunNo:	97044
Client ID:	PBW	Batch ID:	48092	TestNo:	SM2540C			Analysis Date:	12/4/2014	SeqNo:	1885673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-48092	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/4/2014	RunNo:	97044
Client ID:	LCSW	Batch ID:	48092	TestNo:	SM2540C			Analysis Date:	12/4/2014	SeqNo:	1885674

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	942.000	10	1000	0	94.2	80	120				

Sample ID	N014023-009C DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/4/2014	RunNo:	97044
Client ID:	ZZZZZZ	Batch ID:	48092	TestNo:	SM2540C			Analysis Date:	12/4/2014	SeqNo:	1885676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1355.003	17						1360	0.368	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141203A**	QC Batch: **R97016**			PrepDate			Analyst: **RB**
Hexavalent Chromium	230	0.80	10		µg/L	50	12/3/2014 03:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Chromium	220	0.15	5.0		µg/L	5	12/15/2014 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 12:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141203A**	QC Batch: **R97016**			PrepDate			Analyst: **RB**
Hexavalent Chromium	220	0.80	10		µg/L	50	12/3/2014 04:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Chromium	230	0.15	5.0		µg/L	5	12/15/2014 01:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141203A** QC Batch: **R97016**				PrepDate			Analyst: **RB**
Hexavalent Chromium	57	0.16	2.0		µg/L	10	12/3/2014 04:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141215A** QC Batch: **48108**				PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	49	0.030	1.0		µg/L	1	12/15/2014 01:06 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141203A**	QC Batch: **R97016**			PrepDate			Analyst: **RB**
Hexavalent Chromium	130	0.32	4.0		µg/L	20	12/3/2014 04:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	110	0.030	1.0		µg/L	1	12/15/2014 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141211E**	QC Batch: **R97144**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	210	1.4	10		µg/L	1	12/11/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	210	0.15	5.0		µg/L	5	12/15/2014 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 10:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141211E**	QC Batch: **R97144**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	200	1.4	10		µg/L	1	12/11/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	220	0.15	5.0		µg/L	5	12/15/2014 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141203A**	QC Batch: **R97016**			PrepDate			Analyst: **RB**
Hexavalent Chromium	130	0.32	4.0		µg/L	20	12/3/2014 05:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	120	0.030	1.0		µg/L	1	12/15/2014 02:06 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141203A** QC Batch: **R97016**				PrepDate			Analyst: **RB**
Hexavalent Chromium	130	0.32	4.0		µg/L	20	12/3/2014 05:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **ICP7_141215A** QC Batch: **48108**				PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	120	0.030	1.0		µg/L	1	12/15/2014 02:17 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-214-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 6:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141203A**	QC Batch: **R97016**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/3/2014 06:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141203A**	QC Batch: **R97016**			PrepDate			Analyst: **RB**
Hexavalent Chromium	8.0	0.080	1.0		µg/L	5	12/3/2014 06:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	7.5	0.030	1.0		µg/L	1	12/15/2014 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141203A** QC Batch: **R97016**				PrepDate			Analyst: **RB**
Hexavalent Chromium	41	0.080	1.0		µg/L	5	12/3/2014 06:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141215A** QC Batch: **48108**				PrepDate		**12/4/2014**	Analyst: **CEI**
Chromium	37	0.030	1.0		µg/L	1	12/15/2014 02:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *16-Dec-14*

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97016** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **PBW** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97016** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **LCSW** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.042	0.20	5.000	0	101	90	110				

Sample ID **N014023-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	224.735	10						225.1	0.167	20	

Sample ID **N014023-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	472.795	10	250.0	225.1	99.1	90	110				

Sample ID **N014023-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	472.050	10	250.0	225.1	98.8	90	110	472.8	0.158	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014023-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	475.320	10	250.0	223.7	101	90	110				

Sample ID **N014023-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	105.646	2.0	50.00	56.63	98.0	90	110				

Sample ID **N014023-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	235.526	4.0	100.0	133.4	102	90	110				

Sample ID **N014023-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	232.608	4.0	100.0	129.7	103	90	110				

Sample ID **N014023-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	230.544	4.0	100.0	129.6	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014023-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.015	0.20	1.000	0.02170	99.3	90	110				

Sample ID **N014023-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	31.922	1.0	25.00	7.954	95.9	90	110				

Sample ID **N014023-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97016**
Client ID: **ZZZZZZ** Batch ID: **R97016** TestNo: **EPA 218.6** Analysis Date: **12/3/2014** SeqNo: **1885089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.911	1.0	25.00	40.91	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97144** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **LCSW** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	487.986	10	500.0	0	97.6	85	115				

Sample ID **MB-R97144** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **PBW** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014056-007A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	134.835	10						121.8	10.2	20	

Sample ID **N014056-007A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	370.929	10	250.0	121.8	99.7	85	115				

Sample ID **N014056-007A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	389.562	10	250.0	121.8	107	85	115	370.9	4.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48108	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	PBW	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48108	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	LCSW	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.502	1.0	10.00	0	95.0	85	115				

Sample ID	N014023-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	ZZZZZZ	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	220.636	5.0	10.00	224.1	-34.9	75	125				S

Sample ID	N014023-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	ZZZZZZ	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890607

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	225.767	5.0	10.00	224.1	16.4	75	125	220.6	2.30	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	100	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 12:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	95	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	95	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	270	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	270	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 10:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	85	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	82	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	82	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	36	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97042** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **LCSW** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.423	5.0	100.0	0	100	85	115				
Alkalinity, Total (As CaCO3)	100.423	5.0	100.0	0	100	85	115				

Sample ID **MB-R97042** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **PBW** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014023-001C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	103.594	5.0						104.7	1.02	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	103.594	5.0						104.7	1.02	30	

Sample ID **N014023-001C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	196.617	5.0	100.0	104.7	92.0	75	125				
Alkalinity, Total (As CaCO3)	196.617	5.0	100.0	104.7	92.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014023-001C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	195.560	5.0	100.0	104.7	90.9	75	125	196.6	0.539	20	
Alkalinity, Total (As CaCO3)	195.560	5.0	100.0	104.7	90.9	75	125	196.6	0.539	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-001

Client Sample ID: MW-128-200
Collection Date: 12/1/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	12/3/2014 01:01 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	5500	25	500		mg/L	1000	12/3/2014 05:25 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	1100	3.3	50		mg/L	100	12/3/2014 08:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-004

Client Sample ID: MW-34-100-200
Collection Date: 12/1/2014 12:24:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	12/3/2014 06:03 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	5400	25	500		mg/L	1000	12/3/2014 06:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	1100	6.6	100		mg/L	200	12/3/2014 01:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-005

Client Sample ID: MW-39-100-200
Collection Date: 12/1/2014 10:08:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/3/2014 11:33 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	4800	25	500		mg/L	1000	12/3/2014 07:57 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	1400	6.6	100		mg/L	200	12/3/2014 02:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-007

Client Sample ID: MW-09-200
Collection Date: 12/2/2014 9:48:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/3/2014 11:20 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	670	5.0	100		mg/L	200	12/3/2014 08:10 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	240	0.66	10		mg/L	20	12/3/2014 02:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-008

Client Sample ID: MW-10-200
Collection Date: 12/2/2014 10:36:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	0.65	0.028	0.50		mg/L	1	12/3/2014 11:45 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	560	2.5	50		mg/L	100	12/3/2014 08:22 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	270	0.66	10		mg/L	20	12/3/2014 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-009

Client Sample ID: MW-11-200
Collection Date: 12/2/2014 8:52:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009** PrepDate Analyst: **PS**							
Bromide	0.54	0.028	0.50		mg/L	1	12/3/2014 11:58 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009** PrepDate Analyst: **PS**							
Chloride	510	5.0	100		mg/L	200	12/3/2014 05:38 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009** PrepDate Analyst: **PS**							
Sulfate	190	0.66	10		mg/L	20	12/3/2014 08:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-010

Client Sample ID: MW-121-200
Collection Date: 12/2/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	0.58	0.028	0.50		mg/L	1	12/3/2014 12:11 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	520	5.0	100		mg/L	200	12/3/2014 05:51 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	190	0.66	10		mg/L	20	12/3/2014 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-012

Client Sample ID: MW-37D-200
Collection Date: 12/2/2014 1:42:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/3/2014 12:23 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Chloride	5000	25	500		mg/L	1000	12/3/2014 09:13 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141203A** QC Batch: **R97009**				PrepDate			Analyst: **PS**
Sulfate	650	1.6	25		mg/L	50	12/3/2014 02:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R97009_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **PBW** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R97009_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **LCSW** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.558	0.50	2.500	0	102	90	110				

Sample ID **N014023-008C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **ZZZZZZ** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.656	0.50						0.6470	1.38	20	

Sample ID **N014023-008C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **ZZZZZZ** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.856	0.50	2.500	0.6470	88.4	80	120				

Sample ID **N014023-008C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **ZZZZZZ** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.863	0.50	2.500	0.6470	88.6	80	120	2.856	0.245	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R97009_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **PBW** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R97009_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **LCSW** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.444	0.50	2.500	0	97.8	90	110				

Sample ID **N014023-007C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **ZZZZZZ** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1177.800	100	500.0	667.0	102	80	120				

Sample ID **N014023-007C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **ZZZZZZ** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	672.800	100						667.0	0.866	20	

Sample ID **N014023-007C-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97009**
Client ID: **ZZZZZZ** Batch ID: **R97009** TestNo: **EPA 300.0** Analysis Date: **12/3/2014** SeqNo: **1884896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1170.800	100	500.0	667.0	101	80	120	1178	0.596	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R97009_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97009
Client ID:	PBW	Batch ID:	R97009	TestNo:	EPA 300.0			Analysis Date:	12/3/2014	SeqNo:	1884904

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R97009_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97009
Client ID:	LCSW	Batch ID:	R97009	TestNo:	EPA 300.0			Analysis Date:	12/3/2014	SeqNo:	1884905

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.999	0.50	5.000	0	100	90	110				

Sample ID	N014023-004C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97009
Client ID:	ZZZZZZ	Batch ID:	R97009	TestNo:	EPA 300.0			Analysis Date:	12/3/2014	SeqNo:	1884917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2095.600	100	1000	1060	104	80	120				

Sample ID	N014023-004C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97009
Client ID:	ZZZZZZ	Batch ID:	R97009	TestNo:	EPA 300.0			Analysis Date:	12/3/2014	SeqNo:	1884921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1065.200	100						1060	0.470	20	

Sample ID	N014023-004C-MSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97009
Client ID:	ZZZZZZ	Batch ID:	R97009	TestNo:	EPA 300.0			Analysis Date:	12/3/2014	SeqNo:	1884924

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2116.400	100	1000	1060	106	80	120	2096	0.988	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.61	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-200b
Lab Order:	N014023	**Collection Date:**	12/1/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate							Analyst: **PS**
Nitrate/Nitrite as N	0.093	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-200b
Lab Order:	N014023	**Collection Date:**	12/1/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 12:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.58	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.087	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	9.3	0.22	0.50		mg/L	10	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 10:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	10	0.22	0.50		mg/L	10	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	5.7	0.11	0.25		mg/L	5	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	5.6	0.11	0.25		mg/L	5	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.21	0.022	0.050		mg/L	1	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141212A** QC Batch: **R97146** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.8	0.044	0.10		mg/L	2	12/12/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *16-Dec-14*

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97146** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97146**
Client ID: **PBW** Batch ID: **R97146** TestNo: **SM4500-NO3** Analysis Date: **12/12/2014** SeqNo: **1890078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97146** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97146**
Client ID: **LCSW** Batch ID: **R97146** TestNo: **SM4500-NO3** Analysis Date: **12/12/2014** SeqNo: **1890079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.928	0.050	1.000	0	92.8	85	115				

Sample ID **N014023-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97146**
Client ID: **ZZZZZZ** Batch ID: **R97146** TestNo: **SM4500-NO3** Analysis Date: **12/12/2014** SeqNo: **1890082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.609	0.050						0.6093	0	20	

Sample ID **N014023-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97146**
Client ID: **ZZZZZZ** Batch ID: **R97146** TestNo: **SM4500-NO3** Analysis Date: **12/12/2014** SeqNo: **1890083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.581	0.050	1.000	0.6093	97.2	85	115				

Sample ID **N014023-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97146**
Client ID: **ZZZZZZ** Batch ID: **R97146** TestNo: **SM4500-NO3** Analysis Date: **12/12/2014** SeqNo: **1890084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.595	0.050	1.000	0.6093	98.6	85	115	1.581	0.850	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N014023-004DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97146
Client ID:	ZZZZZZ	Batch ID:	R97146	TestNo:	SM4500-NO3			Analysis Date:	12/12/2014	SeqNo:	1890088

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.644	0.050						0.5836	9.78	20	

Sample ID	N014023-004DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97146
Client ID:	ZZZZZZ	Batch ID:	R97146	TestNo:	SM4500-NO3			Analysis Date:	12/12/2014	SeqNo:	1890089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.400	0.050	1.000	0.5836	81.6	85	115				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	2000	19	100		ug/L	1	12/9/2014 05:24 PM
Calcium	140000	58	500		ug/L	1	12/9/2014 05:24 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 05:24 PM
Magnesium	5600	11	100		ug/L	1	12/9/2014 05:24 PM
Potassium	32000	420	2500		ug/L	5	12/9/2014 10:58 AM
Sodium	4000000	7500	100000		ug/L	200	12/9/2014 12:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-004

Client Sample ID: MW-34-100-200
Collection Date: 12/1/2014 12:24:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	2200	19	100		ug/L	1	12/9/2014 05:51 PM
Calcium	140000	58	500		ug/L	1	12/9/2014 05:51 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 05:51 PM
Magnesium	5600	11	100		ug/L	1	12/9/2014 05:51 PM
Potassium	30000	420	2500		ug/L	5	12/9/2014 11:02 AM
Sodium	3900000	7500	100000		ug/L	200	12/9/2014 12:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	1800	19	100		ug/L	1	12/9/2014 05:57 PM
Calcium	500000	290	2500		ug/L	5	12/9/2014 07:46 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 05:57 PM
Magnesium	65000	11	100		ug/L	1	12/9/2014 05:57 PM
Sodium	3200000	7500	100000		ug/L	200	12/9/2014 12:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	620	19	100		ug/L	1	12/9/2014 06:02 PM
Calcium	120000	58	500		ug/L	1	12/9/2014 06:02 PM
Iron	71	1.3	20		ug/L	1	12/9/2014 06:02 PM
Magnesium	27000	11	100		ug/L	1	12/9/2014 06:02 PM
Sodium	380000	940	12000		ug/L	25	12/9/2014 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-008

Client Sample ID: MW-10-200
Collection Date: 12/2/2014 10:36:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**			PrepDate	**12/8/2014**		Analyst: **CEI**
Boron	710	19	100		ug/L	1	12/9/2014 06:08 PM
Calcium	120000	58	500		ug/L	1	12/9/2014 06:08 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:08 PM
Magnesium	16000	11	100		ug/L	1	12/9/2014 06:08 PM
Sodium	390000	940	12000		ug/L	25	12/9/2014 12:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	420	19	100		ug/L	1	12/9/2014 06:24 PM
Calcium	120000	58	500		ug/L	1	12/9/2014 06:24 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:24 PM
Magnesium	17000	11	100		ug/L	1	12/9/2014 06:24 PM
Sodium	280000	940	12000		ug/L	25	12/9/2014 01:01 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-010

Client Sample ID: MW-121-200
Collection Date: 12/2/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**			PrepDate	**12/8/2014**		Analyst: **CEI**
Boron	440	19	100		ug/L	1	12/9/2014 06:30 PM
Calcium	120000	58	500		ug/L	1	12/9/2014 06:30 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:30 PM
Magnesium	17000	11	100		ug/L	1	12/9/2014 06:30 PM
Sodium	290000	940	12000		ug/L	25	12/9/2014 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	1400	19	100		ug/L	1	12/9/2014 06:36 PM
Calcium	420000	58	500		ug/L	1	12/9/2014 06:36 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:36 PM
Magnesium	18000	11	100		ug/L	1	12/9/2014 06:36 PM
Sodium	2900000	7500	100000		ug/L	200	12/9/2014 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48127** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **PBW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	52.494	500									

Sample ID **LCS2-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	20041.227	500	20000	0	100	85	115				
Sodium	19991.898	500	20000	0	100	85	115				

Sample ID **N014023-004B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49273.351	2500	20000	30480	94.0	75	125				

Sample ID **N014023-004B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	50176.231	2500	20000	30480	98.5	75	125	49270	1.82	20	

Sample ID **N014023-004B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3662430.078	100000	20000	3894000	-1160	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N014023-004B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3555096.924	100000	20000	3894000	-1700	75	125	3662000	2.97	20	S

Sample ID **N014057-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49179.722	2500	20000	30190	94.9	75	125				

Sample ID **N014057-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3370113.922	100000	20000	3328000	210	75	125				S

Sample ID **MB-48127** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **PBW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	75.918	100									
Calcium	ND	500									
Iron	2.536	20									
Magnesium	ND	100									

Sample ID **LCS1-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4462.465	100	5000	0	89.2	85	115				
Calcium	9092.933	500	10000	0	90.9	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.951	20	100.0	0	109	85	115				
Magnesium	9180.771	100	10000	0	91.8	85	115				

Sample ID **N014023-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7075.968	100	5000	1980	102	75	125				
Calcium	153646.728	500	10000	136900	167	75	125				S
Iron	94.660	20	100.0	1.460	93.2	75	125				
Magnesium	14031.943	100	10000	5619	84.1	75	125				

Sample ID **N014023-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7054.703	100	5000	1980	101	75	125	7076	0.301	20	
Calcium	153562.786	500	10000	136900	167	75	125	153600	0.0546	20	S
Iron	94.324	20	100.0	1.460	92.9	75	125	94.66	0.356	20	
Magnesium	14016.489	100	10000	5619	84.0	75	125	14030	0.110	20	

Sample ID **N014057-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6513.277	100	5000	1605	98.2	75	125				
Calcium	424229.273	500	10000	400000	242	75	125				S
Iron	90.217	20	100.0	0	90.2	75	125				
Magnesium	41381.127	100	10000	32070	93.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-001

Client Sample ID: MW-128-200
Collection Date: 12/1/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Arsenic	1.5	0.13	0.50		µg/L	5	12/15/2014 12:00 PM
Manganese	ND	0.13	2.5		µg/L	5	12/15/2014 12:00 PM
Molybdenum	86	0.76	2.5		µg/L	5	12/15/2014 12:00 PM
Selenium	ND	0.34	2.5		µg/L	5	12/15/2014 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-004

Client Sample ID: MW-34-100-200
Collection Date: 12/1/2014 12:24:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Arsenic	1.6	0.13	0.50		µg/L	5	12/15/2014 01:01 PM
Manganese	18	0.026	0.50		µg/L	1	12/15/2014 12:55 PM
Molybdenum	85	0.76	2.5		µg/L	5	12/15/2014 01:01 PM
Selenium	ND	0.34	2.5		µg/L	5	12/15/2014 01:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 10:08:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Arsenic	2.0	0.13	0.50		µg/L	5	12/15/2014 01:12 PM
Manganese	15	0.026	0.50		µg/L	1	12/15/2014 01:06 PM
Molybdenum	6.2	0.76	2.5		µg/L	5	12/15/2014 01:12 PM
Selenium	ND	0.34	2.5		µg/L	5	12/15/2014 01:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-200
Lab Order:	N014023	**Collection Date:**	12/1/2014 3:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Arsenic	12	0.13	0.50		µg/L	5	12/15/2014 01:23 PM
Manganese	21	0.026	0.50		µg/L	1	12/15/2014 01:17 PM
Molybdenum	82	0.76	2.5		µg/L	5	12/15/2014 01:23 PM
Selenium	ND	0.34	2.5		µg/L	5	12/15/2014 01:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 9:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Arsenic	1.6	0.027	0.10		µg/L	1	12/15/2014 01:33 PM
Manganese	ND	0.026	0.50		µg/L	1	12/15/2014 01:33 PM
Molybdenum	2.0	0.15	0.50		µg/L	1	12/15/2014 01:33 PM
Selenium	4.3	0.069	0.50		µg/L	1	12/15/2014 01:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014023
Project: PG&E Topock
Lab ID: N014023-008

Client Sample ID: MW-10-200
Collection Date: 12/2/2014 10:36:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Antimony	ND	0.18	0.50		µg/L	1	12/15/2014 01:45 PM
Arsenic	3.2	0.027	0.10		µg/L	1	12/15/2014 01:45 PM
Barium	49	0.030	1.0		µg/L	1	12/15/2014 01:45 PM
Beryllium	ND	0.010	0.50		µg/L	1	12/15/2014 01:45 PM
Cadmium	ND	0.013	0.50		µg/L	1	12/15/2014 01:45 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/15/2014 01:45 PM
Copper	ND	0.040	1.0		µg/L	1	12/15/2014 01:45 PM
Lead	ND	0.011	1.0		µg/L	1	12/15/2014 01:45 PM
Manganese	ND	0.026	0.50		µg/L	1	12/15/2014 01:45 PM
Molybdenum	23	0.15	0.50		µg/L	1	12/15/2014 01:45 PM
Nickel	ND	0.032	1.0		µg/L	1	12/15/2014 01:45 PM
Selenium	5.4	0.069	0.50		µg/L	1	12/15/2014 01:45 PM
Silver	ND	0.094	0.50		µg/L	1	12/15/2014 01:45 PM
Thallium	ND	0.0080	0.50		µg/L	1	12/15/2014 01:45 PM
Vanadium	18	0.16	1.0		µg/L	1	12/15/2014 01:45 PM
Zinc	ND	0.23	10		µg/L	1	12/15/2014 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216A**	QC Batch: **48108**				PrepDate	**12/4/2014**	Analyst: **CEI**
Arsenic	1.5	0.027	0.10		µg/L	1	12/16/2014 11:33 AM
Manganese	ND	0.026	0.50		µg/L	1	12/15/2014 02:06 PM
Molybdenum	6.3	0.15	0.50		µg/L	1	12/15/2014 02:06 PM
Selenium	4.3	0.069	0.50		µg/L	1	12/15/2014 02:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216A**	QC Batch: **48108**			PrepDate	**12/4/2014**		Analyst: **CEI**
Arsenic	1.4	0.027	0.10		µg/L	1	12/16/2014 11:38 AM
Manganese	ND	0.026	0.50		µg/L	1	12/15/2014 02:17 PM
Molybdenum	6.2	0.15	0.50		µg/L	1	12/15/2014 02:17 PM
Selenium	4.2	0.069	0.50		µg/L	1	12/15/2014 02:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141215A**	QC Batch: **48108**				PrepDate	**12/4/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	12/15/2014 02:28 PM
Molybdenum	47	0.76	2.5		µg/L	5	12/15/2014 02:34 PM
Selenium	ND	0.34	2.5		µg/L	5	12/15/2014 02:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216A**	QC Batch: **48108**				PrepDate	**12/4/2014**	Analyst: **CEI**
Arsenic	1.4	0.027	0.10		µg/L	1	12/16/2014 11:44 AM
Manganese	ND	0.026	0.50		µg/L	1	12/15/2014 02:39 PM
Molybdenum	22	0.76	2.5		µg/L	5	12/15/2014 02:45 PM
Selenium	3.7	0.069	0.50		µg/L	1	12/15/2014 02:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-48108	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	PBW	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	0.381	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID	LCS-48108	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	LCSW	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.045	0.50	10.00	0	100	85	115				
Arsenic	9.748	0.10	10.00	0	97.5	85	115				
Barium	100.340	1.0	100.0	0	100	85	115				
Beryllium	9.195	0.50	10.00	0	92.0	85	115				
Cadmium	9.863	0.50	10.00	0	98.6	85	115				
Cobalt	9.570	0.50	10.00	0	95.7	85	115				
Copper	9.823	1.0	10.00	0	98.2	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-48108	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	LCSW	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.944	1.0	10.00	0	99.4	85	115				
Manganese	97.856	0.50	100.0	0	97.9	85	115				
Molybdenum	9.632	0.50	10.00	0	96.3	85	115				
Nickel	9.296	1.0	10.00	0	93.0	85	115				
Selenium	9.253	0.50	10.00	0	92.5	85	115				
Silver	9.981	0.50	10.00	0	99.8	85	115				
Thallium	9.620	0.50	10.00	0	96.2	85	115				
Vanadium	10.204	1.0	10.00	0	102	85	115				
Zinc	95.422	10	100.0	0	95.4	85	115				

Sample ID	N014023-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/4/2014	RunNo:	97163
Client ID:	ZZZZZZ	Batch ID:	48108	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/15/2014	SeqNo:	1890733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.782	2.5	10.00	0	108	75	125				
Arsenic	11.754	0.50	10.00	1.457	103	75	125				
Barium	130.103	5.0	100.0	20.74	109	75	125				
Beryllium	10.384	2.5	10.00	0	104	75	125				
Cadmium	9.144	2.5	10.00	0	91.4	75	125				
Cobalt	8.613	2.5	10.00	0	86.1	75	125				
Copper	ND	5.0	10.00	0	0	75	125				S
Manganese	ND	2.5	100.0	0	0	75	125				S
Molybdenum	91.826	2.5	10.00	85.60	62.3	75	125				S
Nickel	7.974	5.0	10.00	0	79.7	75	125				
Selenium	9.145	2.5	10.00	0	91.4	75	125				
Silver	9.503	2.5	10.00	0	95.0	75	125				
Vanadium	11.699	5.0	10.00	1.444	103	75	125				
Zinc	85.483	50	100.0	0	85.5	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014023-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/4/2014** RunNo: **97163**
Client ID: **ZZZZZZ** Batch ID: **48108** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/15/2014** SeqNo: **1890737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.993	2.5	10.00	0	110	75	125	10.78	1.94	20	
Arsenic	11.412	0.50	10.00	1.457	99.6	75	125	11.75	2.95	20	
Barium	129.997	5.0	100.0	20.74	109	75	125	130.1	0.0818	20	
Beryllium	10.203	2.5	10.00	0	102	75	125	10.38	1.76	20	
Cadmium	9.126	2.5	10.00	0	91.3	75	125	9.144	0.190	20	
Cobalt	8.748	2.5	10.00	0	87.5	75	125	8.613	1.56	20	
Copper	ND	5.0	10.00	0	0	75	125	0	0	20	S
Manganese	ND	2.5	100.0	0	0	75	125	0	0	20	S
Molybdenum	90.884	2.5	10.00	85.60	52.9	75	125	91.83	1.03	20	S
Nickel	8.098	5.0	10.00	0	81.0	75	125	7.974	1.54	20	
Selenium	9.536	2.5	10.00	0	95.4	75	125	9.145	4.19	20	
Silver	9.585	2.5	10.00	0	95.8	75	125	9.503	0.855	20	
Vanadium	12.107	5.0	10.00	1.444	107	75	125	11.70	3.43	20	
Zinc	86.937	50	100.0	0	86.9	75	125	85.48	1.69	20	

Sample ID **N014023-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/4/2014** RunNo: **97163**
Client ID: **ZZZZZZ** Batch ID: **48108** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/15/2014** SeqNo: **1890762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.651	25	10.00	0	107	75	125				
Thallium	11.836	12	10.00	0.5833	113	75	125				

Sample ID **N014023-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/4/2014** RunNo: **97163**
Client ID: **ZZZZZZ** Batch ID: **48108** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/15/2014** SeqNo: **1890763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.573	25	10.00	0	106	75	125	10.65	0	20	
Thallium	11.866	12	10.00	0.5833	113	75	125	11.84	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-200
Lab Order:	N014023	**Collection Date:**	12/2/2014 10:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014023-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141215A**	QC Batch: **48184**			PrepDate	**12/15/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/15/2014 03:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID	MB-48184	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2014	RunNo:	97160
Client ID:	PBW	Batch ID:	48184	TestNo:	EPA 7470A			Analysis Date:	12/15/2014	SeqNo:	1890535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID	LCS-48184	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2014	RunNo:	97160
Client ID:	LCSW	Batch ID:	48184	TestNo:	EPA 7470A			Analysis Date:	12/15/2014	SeqNo:	1890536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.448	0.20	5.000	0	89.0	85	115				

Sample ID	N014023-008B-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2014	RunNo:	97160
Client ID:	ZZZZZZ	Batch ID:	48184	TestNo:	EPA 7470A			Analysis Date:	12/15/2014	SeqNo:	1890537

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.604	0.20	5.000	0	92.1	75	125				

Sample ID	N014023-008B-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2014	RunNo:	97160
Client ID:	ZZZZZZ	Batch ID:	48184	TestNo:	EPA 7470A			Analysis Date:	12/15/2014	SeqNo:	1890538

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.589	0.20	5.000	0	91.8	75	125	4.604	0.321	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/2/2014 3:40:00 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/4/2014
COC Number: 3

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-128-200	12/1/2014	7:00	Water	X		X		X		X	X	X	X	X	X	X	X	X014023 - 01	5	
MW-32-035-200b	12/1/2014	9:00	Water													X		-02	1	
MW-34-080-200b	12/1/2014	11:44	Water													X		-03	1	
MW-34-100-200	12/1/2014	12:24	Water	X		X		X		X	X	X	X	X	X	X	X	-04	5	
MW-39-100-200	12/1/2014	10:08	Water	X		X	X			X	X	X	X	X	X	X	X	-05	5	
MW-72-080-200	12/1/2014	15:12	Water	X		X				X	X		X			X		-06	4	
MW-09-200	12/2/2014	9:48	Water		X	X	X			X	X	X	X	X	X	X		-07	4	
MW-10-200	12/2/2014	10:36	Water		X		X		X	X	X	X	X	X	X	X		-08	4	
MW-11-200	12/2/2014	8:52	Water	X		X	X			X	X	X	X	X	X	X		-09	4	
MW-121-200	12/2/2014	7:00	Water	X		X	X			X	X	X	X	X	X	X		-10	4	
MW-214-200	12/2/2014	6:35	Water	X														-11	1	
MW-37D-200	12/2/2014	13:42	Water	X			X			X	X	X	X	X	X	X		-12	4	
MW-73-080-200	12/2/2014	7:05	Water	X		X				X	X		X			X		-13	4	

	Signatures	Date/Time
Approved by		12-2-14
Sampled by		1544
Relinquished by		
Received by		12/2/14/1544
Relinquished by		12/2/14/1600
Received by		12/2/14

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.6 °C / IR#2 9 °C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marion

Special Instructions:

Nov 3 to Dec 18, 2014

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

12/2/2014 3:40:01 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/4/2014
COC Number: 3

Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly		
Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C		
Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA		
Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	28	NA		
DATE TIME Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)	Number of Containers	COMMENTS
TOTAL NUMBER OF CONTAINERS															46	

	Signatures	Date/Time
Approved by		12-2-14
Sampled by		1544
Relinquished by		
Received by		12/2/14 / 1544
Relinquished by		12/2/14
Received by		12/2/14 1800

Shipping Details
Method of Shipment: courier
On Ice: yes / no
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

12/2/2014 3:40:00 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/4/2014
COC Number: 3

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly	* full T22 List: Sb, As, Ba, Be, Cd, Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, V, Zn	Number of Containers	COMMENTS
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	T22:SbAsBaBeCdCoCuPbHgMoNi Field Filtered	Metals (6010B/6020A/7470Adis)	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)			
MW-128-200	12/1/2014	7:00	Water	X		X		X			X	X	X	X	X	X	X	X		5	
MW-32-035-200b	12/1/2014	9:00	Water													X				1	
MW-34-080-200b	12/1/2014	11:44	Water													X				1	
MW-34-100-200	12/1/2014	12:24	Water	X		X		X			X	X	X	X	X	X	X	X		5	
MW-39-100-200	12/1/2014	10:08	Water	X		X	X				X	X	X	X	X	X	X	X		5	
MW-72-080-200	12/1/2014	15:12	Water	X		X					X	X		X			X			4	
MW-09-200	12/2/2014	9:48	Water		X	X	X				X	X	X	X	X	X	X			4	
MW-10-200	12/2/2014	10:36	Water		X		X			X	X	X	X	X	X	X	X			4	
MW-11-200	12/2/2014	8:52	Water	X		X	X				X	X	X	X	X	X	X			4	
MW-121-200	12/2/2014	7:00	Water	X		X	X				X	X	X	X	X	X	X			4	
MW-214-200	12/2/2014	6:35	Water	X																1	
MW-37D-200	12/2/2014	13:42	Water	X			X				X	X	X	X	X	X	X			4	
MW-73-080-200	12/2/2014	7:05	Water	X		X					X	X		X			X			4	

	Signatures	Date/Time
Approved by		12-2-14
Sampled by		1544
Relinquished by		
Received by		12/2/14/1544
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody
and
Marlon

Special Instructions:

Nov 3 to Dec 18, 2014

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/2/2014	Workorder:	N014023
Rep sample Temp (Deg C):	1.6, 1.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 12/04/14

Reviewed By: gvg 12/08/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:
Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

03-Dec-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N014023-001E / MW-128-200	Water	12/1/2014 7:00:00 AM	8OZP	1		
N014023-004E / MW-34-100-200	Water	12/1/2014 12:24:00 PM	8OZP	1		
N014023-005E / MW-39-100-200	Water	12/1/2014 10:08:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14023A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7720 8338 3422

	Date/Time		Date/Time
Relinquished by: jpg 12/03/14		**Received by:**	
Relinquished by:		**Received by:**	

SAMPLE CALCULATION

METHOD: 2540C
TEST NAME: Total Filterable Solids
MATRIX: Water

FORMULA:

Calculate TDS, in mg/L, in the original sample as follows:

$$\text{TDS, in mg/L} = \frac{(A-B)*1{,}000{,}000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014023-001C** TDS in mg/L is calculated as follows:

$$\text{TDS (mg/L)} = \frac{(30.9600-30.8613)*1000000}{10}$$
$$= 9870$$

Reporting result in two significant figures,

TDS=9900

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/5/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48091	100	53.8192	53.8193	1	1	1		
LCS-48091	100	54.8407	54.9406	999	1	999		
N014002-001F	100	55.7342	55.7656	314	1	314	483	0.650
N014002-001F DUP	100	57.0886	57.1202	316	1	316	483	0.654
N014023-001C	10	30.8613	30.96	987	10	9870	16580	0.595
N014023-004C	10	31.3341	31.4333	992	10	9920	15560	0.638
N014023-005C	10	30.9883	31.0832	949	10	9490	14510	0.654
N014023-007C	50	60.6262	60.7106	844	2	1688	2690	0.628
N014023-008C	60	60.8338	60.9263	925	1.66667	1541.66975	2450	0.629

12/8/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/5/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48092	100	55.3693	55.3689	-4	1	-4		
LCS-48092	100	63.7896	63.8838	942	1	942		
N014023-009C	60	60.8744	60.956	816	1.66667	1360.00272	2110	0.645
N014023-009C DUP	60	60.5233	60.6046	813	1.66667	1355.00271	2110	0.642
N014023-010C	60	61.403	61.4819	789	1.66667	1315.00263	2110	0.623
N014023-012C	10	30.2057	30.2796	739	10	7390	14260	0.518
N014026-001F	100	53.9307	53.9515	208	1	208	314	0.662
N014027-001F	100	62.9816	63.027	454	1	454	450	1.009

12/8/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014023-005A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 5.6627 * 10

= 56.627

Reporting result in two significant figures,

Cr^{+6}, µg/L = 57

12/16/2014

Sample ID: **N014023-001C @ pH 7.85**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.825mL)

= **0.02114 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.95) (0.02114 N) (1) * 1000

=104.643 **mg/L**

Reporting results in two significant figures,

= 100 **mg/L** as CaCO3

for 12/16/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02114 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.95 mL) (0.02114) (1) * 1000

= 104.643 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 104.643 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 100 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014023-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 11.072 * 100

= 1107.2

Reporting result in two significant figures,

Sulfate, mg/L = 1100

12/16/2014

SAMPLE CALCULATION

METHOD: EPA 3500_CrBPGE
TEST NAME: Hexavalent Chromium
MATRIX: WATER

FORMULA:

Calculate the Hexavalent Chromium, in µg/L, in the original sample as follows:

Hexavalent Chromium, µg/L = A*DF

Where:
A= mg/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N014023-007A,** concentration in mg/L is calculated as follows:

Hexavalent Chromium, µg/L = 214.056 *1

= 214.056 µg/L

Reporting result in two significant figures,

Hexavalent Chromium = 210 µg/L

12/16/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Potassium concentration, in ug/L, in the original sample as follows:

Potassium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014023-001B**, the concentration in ug/L is calculated as follows:

Potassium, ug/L = 6.300370459 * 5 * (25/25) * 1000

= 31501.852295

Reporting results in two significant figures,

Potassium, ug/L = 32000

12/16/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014023
Test Method: EPA 6010
Analysis Date: 12/09/14

Matrix: Water
Batch No.: 48127

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

~~Dilution test is not applicable to K. The calculated concentration is <25RL.~~

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014023-004B-DT 25X	Potassium	ug/L	30140.00085	NA	30478.71932	1.11%	10
N014023-004B-DT 1000X	Sodium	ug/L	3983276.744	PASS	3894398.502	2.28%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014023
Test Method: EPA 6010
Analysis Date: 12/09/14

Matrix: Water
Batch No.: 48127

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed to Mg. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014023-001B-DT 5X	Boron	ug/L	2376.322008	NA	1980.002123	20.02%	10
N014023-001B-DT 5X	Calcium	ug/L	142219.9397	PASS	136899.5624	3.89%	10
N014023-001B-DT 5X	Iron	ug/L	0	NA	1.459793473	100.00%	10
N014023-001B-DT 5X	Magnesium	ug/L	6879.55702	FAIL	5619.288835	22.43%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N014023-004B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	51237.612	2500	20000	30480	104	80	120				

Sample ID **N014023-004B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	4646655.972	100000	20000	3894000	3760	80	120				S

Sample ID **N014023-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6913.434	100	5000	1980	98.7	80	120				
Calcium	143613.567	500	10000	136900	67.1	80	120				S
Iron	94.932	20	100.0	1.460	93.5	80	120				
Magnesium	13681.807	100	10000	5619	80.6	80	120				

DT of Na @1000x and Ca @5x are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 12/16/2014

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014023-008B,** the concentration in ug/L is calculated as follows:

Barium, ug/L = 48.527497531037* 1 * (25/25)

= 48.527497531037

Reporting results in two significant figures,

Barium, ug/L = 49

12/16/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014023
Test Method: EPA 6020
Analysis Date: 12/15/2014

Matrix: Water
Batch No.: 48108

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to all analytes except Cr and Mo. The calculated concentrations are < 25X RL's

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014023-001B-DT 25X	Antimony	µg/L	0	NA	0		10
N014023-001B-DT 25X	Arsenic	µg/L	1.550734981	NA	1.45703355	6.43%	10
N014023-001B-DT 25X	Barium	µg/L	22.07880408	NA	20.74474743	6.43%	10
N014023-001B-DT 25X	Beryllium	µg/L	0	NA	0		10
N014023-001B-DT 25X	Cadmium	µg/L	0	NA	0		10
N014023-001B-DT 25X	Cobalt	µg/L	0	NA	0		10
N014023-001B-DT 25X	Copper	µg/L	0	NA	0		10
N014023-001B-DT 25X	Chromium	µg/L	239.29075	PASS	224.1310642	6.76%	10
N014023-001B-DT 125X	Lead	µg/L	0	NA	0		10
N014023-001B-DT 25X	Manganese	µg/L	0	NA	0		10
N014023-001B-DT 25X	Molybdenum	µg/L	84.21421715	PASS	85.59750336	1.62%	10
N014023-001B-DT 25X	Nickel	µg/L	0	NA	0		10
N014023-001B-DT 25X	Selenium	µg/L	0	NA	0		10
N014023-001B-DT 25X	Silver	µg/L	0	NA	0		10
N014023-001B-DT 125X	Thallium	µg/L	0	NA	0.583293669	100.00%	10
N014023-001B-DT 25X	Vanadium	µg/L	0	NA	1.444280165	100.00%	10
N014023-001B-DT 25X	Zinc	µg/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014023-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97163**
Client ID: **ZZZZZZ** Batch ID: **48108** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/15/2014** SeqNo: **1890731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.650	2.5	10.00	0	107	80	120				
Arsenic	11.777	0.50	10.00	1.457	103	80	120				
Barium	130.468	5.0	100.0	20.74	110	80	120				
Beryllium	10.503	2.5	10.00	0	105	80	120				
Cadmium	8.761	2.5	10.00	0	87.6	80	120				
Cobalt	8.457	2.5	10.00	0	84.6	80	120				
Copper	ND	5.0	10.00	0	0	80	120				S
Manganese	ND	2.5	100.0	0	0	80	120				S
Molybdenum	99.108	2.5	10.00	85.60	135	80	120				S
Nickel	7.987	5.0	10.00	0	79.9	80	120				S
Selenium	9.087	2.5	10.00	0	90.9	80	120				
Silver	9.314	2.5	10.00	0	93.1	80	120				
Vanadium	12.195	5.0	10.00	1.444	108	80	120				
Zinc	85.160	50	100.0	0	85.2	80	120				

Sample ID **N014023-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97163**
Client ID: **ZZZZZZ** Batch ID: **48108** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/15/2014** SeqNo: **1890761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.727	25	10.00	0	107	80	120				
Thallium	11.863	12	10.00	0.5833	113	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014023
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014023-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**97163**	
Client ID:	**ZZZZZZ**	Batch ID:	**48108**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/15/2014**		SeqNo:	**1890601**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	240.130	5.0	10.00	224.1	160	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

Work Order No.:	**N014023**
Test Method:	**EPA 7470**
Matrix:	**WATER**

FORMULA:

Calculate the Mercury concentration in ug/L in the original sample as follows:

Hg = [A] [DF]

where:

A = ug/L, instrument calculated concentration
DF = dilution factor

For: **N014023-008B**

The concentration in ug/L is calculated as follows:

Hg = [A] [DF]

Hg = [-0.00090] [1]

Hg = **-0.00090** ug/L

Since result is less than reporting limit.

Hg = ND ug/L

December 18, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014056

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 04, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *18-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014056

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen and Deuterium were subcontracted to Zymax- Escondido,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N014056-012, N014056-013 and N014056-014 due to matrix spike not meeting peak retention time criteria possibly due to matrix interference. Matrix spike was analyzed with dilution and retention time met method criteria. Samples were reported at dilution that meet matrix spike peak retention time criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014056-006 and N014056-007 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014023-004B-MS, N014023-004B-MSD, N014023-001B-MS, N014023-001B-MSD, N014057-001B-MS and N014057-002B-MS are outside recovery criteria for Sodium and Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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CASE NARRATIVE

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014056-001B-MS and N014056-001B-MSD are outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary for some analytes on samples N014056-007, N014056-012, N014056-013 due to failed Internal Standard when samples were analyzed at no dilution possibly due to matrix interference.

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ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014056
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014056-001A	MW-25-200	Water	12/2/2014 2:55:00 PM	12/4/2014	12/18/2014
N014056-001B	MW-25-200	Water	12/2/2014 2:55:00 PM	12/4/2014	12/18/2014
N014056-001C	MW-25-200	Water	12/2/2014 2:55:00 PM	12/4/2014	12/18/2014
N014056-001D	MW-25-200	Water	12/2/2014 2:55:00 PM	12/4/2014	12/18/2014
N014056-001E	MW-25-200	Water	12/2/2014 2:55:00 PM	12/4/2014	12/18/2014
N014056-002A	MW-70-105-200	Water	12/2/2014 12:18:00 PM	12/4/2014	12/18/2014
N014056-002B	MW-70-105-200	Water	12/2/2014 12:18:00 PM	12/4/2014	12/18/2014
N014056-002C	MW-70-105-200	Water	12/2/2014 12:18:00 PM	12/4/2014	12/18/2014
N014056-002D	MW-70-105-200	Water	12/2/2014 12:18:00 PM	12/4/2014	12/18/2014
N014056-003A	MW-215-200	Water	12/3/2014 6:43:00 AM	12/4/2014	12/18/2014
N014056-004A	MW-216-200	Water	12/3/2014 6:40:00 AM	12/4/2014	12/18/2014
N014056-005A	MW-31-060-200	Water	12/3/2014 3:16:00 PM	12/4/2014	12/18/2014
N014056-005B	MW-31-060-200	Water	12/3/2014 3:16:00 PM	12/4/2014	12/18/2014
N014056-005C	MW-31-060-200	Water	12/3/2014 3:16:00 PM	12/4/2014	12/18/2014
N014056-005D	MW-31-060-200	Water	12/3/2014 3:16:00 PM	12/4/2014	12/18/2014
N014056-005E	MW-31-060-200	Water	12/3/2014 3:16:00 PM	12/4/2014	12/18/2014
N014056-006A	MW-65-160-200	Water	12/3/2014 12:36:00 PM	12/4/2014	12/18/2014
N014056-006B	MW-65-160-200	Water	12/3/2014 12:36:00 PM	12/4/2014	12/18/2014
N014056-006C	MW-65-160-200	Water	12/3/2014 12:36:00 PM	12/4/2014	12/18/2014
N014056-006D	MW-65-160-200	Water	12/3/2014 12:36:00 PM	12/4/2014	12/18/2014
N014056-007A	MW-65-225-200	Water	12/3/2014 1:14:00 PM	12/4/2014	12/18/2014
N014056-007B	MW-65-225-200	Water	12/3/2014 1:14:00 PM	12/4/2014	12/18/2014
N014056-007C	MW-65-225-200	Water	12/3/2014 1:14:00 PM	12/4/2014	12/18/2014
N014056-007D	MW-65-225-200	Water	12/3/2014 1:14:00 PM	12/4/2014	12/18/2014
N014056-008A	MW-217-200	Water	12/4/2014 7:03:00 AM	12/4/2014	12/18/2014
N014056-009A	MW-218-200	Water	12/4/2014 7:00:00 AM	12/4/2014	12/18/2014
N014056-010A	MW-219-200	Water	12/4/2014 2:52:00 PM	12/4/2014	12/18/2014
N014056-011A	MW-220-200	Water	12/4/2014 2:50:00 PM	12/4/2014	12/18/2014
N014056-012A	MW-24BR-200	Water	12/4/2014 8:48:00 AM	12/4/2014	12/18/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014056
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014056-012B	MW-24BR-200	Water	12/4/2014 8:48:00 AM	12/4/2014	12/18/2014
N014056-012C	MW-24BR-200	Water	12/4/2014 8:48:00 AM	12/4/2014	12/18/2014
N014056-012D	MW-24BR-200	Water	12/4/2014 8:48:00 AM	12/4/2014	12/18/2014
N014056-013A	MW-60BR-245-200	Water	12/4/2014 7:48:00 AM	12/4/2014	12/18/2014
N014056-013B	MW-60BR-245-200	Water	12/4/2014 7:48:00 AM	12/4/2014	12/18/2014
N014056-013C	MW-60BR-245-200	Water	12/4/2014 7:48:00 AM	12/4/2014	12/18/2014
N014056-013D	MW-60BR-245-200	Water	12/4/2014 7:48:00 AM	12/4/2014	12/18/2014
N014056-014A	PGE-07BR-200	Water	12/4/2014 9:18:00 AM	12/4/2014	12/18/2014
N014056-014B	PGE-07BR-200	Water	12/4/2014 9:18:00 AM	12/4/2014	12/18/2014
N014056-014C	PGE-07BR-200	Water	12/4/2014 9:18:00 AM	12/4/2014	12/18/2014

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 2:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	3400	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 3:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	2700	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	3400	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24BR-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	PGE-07BR-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 9:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014056-014C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97040**
Client ID: **ZZZZZZ** Batch ID: **R97040** TestNo: **EPA 120.1** Analysis Date: **12/5/2014** SeqNo: **1885625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17250.000	0.10						17210	0.232	10	

Sample ID **N014052-001B DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97040**
Client ID: **ZZZZZZ** Batch ID: **R97040** TestNo: **EPA 120.1** Analysis Date: **12/5/2014** SeqNo: **1893449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1094.000	0.10						1093	0.0914	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 2:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141208A**	QC Batch: **48129**				PrepDate	**12/8/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	970	10	10		mg/L	1	12/8/2014 08:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 3:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141208A**	QC Batch: **48129**				PrepDate	**12/8/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	12/8/2014 08:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141208A**	QC Batch: **48129**				PrepDate	**12/8/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	2400	25	25		mg/L	1	12/8/2014 08:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141208A**	QC Batch: **48129**				PrepDate	**12/8/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/8/2014 08:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48129** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/8/2014** RunNo: **97149**
Client ID: **PBW** Batch ID: **48129** TestNo: **SM2540C** Analysis Date: **12/8/2014** SeqNo: **1890147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48129** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/8/2014** RunNo: **97149**
Client ID: **LCSW** Batch ID: **48129** TestNo: **SM2540C** Analysis Date: **12/8/2014** SeqNo: **1890148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	944.000	10	1000	0	94.4	80	120				

Sample ID **N014056-006C-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/8/2014** RunNo: **97149**
Client ID: **ZZZZZZ** Batch ID: **48129** TestNo: **SM2540C** Analysis Date: **12/8/2014** SeqNo: **1890155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	2327.500	25						2358	1.28	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 2:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	140	0.32	4.0		µg/L	20	12/8/2014 03:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Chromium	130	0.030	1.0		µg/L	1	12/16/2014 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	130	0.32	4.0		µg/L	20	12/8/2014 04:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	120	0.030	1.0		µg/L	1	12/16/2014 02:32 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-215-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 6:43:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/8/2014 05:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-216-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 6:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/8/2014 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 3:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141211E**	QC Batch: **R97144**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	600	1.4	10		µg/L	1	12/11/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	660	0.15	5.0		µg/L	5	12/16/2014 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A** QC Batch: **R97107** PrepDate							Analyst: **RB**
Hexavalent Chromium	97	0.32	4.0		µg/L	20	12/8/2014 06:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141216C** QC Batch: **48126** PrepDate **12/8/2014**							Analyst: **CEI**
Chromium	92	0.030	1.0		µg/L	1	12/16/2014 03:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141211E**	QC Batch: **R97144**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	120	1.4	10		µg/L	1	12/11/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	130	0.030	1.0		µg/L	1	12/16/2014 03:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-217-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 7:03:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/8/2014 04:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-218-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/8/2014 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-219-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/8/2014 06:04 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-220-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 2:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/8/2014 06:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24BR-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141208A**	QC Batch: **R97107**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/8/2014 07:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/16/2014 03:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141208A** QC Batch: **R97107** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/8/2014 08:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141216C** QC Batch: **48126** PrepDate **12/8/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/16/2014 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	PGE-07BR-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 9:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141209A**	QC Batch: **R97080**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/9/2014 05:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/16/2014 03:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97080** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **PBW** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97080** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **LCSW** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.982	0.20	5.000	0	99.6	90	110				

Sample ID **N014087-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.062	0.20						8.014	0.601	20	

Sample ID **N014087-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.096	0.20	5.000	8.014	102	90	110				

Sample ID **N014087-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.335	0.20	5.000	8.014	106	90	110	13.10	1.81	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014087-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.484	0.20	5.000	7.411	101	90	110				

Sample ID **N014087-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.104	0.20	5.000	7.252	97.0	90	110				

Sample ID **N014087-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.322	0.20	5.000	9.321	100	90	110				

Sample ID **N014090-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.564	0.20	5.000	1.558	100	90	110				

Sample ID **N014057-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.574	4.0	100.0	157.6	97.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014057-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.730	4.0	100.0	72.81	98.9	90	110				

Sample ID **N014057-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.940	0.20	5.000	7.002	98.8	90	110				

Sample ID **N014057-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.342	0.20	5.000	7.571	95.4	90	110				

Sample ID **N014089-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.08230	102	90	110				

Sample ID **N014056-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.906	1.0	5.000	0	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97107** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **PBW** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97107** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **LCSW** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.806	0.20	5.000	0	96.1	90	110				

Sample ID **N014056-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.108	0.20	1.000	0.1361	97.2	90	110				

Sample ID **N014056-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	135.980	4.0						136.1	0.0720	20	

Sample ID **N014056-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	235.798	4.0	100.0	136.1	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014056-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	236.906	4.0	100.0	136.1	101	90	110	235.8	0.469	20	

Sample ID **N014056-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	233.238	4.0	100.0	132.4	101	90	110				

Sample ID **N014056-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0.05650	101	90	110				

Sample ID **N014056-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0.04260	95.4	90	110				

Sample ID **N014056-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.04900	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014056-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0.05140	99.9	90	110				

Sample ID **N014056-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0.03510	104	90	110				

Sample ID **N014056-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.156	4.0	100.0	97.11	101	90	110				

Sample ID **N014056-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.056	1.0	5.000	0	101	90	110				

Sample ID **N014056-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97107**
Client ID: **ZZZZZZ** Batch ID: **R97107** TestNo: **EPA 218.6** Analysis Date: **12/8/2014** SeqNo: **1888628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.729	1.0	5.000	0	94.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97144** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **LCSW** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	487.986	10	500.0	0	97.6	85	115				

Sample ID **MB-R97144** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **PBW** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014056-007A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	134.835	10						121.8	10.2	20	

Sample ID **N014056-007A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	370.929	10	250.0	121.8	99.7	85	115				

Sample ID **N014056-007A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	389.562	10	250.0	121.8	107	85	115	370.9	4.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-48126** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **PBW** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-48126** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **LCSW** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.651	1.0	10.00	0	96.5	85	115				

Sample ID **N014056-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	136.676	1.0	20.00	130.0	33.6	75	125				S

Sample ID **N014056-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	137.200	1.0	20.00	130.0	36.2	75	125	136.7	0.383	20	S

Sample ID **N014057-004B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.233	1.0	20.00	6.716	87.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 2:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	150	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 3:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	130	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	56	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	56	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97042** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **LCSW** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.423	5.0	100.0	0	100	85	115				
Alkalinity, Total (As CaCO3)	100.423	5.0	100.0	0	100	85	115				

Sample ID **MB-R97042** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **PBW** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014023-001C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	103.594	5.0						104.7	1.02	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	103.594	5.0						104.7	1.02	30	

Sample ID **N014023-001C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	196.617	5.0	100.0	104.7	92.0	75	125				
Alkalinity, Total (As CaCO3)	196.617	5.0	100.0	104.7	92.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014023-001C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	195.560	5.0	100.0	104.7	90.9	75	125	196.6	0.539	20	
Alkalinity, Total (As CaCO3)	195.560	5.0	100.0	104.7	90.9	75	125	196.6	0.539	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014056
Project: PG&E Topock
Lab ID: N014056-001

Client Sample ID: MW-25-200
Collection Date: 12/2/2014 2:55:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/5/2014 07:41 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Chloride	350	1.2	25		mg/L	50	12/5/2014 11:03 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Sulfate	140	0.66	10		mg/L	20	12/5/2014 09:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014056
Project: PG&E Topock
Lab ID: N014056-005

Client Sample ID: MW-31-060-200
Collection Date: 12/3/2014 3:16:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055** PrepDate Analyst: **PS**							
Bromide	ND	0.028	0.50		mg/L	1	12/5/2014 06:38 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055** PrepDate Analyst: **PS**							
Chloride	790	5.0	100		mg/L	200	12/5/2014 08:57 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055** PrepDate Analyst: **PS**							
Sulfate	210	0.66	10		mg/L	20	12/5/2014 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014056
Project: PG&E Topock
Lab ID: N014056-006

Client Sample ID: MW-65-160-200
Collection Date: 12/3/2014 12:36:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	12/5/2014 07:03 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Chloride	900	5.0	100		mg/L	200	12/5/2014 10:13 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Sulfate	430	1.6	25		mg/L	50	12/5/2014 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014056
Project: PG&E Topock
Lab ID: N014056-007

Client Sample ID: MW-65-225-200
Collection Date: 12/3/2014 1:14:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/5/2014 07:16 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Chloride	5200	25	500		mg/L	1000	12/5/2014 11:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Sulfate	870	3.3	50		mg/L	100	12/5/2014 11:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R97055_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **PBW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R97055_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **LCSW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.500	0.50	2.500	0	100	90	110				

Sample ID **N014056-005C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.158	0.50						0.1740	0	20	

Sample ID **N014056-005C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.340	0.50	2.500	0.1740	86.6	80	120				

Sample ID **N014056-005C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.294	0.50	2.500	0.1740	84.8	80	120	2.340	1.99	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R97055_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	PBW	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886293

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R97055_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	LCSW	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.386	0.50	2.500	0	95.4	90	110				

Sample ID	N014053-001B-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886300

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	81.940	10						83.08	1.38	20	

Sample ID	N014053-001B-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.820	10	50.00	83.08	99.5	80	120				

Sample ID	N014053-001B-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886302

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.680	10	50.00	83.08	99.2	80	120	132.8	0.105	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N014056-005C-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886308

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	740.800	100						786.8	6.02	20	

Sample ID	N014056-005C-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1260.000	100	500.0	786.8	94.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R97055_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **PBW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R97055_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **LCSW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.018	0.50	5.000	0	100	90	110				

Sample ID **N014053-001B-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	185.240	10						184.8	0.249	20	

Sample ID **N014053-001B-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	288.260	10	100.0	184.8	103	80	120				

Sample ID **N014053-001B-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	287.400	10	100.0	184.8	103	80	120	288.3	0.299	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N014056-001C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886385

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	142.720	10						144.8	1.47	20	

Sample ID	N014056-001C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	245.720	10	100.0	144.8	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 2:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate							Analyst: **PS**
Nitrate/Nitrite as N	8.9	0.22	0.50		mg/L	10	12/17/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate							Analyst: **PS**
Nitrate/Nitrite as N	3.7	0.11	0.25		mg/L	5	12/17/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 3:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.9	0.11	0.25		mg/L	5	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	12/17/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	2.3	0.044	0.10		mg/L	2	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24BR-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.059	0.022	0.050		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.18	0.022	0.050		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97187** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **PBW** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97187** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **LCSW** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.963	0.050	1.000	0	96.3	85	115				

Sample ID **N014056-013D-DUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **ZZZZZZ** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.169	0.050						0.1803	6.23	20	

Sample ID **N014056-013D-MS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **ZZZZZZ** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.207	0.050	1.000	0.1803	103	75	125				

Sample ID **N014056-013D-MSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **ZZZZZZ** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.214	0.050	1.000	0.1803	103	75	125	1.207	0.520	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N014057-002D-DUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97187
Client ID:	ZZZZZZ	Batch ID:	R97187	TestNo:	SM4500-NO3			Analysis Date:	12/17/2014	SeqNo:	1892272

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.086	0.25						3.101	0.501	20	

Sample ID	N014057-002D-MS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97187
Client ID:	ZZZZZZ	Batch ID:	R97187	TestNo:	SM4500-NO3			Analysis Date:	12/17/2014	SeqNo:	1892273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.641	0.25	5.000	3.101	111	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014056
Project: PG&E Topock
Lab ID: N014056-001

Client Sample ID: MW-25-200
Collection Date: 12/2/2014 2:55:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	390	19	100		ug/L	1	12/9/2014 06:41 PM
Calcium	100000	58	500		ug/L	1	12/9/2014 06:41 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:41 PM
Magnesium	19000	11	100		ug/L	1	12/9/2014 06:41 PM
Potassium	7700	420	2500		ug/L	5	12/9/2014 11:32 AM
Sodium	210000	940	12000		ug/L	25	12/9/2014 01:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014056
Project: PG&E Topock
Lab ID: N014056-005

Client Sample ID: MW-31-060-200
Collection Date: 12/3/2014 3:16:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	400	19	100		ug/L	1	12/9/2014 06:47 PM
Calcium	120000	58	500		ug/L	1	12/9/2014 06:47 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:47 PM
Magnesium	19000	11	100		ug/L	1	12/9/2014 06:47 PM
Potassium	5200	420	2500		ug/L	5	12/9/2014 11:43 AM
Sodium	430000	940	12000		ug/L	25	12/9/2014 01:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	850	19	100		ug/L	1	12/9/2014 06:53 PM
Calcium	230000	58	500		ug/L	1	12/9/2014 06:53 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 06:53 PM
Magnesium	25000	11	100		ug/L	1	12/9/2014 06:53 PM
Sodium	510000	940	12000		ug/L	25	12/9/2014 01:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	2100	19	100		ug/L	1	12/9/2014 06:58 PM
Calcium	480000	290	2500		ug/L	5	12/9/2014 07:51 PM
Iron	25	1.3	20		ug/L	1	12/9/2014 06:58 PM
Magnesium	17000	11	100		ug/L	1	12/9/2014 06:58 PM
Sodium	3400000	7500	100000		ug/L	200	12/9/2014 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48127** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **PBW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	52.494	500									

Sample ID **LCS2-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	20041.227	500	20000	0	100	85	115				
Sodium	19991.898	500	20000	0	100	85	115				

Sample ID **N014023-004B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49273.351	2500	20000	30480	94.0	75	125				

Sample ID **N014023-004B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	50176.231	2500	20000	30480	98.5	75	125	49270	1.82	20	

Sample ID **N014023-004B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3662430.078	100000	20000	3894000	-1160	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N014023-004B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3555096.924	100000	20000	3894000	-1700	75	125	3662000	2.97	20	S

Sample ID **N014057-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49179.722	2500	20000	30190	94.9	75	125				

Sample ID **N014057-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3370113.922	100000	20000	3328000	210	75	125				S

Sample ID **MB-48127** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **PBW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	75.918	100									
Calcium	ND	500									
Iron	2.536	20									
Magnesium	ND	100									

Sample ID **LCS1-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4462.465	100	5000	0	89.2	85	115				
Calcium	9092.933	500	10000	0	90.9	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.951	20	100.0	0	109	85	115				
Magnesium	9180.771	100	10000	0	91.8	85	115				

Sample ID **N014023-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7075.968	100	5000	1980	102	75	125				
Calcium	153646.728	500	10000	136900	167	75	125				S
Iron	94.660	20	100.0	1.460	93.2	75	125				
Magnesium	14031.943	100	10000	5619	84.1	75	125				

Sample ID **N014023-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7054.703	100	5000	1980	101	75	125	7076	0.301	20	
Calcium	153562.786	500	10000	136900	167	75	125	153600	0.0546	20	S
Iron	94.324	20	100.0	1.460	92.9	75	125	94.66	0.356	20	
Magnesium	14016.489	100	10000	5619	84.0	75	125	14030	0.110	20	

Sample ID **N014057-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6513.277	100	5000	1605	98.2	75	125				
Calcium	424229.273	500	10000	400000	242	75	125				S
Iron	90.217	20	100.0	0	90.2	75	125				
Magnesium	41381.127	100	10000	32070	93.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 2:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**				PrepDate	**12/8/2014**	Analyst: **CEI**
Arsenic	1.2	0.027	0.10		µg/L	1	12/16/2014 02:21 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2014 02:21 PM
Molybdenum	3.8	0.15	0.50		µg/L	1	12/16/2014 02:21 PM
Selenium	5.3	0.069	0.50		µg/L	1	12/16/2014 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-200
Lab Order:	N014056	**Collection Date:**	12/2/2014 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Arsenic	4.5	0.027	0.10		µg/L	1	12/16/2014 02:32 PM
Manganese	120	0.026	0.50		µg/L	1	12/16/2014 02:32 PM
Molybdenum	84	0.15	0.50		µg/L	1	12/16/2014 02:32 PM
Selenium	3.3	0.069	0.50		µg/L	1	12/16/2014 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 3:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Arsenic	1.1	0.027	0.10		µg/L	1	12/16/2014 02:43 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2014 02:43 PM
Molybdenum	15	0.15	0.50		µg/L	1	12/16/2014 02:43 PM
Selenium	2.5	0.069	0.50		µg/L	1	12/16/2014 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**				PrepDate	**12/8/2014**	Analyst: **CEI**
Arsenic	0.61	0.027	0.10		µg/L	1	12/16/2014 03:04 PM
Manganese	2.4	0.026	0.50		µg/L	1	12/16/2014 03:04 PM
Molybdenum	27	0.15	0.50		µg/L	1	12/16/2014 03:04 PM
Selenium	7.3	0.069	0.50		µg/L	1	12/16/2014 03:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-200
Lab Order:	N014056	**Collection Date:**	12/3/2014 1:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Arsenic	2.9	0.13	0.50		µg/L	5	12/16/2014 03:31 PM
Manganese	56	0.026	0.50		µg/L	1	12/16/2014 03:26 PM
Molybdenum	58	0.76	2.5		µg/L	5	12/16/2014 03:31 PM
Selenium	ND	0.34	2.5		µg/L	5	12/16/2014 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24BR-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**				PrepDate	**12/8/2014**	Analyst: **CEI**
Arsenic	0.41	0.027	0.10		µg/L	1	12/16/2014 03:37 PM
Manganese	140	0.13	2.5		µg/L	5	12/16/2014 03:42 PM
Molybdenum	64	0.76	2.5		µg/L	5	12/16/2014 03:42 PM
Selenium	ND	0.34	2.5		µg/L	5	12/16/2014 03:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-200
Lab Order:	N014056	**Collection Date:**	12/4/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014056-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**				PrepDate	**12/8/2014**	Analyst: **CEI**
Arsenic	6.8	0.13	0.50		µg/L	5	12/16/2014 03:53 PM
Manganese	17	0.026	0.50		µg/L	1	12/16/2014 03:48 PM
Molybdenum	61	0.76	2.5		µg/L	5	12/16/2014 03:53 PM
Selenium	ND	0.34	2.5		µg/L	5	12/16/2014 03:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48126** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **PBW** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48126** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **LCSW** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.923	0.10	10.00	0	99.2	85	115				
Manganese	97.406	0.50	100.0	0	97.4	85	115				
Molybdenum	9.741	0.50	10.00	0	97.4	85	115				
Selenium	9.279	0.50	10.00	0	92.8	85	115				

Sample ID **N014056-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.307	0.10	20.00	1.206	101	75	125				
Manganese	173.432	0.50	200.0	0	86.7	75	125				
Molybdenum	26.181	0.50	20.00	3.825	112	75	125				
Selenium	22.119	0.50	20.00	5.288	84.2	75	125				

Sample ID **N014056-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.268	0.10	20.00	1.206	100	75	125	21.31	0.182	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014056-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	175.299	0.50	200.0	0	87.6	75	125	173.4	1.07	20	
Molybdenum	26.023	0.50	20.00	3.825	111	75	125	26.18	0.605	20	
Selenium	22.278	0.50	20.00	5.288	84.9	75	125	22.12	0.714	20	

Sample ID **N014057-004B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.877	0.10	20.00	1.163	98.6	75	125				
Manganese	166.823	0.50	200.0	0	83.4	75	125				
Molybdenum	29.845	0.50	20.00	7.555	111	75	125				
Selenium	18.435	0.50	20.00	1.748	83.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL — **CHAIN OF CUSTODY RECORD** — 12/4/2014 4:25:30 PM —

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/4/2014
COC Number: 4

	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COM
Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
Filtered:	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
Holding Time:	28	28	180	180	180	180	180	7	7	7	7	28	NA			
MW-25-200 (12/2/2014 14:55 Water)	X		X		X	X	X	X	X	X	X	X	X	N0140056-01	5	
MW-70-105-200 (12/2/2014 12:18 Water)	X		X			X	X		X			X		-02	4	
MW-215-200 (12/3/2014 6:43 Water)	X													-03	1	
MW-216-200 (12/3/2014 6:40 Water)	X													-04	1	
MW-31-060-200 (12/3/2014 15:16 Water)		X	X		X	X	X	X	X	X	X	X	X	-05	5	
MW-65-160-200 (12/3/2014 12:36 Water)	X		X	X		X	X	X	X	X	X	X		-06	4	
MW-65-225-200 (12/3/2014 13:14 Water)		X	X	X		X	X	X	X	X	X	X		-07	4	
MW-217-200 (12/4/2014 7:03 Water)	X													-08	1	
MW-218-200 (12/4/2014 7:00 Water)	X													-09	1	
MW-219-200 (12/4/2014 14:52 Water)	X													-10	1	
MW-220-200 (12/4/2014 14:50 Water)	X													-11	1	
MW-24BR-200 (12/4/2014 8:48 Water)	X		X			X	X		X			X		-12	4	
MW-60BR-245-200 (12/4/2014 7:48 Water)	X		X			X	X		X			X		-13	4	

	Signatures	Date/Time
Approved by		12-4-14 1635
Sampled by		
Relinquished by		
Received by		12/4/14 1630
Relinquished by		12/4/14
Received by		12/4/14 1710

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 2-8°C / 1-9°C
Airbill No: 1K#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL CHAIN OF CUSTODY RECORD 12/4/2014 4:25:31 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/4/2014
COC Number: 4

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENT
PGE-07BR-200	12/4/2014	9:18	Water	X					X			X					N0140356 - 14	3	
																	TOTAL NUMBER OF CONTAINERS	39	

	Signatures	Date/Time
Approved by		12-4-14
Sampled by		1635
Relinquished by		
Received by		12/4/14 1635
Relinquished by		12/4/14
Received by		12/4/14 1900

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1 - 0°C
Airbill No: 1 of 2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/4/2014	Workorder:	N014056
Rep sample Temp (Deg C):	1.9, 2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 12/05/14

Reviewed By: 12/09/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

08-Dec-14

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: OXY_DEUT		
N014056-001E / MW-25-200	Water	12/2/2014 2:55:00 PM	8OZP	1		
N014056-005E / MW-31-060-200	Water	12/3/2014 3:16:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N14056A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen/Deuterium. CH2MHill samples. For questions, please contact Shawn Duffy at (530)229-3303.

FedEx #: 772142788575

	Date/Time		Date/Time
Relinquished by: Amanda Cortez	12/8/14 1600	Received by:	
Relinquished by:		Received by:	

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014056-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(53.9158-53.8186)*1000000}{100}$$
$$= 972 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 970 mg/L

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/9/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48129	100	61.3449	61.3447	-2	1	-2		
LCS-48129	100	57.0898	57.1842	944	1	944		
N014027-001F	100	64.2578	64.3409	831	1	831	450	1.847
N014055-001A	100	64.0949	64.1476	527	1	527	845	0.624
N014055-002A	30	55.5478	55.6328	850	3.33333	2833.3305	4090	0.693
N014055-003A	30	63.9731	64.0639	908	3.33333	3026.66364	4510	0.671
N014056-001C	100	53.8186	53.9158	972	1	972	1582	0.614
N014056-005C	50	64.2481	64.3307	826	2	1652	2660	0.621
N014056-006C	40	61.1257	61.22	943	2.5	2357.5	3410	0.691
N014056-006C DUP	40	60.9776	61.0707	931	2.5	2327.5	3410	0.683
N014056-007C	10	60.3383	60.442	1037	10	10370	14950	0.694
N014057-001C	10	60.6661	60.7661	1000	10	10000	12780	0.782
N014057-002C	10	61.3054	61.4078	1024	10	10240	13220	0.775

REB 12/18/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014056-006A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 4.8557 * 20

= 97.114

Reporting result in two significant figures,

Cr^{+6}, µg/L = 97

12/18/2014

Sample ID: **N014056-001C @ pH 7.66**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.825mL)

= **0.02114 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (7.15) (0.02114 N) (1) * 1000

=151.151 **mg/L**

Reporting results in two significant figures,

= 150 **mg/L** as CaCO3

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02114 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (7.15 mL) (0.02114) (1) * 1000

= 151.151 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 151.151 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 150 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014056-007C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.19 * 1000

= 5190

Reporting result in two significant figures,

Chloride, mg/L = 5200

12/17/2014

Sample Calculation

METHOD: EPA 3500_CrBPGE
TEST NAME: Hexavalent Chromium
MATRIX: WATER

FORMULA:

Calculate the Hexavalent Chromium, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A*DF

where:

A = ug/L, instrument calculated concentration
DF = dilution factor

For ~~N014056-005A~~ N014056-005A

The concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 600.213 * 1

Hexavalent Chromium, ug/L = 600.213

Reporting results in two significant figures,

Hexavalent Chromium, ug/L = 600

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Potassium concentration, in ug/L, in the original sample as follows:

Potassium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014056-001B**, the concentration in ug/L is calculated as follows:

Potassium, ug/L	=	1.545396681 * 5 * (25/25) * 1000
	=	7726.983405

Reporting results in two significant figures,

Potassium, ug/L	**=**	**7700**

12/16/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014056
Test Method: EPA 6010
Analysis Date: 12/09/14

Matrix: Water
Batch No.: 48127

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to K. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014023-004B-DT 25X	Potassium	ug/L	30140.00085	NA	30478.71932	1.11%	10
N014023-004B-DT 1000X	Sodium	ug/L	3983276.744	PASS	3894398.502	2.28%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014056
Test Method: EPA 6010
Analysis Date: 12/09/14

Matrix: Water
Batch No.: 48127

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed to Mg. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014023-001B-DT 5X	Boron	ug/L	2376.322008	NA	1980.002123	20.02%	10
N014023-001B-DT 5X	Calcium	ug/L	142219.9397	PASS	136899.5624	3.89%	10
N014023-001B-DT 5X	Iron	ug/L	0	NA	1.459793473	100.00%	10
N014023-001B-DT 5X	Magnesium	ug/L	6879.55702	FAIL	5619.288835	22.43%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N014023-004B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	51237.612	2500	20000	30480	104	80	120				

Sample ID **N014023-004B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	4646655.972	100000	20000	3894000	3760	80	120				S

Sample ID **N014023-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6913.434	100	5000	1980	98.7	80	120				
Calcium	143613.567	500	10000	136900	67.1	80	120				S
Iron	94.932	20	100.0	1.460	93.5	80	120				
Magnesium	13681.807	100	10000	5619	80.6	80	120				

DT of Na@1000x and Ca@5x are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 12/16/2014

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014056-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.20641015773647 * 1 * (25/25)

= 1.20641015773647

Reporting results in two significant figures,

Arsenic, ug/L = 1.2

12/18/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014056
Test Method: EPA 6020
Analysis Date: 12/16/2014

Matrix: Water
Batch No.: 48126

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentrations are < 25X RL's.
Dilution test failed for Cr. ~~PS passed criteria.~~

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014056-001B-DT 5X	Arsenic	µg/L	1.448040491	NA	1.206410158	20.03%	10
N014056-001B-DT 5X	Chromium	µg/L	147.1571516	FAIL	129.9501895	13.24%	10
N014056-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N014056-001B-DT 5X	Molybdenum	µg/L	3.985	NA	3.825	4.18%	10
N014056-001B-DT 5X	Selenium	µg/L	5.733423218	NA	5.287865747	8.43%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014056-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:				RunNo:	**97182**
Client ID:	**ZZZZZZ**	Batch ID:	**48126**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**12/16/2014**			SeqNo:	**1891952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.960	0.10	20.00	1.206	98.8	80	120				
Manganese	172.137	0.50	200.0	0	86.1	80	120				
Molybdenum	26.396	0.50	20.00	3.825	113	80	120				
Selenium	21.651	0.50	20.00	5.288	81.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014056
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014056-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**97182**	
Client ID:	**ZZZZZZ**	Batch ID:	**48126**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/16/2014**		SeqNo:	**1891792**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	140.225	1.0	20.00	130.0	51.4	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 18, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014057

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 04, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014057-001 and N014057-002 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014023-004B-MS, N014023-004B-MSD, N014023-001B-MS, N014023-001B-MSD, N014057-001B-MS and N014057-002B-MS are outside recovery criteria for Sodium and Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014056-001B-MS and N014056-001B-MSD are outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary for some analytes on samples N014057-001 and N014057-002 due to failed Internal Standard when samples were analyzed at no dilution possibly due to matrix interference.

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ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014057
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014057-001A	MW-40D-200	Water	12/4/2014 2:14:00 PM	12/4/2014	12/18/2014
N014057-001B	MW-40D-200	Water	12/4/2014 2:14:00 PM	12/4/2014	12/18/2014
N014057-001C	MW-40D-200	Water	12/4/2014 2:14:00 PM	12/4/2014	12/18/2014
N014057-001D	MW-40D-200	Water	12/4/2014 2:14:00 PM	12/4/2014	12/18/2014
N014057-002A	MW-40D-200SMT	Water	12/4/2014 10:58:00 AM	12/4/2014	12/18/2014
N014057-002B	MW-40D-200SMT	Water	12/4/2014 10:58:00 AM	12/4/2014	12/18/2014
N014057-002C	MW-40D-200SMT	Water	12/4/2014 10:58:00 AM	12/4/2014	12/18/2014
N014057-002D	MW-40D-200SMT	Water	12/4/2014 10:58:00 AM	12/4/2014	12/18/2014
N014057-003A	MW-40S-200	Water	12/4/2014 11:44:00 AM	12/4/2014	12/18/2014
N014057-003B	MW-40S-200	Water	12/4/2014 11:44:00 AM	12/4/2014	12/18/2014
N014057-003C	MW-40S-200	Water	12/4/2014 11:44:00 AM	12/4/2014	12/18/2014
N014057-003D	MW-40S-200	Water	12/4/2014 11:44:00 AM	12/4/2014	12/18/2014
N014057-004A	MW-40S-200SMT	Water	12/4/2014 10:45:00 AM	12/4/2014	12/18/2014
N014057-004B	MW-40S-200SMT	Water	12/4/2014 10:45:00 AM	12/4/2014	12/18/2014
N014057-004C	MW-40S-200SMT	Water	12/4/2014 10:45:00 AM	12/4/2014	12/18/2014
N014057-004D	MW-40S-200SMT	Water	12/4/2014 10:45:00 AM	12/4/2014	12/18/2014

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141205B**	QC Batch: **R97040**			PrepDate			Analyst: **AC**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	12/5/2014 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014056-014C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97040**
Client ID: **ZZZZZZ** Batch ID: **R97040** TestNo: **EPA 120.1** Analysis Date: **12/5/2014** SeqNo: **1885625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17250.000	0.10						17210	0.232	10	

Sample ID **N014052-001B DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97040**
Client ID: **ZZZZZZ** Batch ID: **R97040** TestNo: **EPA 120.1** Analysis Date: **12/5/2014** SeqNo: **1893449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1094.000	0.10						1093	0.0914	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141208A**	QC Batch: **48129**				PrepDate	**12/8/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/8/2014 08:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141208A**	QC Batch: **48129**				PrepDate	**12/8/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/8/2014 08:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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Date: *18-Dec-14*

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48129** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/8/2014** RunNo: **97149**
Client ID: **PBW** Batch ID: **48129** TestNo: **SM2540C** Analysis Date: **12/8/2014** SeqNo: **1890147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48129** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/8/2014** RunNo: **97149**
Client ID: **LCSW** Batch ID: **48129** TestNo: **SM2540C** Analysis Date: **12/8/2014** SeqNo: **1890148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	944.000	10	1000	0	94.4	80	120				

Sample ID **N014056-006C-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/8/2014** RunNo: **97149**
Client ID: **ZZZZZZ** Batch ID: **48129** TestNo: **SM2540C** Analysis Date: **12/8/2014** SeqNo: **1890155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	2327.500	25						2358	1.28	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141209A**	QC Batch: **R97080**			PrepDate			Analyst: **RB**
Hexavalent Chromium	160	0.32	4.0		µg/L	20	12/9/2014 01:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	140	0.030	1.0		µg/L	1	12/16/2014 04:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141209A** QC Batch: **R97080**				PrepDate			Analyst: **RB**
Hexavalent Chromium	73	0.32	4.0		µg/L	20	12/9/2014 02:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141216C** QC Batch: **48126**				PrepDate	**12/8/2014**		Analyst: **CEI**
Chromium	67	0.030	1.0		µg/L	1	12/16/2014 04:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_141209A**	QC Batch: **R97080**			PrepDate			Analyst: **RB**
Hexavalent Chromium	7.6	0.016	0.20		µg/L	1	12/9/2014 03:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate		**12/8/2014**	Analyst: **CEI**
Chromium	7.1	0.030	1.0		µg/L	1	12/16/2014 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_141209A** QC Batch: **R97080** PrepDate							Analyst: **RB**
Hexavalent Chromium	7.0	0.016	0.20		µg/L	1	12/9/2014 02:58 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141216C** QC Batch: **48126** PrepDate **12/8/2014**							Analyst: **CEI**
Chromium	6.7	0.030	1.0		µg/L	1	12/16/2014 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97080** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **PBW** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97080** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **LCSW** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.982	0.20	5.000	0	99.6	90	110				

Sample ID **N014087-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.062	0.20						8.014	0.601	20	

Sample ID **N014087-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.096	0.20	5.000	8.014	102	90	110				

Sample ID **N014087-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.335	0.20	5.000	8.014	106	90	110	13.10	1.81	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014087-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.484	0.20	5.000	7.411	101	90	110				

Sample ID **N014087-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.104	0.20	5.000	7.252	97.0	90	110				

Sample ID **N014087-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.322	0.20	5.000	9.321	100	90	110				

Sample ID **N014090-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.564	0.20	5.000	1.558	100	90	110				

Sample ID **N014057-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.574	4.0	100.0	157.6	97.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014057-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.730	4.0	100.0	72.81	98.9	90	110				

Sample ID **N014057-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.940	0.20	5.000	7.002	98.8	90	110				

Sample ID **N014057-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.342	0.20	5.000	7.571	95.4	90	110				

Sample ID **N014089-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.08230	102	90	110				

Sample ID **N014056-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97080**
Client ID: **ZZZZZZ** Batch ID: **R97080** TestNo: **EPA 218.6** Analysis Date: **12/9/2014** SeqNo: **1887502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.906	1.0	5.000	0	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48126	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2014	RunNo:	97182
Client ID:	PBW	Batch ID:	48126	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2014	SeqNo:	1891762

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48126	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2014	RunNo:	97182
Client ID:	LCSW	Batch ID:	48126	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2014	SeqNo:	1891763

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.651	1.0	10.00	0	96.5	85	115				

Sample ID	N014056-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2014	RunNo:	97182
Client ID:	ZZZZZZ	Batch ID:	48126	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2014	SeqNo:	1891793

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	136.676	1.0	20.00	130.0	33.6	75	125				S

Sample ID	N014056-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2014	RunNo:	97182
Client ID:	ZZZZZZ	Batch ID:	48126	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2014	SeqNo:	1891794

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	137.200	1.0	20.00	130.0	36.2	75	125	136.7	0.383	20	S

Sample ID	N014057-004B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2014	RunNo:	97182
Client ID:	ZZZZZZ	Batch ID:	48126	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2014	SeqNo:	1891797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.233	1.0	20.00	6.716	87.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	47	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141205C**	QC Batch: **R97042**			PrepDate			Analyst: **AC**
Alkalinity, Bicarbonate (As CaCO3)	53	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/5/2014
Alkalinity, Total (As CaCO3)	53	1.2	5.0		mg/L	1	12/5/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97042** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **LCSW** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.423	5.0	100.0	0	100	85	115				
Alkalinity, Total (As CaCO3)	100.423	5.0	100.0	0	100	85	115				

Sample ID **MB-R97042** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **PBW** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014023-001C DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	103.594	5.0						104.7	1.02	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	103.594	5.0						104.7	1.02	30	

Sample ID **N014023-001C MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	196.617	5.0	100.0	104.7	92.0	75	125				
Alkalinity, Total (As CaCO3)	196.617	5.0	100.0	104.7	92.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014023-001C MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97042**
Client ID: **ZZZZZZ** Batch ID: **R97042** TestNo: **SM 2320 B** Analysis Date: **12/5/2014** SeqNo: **1885647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	195.560	5.0	100.0	104.7	90.9	75	125	196.6	0.539	20	
Alkalinity, Total (As CaCO3)	195.560	5.0	100.0	104.7	90.9	75	125	196.6	0.539	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014057
Project: PG&E Topock
Lab ID: N014057-001

Client Sample ID: MW-40D-200
Collection Date: 12/4/2014 2:14:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/5/2014 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Chloride	5200	25	500		mg/L	1000	12/6/2014 12:07 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Sulfate	690	3.3	50		mg/L	100	12/5/2014 11:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014057
Project: PG&E Topock
Lab ID: N014057-002

Client Sample ID: MW-40D-200SMT
Collection Date: 12/4/2014 10:58:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/5/2014 06:26 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Chloride	5500	25	500		mg/L	1000	12/6/2014 12:19 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141205A** QC Batch: **R97055**				PrepDate			Analyst: **PS**
Sulfate	640	3.3	50		mg/L	100	12/5/2014 06:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R97055_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **PBW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R97055_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **LCSW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.500	0.50	2.500	0	100	90	110				

Sample ID **N014056-005C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.158	0.50						0.1740	0	20	

Sample ID **N014056-005C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.340	0.50	2.500	0.1740	86.6	80	120				

Sample ID **N014056-005C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.294	0.50	2.500	0.1740	84.8	80	120	2.340	1.99	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R97055_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	PBW	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886293

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R97055_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	LCSW	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.386	0.50	2.500	0	95.4	90	110				

Sample ID	N014053-001B-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886300

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	81.940	10						83.08	1.38	20	

Sample ID	N014053-001B-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.820	10	50.00	83.08	99.5	80	120				

Sample ID	N014053-001B-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886302

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.680	10	50.00	83.08	99.2	80	120	132.8	0.105	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**N014056-005C-DUP**	SampType:	**DUP**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:			RunNo:	**97055**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97055**	TestNo:	**EPA 300.0**			Analysis Date:	**12/5/2014**		SeqNo:	**1886308**	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chloride		740.800	100						786.8	6.02	20		

Sample ID	**N014056-005C-MS**	SampType:	**MS**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:			RunNo:	**97055**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97055**	TestNo:	**EPA 300.0**			Analysis Date:	**12/5/2014**		SeqNo:	**1886309**	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chloride		1260.000	100	500.0	786.8	94.6	80	120					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R97055_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **PBW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R97055_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **LCSW** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.018	0.50	5.000	0	100	90	110				

Sample ID **N014053-001B-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	185.240	10						184.8	0.249	20	

Sample ID **N014053-001B-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	288.260	10	100.0	184.8	103	80	120				

Sample ID **N014053-001B-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97055**
Client ID: **ZZZZZZ** Batch ID: **R97055** TestNo: **EPA 300.0** Analysis Date: **12/5/2014** SeqNo: **1886378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	287.400	10	100.0	184.8	103	80	120	288.3	0.299	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N014056-001C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886385

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	142.720	10						144.8	1.47	20	

Sample ID	N014056-001C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97055
Client ID:	ZZZZZZ	Batch ID:	R97055	TestNo:	EPA 300.0			Analysis Date:	12/5/2014	SeqNo:	1886386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	245.720	10	100.0	144.8	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.3	0.11	0.25		mg/L	5	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141217A**	QC Batch: **R97187**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	12/17/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.8	0.11	0.25		mg/L	5	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141217A** QC Batch: **R97187** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.8	0.11	0.25		mg/L	5	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97187** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **PBW** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97187** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **LCSW** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.963	0.050	1.000	0	96.3	85	115				

Sample ID **N014056-013D-DUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **ZZZZZZ** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.169	0.050						0.1803	6.23	20	

Sample ID **N014056-013D-MS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **ZZZZZZ** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.207	0.050	1.000	0.1803	103	75	125				

Sample ID **N014056-013D-MSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97187**
Client ID: **ZZZZZZ** Batch ID: **R97187** TestNo: **SM4500-NO3** Analysis Date: **12/17/2014** SeqNo: **1892267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.214	0.050	1.000	0.1803	103	75	125	1.207	0.520	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N014057-002D-DUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97187
Client ID:	ZZZZZZ	Batch ID:	R97187	TestNo:	SM4500-NO3			Analysis Date:	12/17/2014	SeqNo:	1892272

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.086	0.25						3.101	0.501	20	

Sample ID	N014057-002D-MS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97187
Client ID:	ZZZZZZ	Batch ID:	R97187	TestNo:	SM4500-NO3			Analysis Date:	12/17/2014	SeqNo:	1892273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.641	0.25	5.000	3.101	111	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	1600	19	100		ug/L	1	12/9/2014 07:04 PM
Calcium	400000	58	500		ug/L	1	12/9/2014 07:04 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 07:04 PM
Magnesium	32000	11	100		ug/L	1	12/9/2014 07:04 PM
Sodium	3100000	7500	100000		ug/L	200	12/9/2014 01:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141209A**	QC Batch: **48127**				PrepDate	**12/8/2014**	Analyst: **CEI**
Boron	1800	19	100		ug/L	1	12/9/2014 07:14 PM
Calcium	410000	58	500		ug/L	1	12/9/2014 07:14 PM
Iron	ND	1.3	20		ug/L	1	12/9/2014 07:14 PM
Magnesium	23000	11	100		ug/L	1	12/9/2014 07:14 PM
Sodium	3300000	7500	100000		ug/L	200	12/9/2014 01:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48127** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **PBW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	52.494	500									

Sample ID **LCS2-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19991.898	500	20000	0	100	85	115				

Sample ID **N014023-004B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3662430.078	100000	20000	3894000	-1160	75	125				S

Sample ID **N014023-004B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3555096.924	100000	20000	3894000	-1700	75	125	3662000	2.97	20	S

Sample ID **N014057-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97076**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1886984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3370113.922	100000	20000	3328000	210	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48127** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **PBW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	75.918	100									
Calcium	ND	500									
Iron	2.536	20									
Magnesium	ND	100									

Sample ID **LCS1-48127** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **LCSW** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4462.465	100	5000	0	89.2	85	115				
Calcium	9092.933	500	10000	0	90.9	85	115				
Iron	108.951	20	100.0	0	109	85	115				
Magnesium	9180.771	100	10000	0	91.8	85	115				

Sample ID **N014023-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7075.968	100	5000	1980	102	75	125				
Calcium	153646.728	500	10000	136900	167	75	125				S
Iron	94.660	20	100.0	1.460	93.2	75	125				
Magnesium	14031.943	100	10000	5619	84.1	75	125				

Sample ID **N014023-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7054.703	100	5000	1980	101	75	125	7076	0.301	20	
Calcium	153562.786	500	10000	136900	167	75	125	153600	0.0546	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N014023-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	94.324	20	100.0	1.460	92.9	75	125	94.66	0.356	20	
Magnesium	14016.489	100	10000	5619	84.0	75	125	14030	0.110	20	

Sample ID **N014057-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/8/2014** RunNo: **97073**
Client ID: **ZZZZZZ** Batch ID: **48127** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/9/2014** SeqNo: **1887158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6513.277	100	5000	1605	98.2	75	125				
Calcium	424229.273	500	10000	400000	242	75	125				S
Iron	90.217	20	100.0	0	90.2	75	125				
Magnesium	41381.127	100	10000	32070	93.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Arsenic	4.5	0.027	0.10		µg/L	1	12/16/2014 04:10 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2014 04:10 PM
Molybdenum	59	0.76	2.5		µg/L	5	12/16/2014 04:26 PM
Selenium	1.7	0.069	0.50		µg/L	1	12/16/2014 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**				PrepDate	**12/8/2014**	Analyst: **CEI**
Arsenic	6.0	0.13	0.50		µg/L	5	12/16/2014 04:37 PM
Manganese	7.4	0.026	0.50		µg/L	1	12/16/2014 04:32 PM
Molybdenum	66	0.76	2.5		µg/L	5	12/16/2014 04:37 PM
Selenium	ND	0.34	2.5		µg/L	5	12/16/2014 04:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200
Lab Order:	N014057	**Collection Date:**	12/4/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Arsenic	1.2	0.027	0.10		µg/L	1	12/16/2014 04:43 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2014 04:43 PM
Molybdenum	8.5	0.15	0.50		µg/L	1	12/16/2014 04:43 PM
Selenium	2.0	0.069	0.50		µg/L	1	12/16/2014 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40S-200SMT
Lab Order:	N014057	**Collection Date:**	12/4/2014 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014057-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141216C**	QC Batch: **48126**			PrepDate	**12/8/2014**		Analyst: **CEI**
Arsenic	1.2	0.027	0.10		µg/L	1	12/16/2014 04:54 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2014 04:54 PM
Molybdenum	7.6	0.15	0.50		µg/L	1	12/16/2014 04:54 PM
Selenium	1.7	0.069	0.50		µg/L	1	12/16/2014 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48126** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **PBW** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48126** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **LCSW** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.923	0.10	10.00	0	99.2	85	115				
Manganese	97.406	0.50	100.0	0	97.4	85	115				
Molybdenum	9.741	0.50	10.00	0	97.4	85	115				
Selenium	9.279	0.50	10.00	0	92.8	85	115				

Sample ID **N014056-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.307	0.10	20.00	1.206	101	75	125				
Manganese	173.432	0.50	200.0	0	86.7	75	125				
Molybdenum	26.181	0.50	20.00	3.825	112	75	125				
Selenium	22.119	0.50	20.00	5.288	84.2	75	125				

Sample ID **N014056-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.268	0.10	20.00	1.206	100	75	125	21.31	0.182	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014056-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	175.299	0.50	200.0	0	87.6	75	125	173.4	1.07	20	
Molybdenum	26.023	0.50	20.00	3.825	111	75	125	26.18	0.605	20	
Selenium	22.278	0.50	20.00	5.288	84.9	75	125	22.12	0.714	20	

Sample ID **N014057-004B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/8/2014** RunNo: **97182**
Client ID: **ZZZZZZ** Batch ID: **48126** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2014** SeqNo: **1891957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.877	0.10	20.00	1.163	98.6	75	125				
Manganese	166.823	0.50	200.0	0	83.4	75	125				
Molybdenum	29.845	0.50	20.00	7.555	111	75	125				
Selenium	18.435	0.50	20.00	1.748	83.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/4/2014 4:31:32 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4SMT
Turnaround Time 10 Days
Shipping Date: 12/4/2014
COC Number: 7

				Cr6 (E218.6) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (SW6010B/SW6020Adis) Field Filtered Mo,Se,Mn,Cr,As	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (E353.3)		Number of Containers	COMMENTS
			Container:	250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	NA	NA	NA	NA	NA			
			Holding Time:	28	180	180	7	7	7	7	28			
	DATE	TIME	Matrix											
MW-40D-200	12/4/2014	14:14	Water	X	X	X	X	X	X	X	X	N014057 -01	4	
MW-40D-200SMT	12/4/2014	10:58	Water	X	X	X	X	X	X	X	X	-02	4	
MW-40S-200	12/4/2014	11:44	Water	X		X		X			X	-03	4	
MW-40S-200SMT	12/4/2014	10:45	Water	X		X		X			X	-04	4	
												TOTAL NUMBER OF CONTAINERS	16	

	Signatures	Date/Time
Approved by		12-4-14
Sampled by		1635
Relinquished by		
Received by		12/4/14 1635
Relinquished by		12/4/14 1900
Received by		12/4/14 1900

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 2-8°C IR #2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Nov 3 to Dec 18, 2014

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/4/2014	Workorder:	N014057
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 12/05/14

Reviewed By: 12/09/14

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014057-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.7661-60.6661)*1000000}{10}$$
$$= 10\ 000 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 10 000 mg/L

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/9/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48129	100	61.3449	61.3447	-2	1	-2		
LCS-48129	100	57.0898	57.1842	944	1	944		
N014027-001F	100	64.2578	64.3409	831	1	831	450	1.847
N014055-001A	100	64.0949	64.1476	527	1	527	845	0.624
N014055-002A	30	55.5478	55.6328	850	3.33333	2833.3305	4090	0.693
N014055-003A	30	63.9731	64.0639	908	3.33333	3026.66364	4510	0.671
N014056-001C	100	53.8186	53.9158	972	1	972	1582	0.614
N014056-005C	50	64.2481	64.3307	826	2	1652	2660	0.621
N014056-006C	40	61.1257	61.22	943	2.5	2357.5	3410	0.691
N014056-006C DUP	40	60.9776	61.0707	931	2.5	2327.5	3410	0.683
N014056-007C	10	60.3383	60.442	1037	10	10370	14950	0.694
N014057-001C	10	60.6661	60.7661	1000	10	10000	12780	0.782
N014057-002C	10	61.3054	61.4078	1024	10	10240	13220	0.775

REB 12/18/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014057-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 7.8812 * 20

= 157.624

Reporting result in two significant figures,

Cr^{+6}, µg/L = 160

12/18/2014

Sample ID: **N014057-001C @ pH 7.62**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.825mL)

= **0.02114 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (2.20) (0.02114 N) (1) * 1000

=46.508 **mg/L**

Reporting results in two significant figures,

= 46.508 **mg/L** as CaCO3

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02114 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (2.20 mL) (0.02114) (1) * 1000

= 46.508 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 46.508 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 47 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014057-002C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.507 * 1000

= 5507

Reporting result in two significant figures,

Chloride, mg/L = 5500

12/17/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014057-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 15.52660982 * 200 * (25/25) * 1000

= 3105321.964

Reporting results in two significant figures,

Sodium, ug/L = 3100000

Nancy 12/16/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014057
Test Method: EPA 6010
Analysis Date: 12/09/14

Matrix: Water
Batch No.: 48127

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014023-004B-DT 1000X	Sodium	ug/L	3983276.744	PASS	3894398.502	2.28%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014057
Test Method: EPA 6010
Analysis Date: 12/09/14

Matrix: Water
Batch No.: 48127

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed to Mg. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014023-001B-DT 5X	Boron	ug/L	2376.322008	NA	1980.002123	20.02%	10
N014023-001B-DT 5X	Calcium	ug/L	142219.9397	PASS	136899.5624	3.89%	10
N014023-001B-DT 5X	Iron	ug/L	0	NA	1.459793473	100.00%	10
N014023-001B-DT 5X	Magnesium	ug/L	6879.55702	FAIL	5619.288835	22.43%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *09-Dec-14*

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N014023-004B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97076
Client ID:	ZZZZZZ	Batch ID:	48127	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/9/2014	SeqNo:	1886964

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	4646655.972	100000	20000	3894000	3760	80	120				S

Sample ID	N014023-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97073
Client ID:	ZZZZZZ	Batch ID:	48127	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/9/2014	SeqNo:	1887164

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6913.434	100	5000	1980	98.7	80	120				
Calcium	143613.567	500	10000	136900	67.1	80	120				S
Iron	94.932	20	100.0	1.460	93.5	80	120				
Magnesium	13681.807	100	10000	5619	80.6	80	120				

DT of Na@1000x and Ca@5x are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 12/16/2014

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014057-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 4.51632044279569 * 1 * (25/25)

= 4.51632044279569

Reporting results in two significant figures,

Arsenic, ug/L = 4.5

12/18/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014057
Test Method: EPA 6020
Analysis Date: 12/16/2014

Matrix: Water
Batch No.: 48126

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentrations are < 25X RL's.
Dilution test failed for Cr. ~~PS passed criteria.~~

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014056-001B-DT 5X	Arsenic	µg/L	1.448040491	NA	1.206410158	20.03%	10
N014056-001B-DT 5X	Chromium	µg/L	147.1571516	FAIL	129.9501895	13.24%	10
N014056-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N014056-001B-DT 5X	Molybdenum	µg/L	3.985	NA	3.825	4.18%	10
N014056-001B-DT 5X	Selenium	µg/L	5.733423218	NA	5.287865747	8.43%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *18-Dec-14*

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014056-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:				RunNo:	**97182**
Client ID:	**ZZZZZZ**	Batch ID:	**48126**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/16/2014**			SeqNo:	**1891952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.960	0.10	20.00	1.206	98.8	80	120				
Manganese	172.137	0.50	200.0	0	86.1	80	120				
Molybdenum	26.396	0.50	20.00	3.825	113	80	120				
Selenium	21.651	0.50	20.00	5.288	81.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014057
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014056-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**97182**
Client ID:	**ZZZZZZ**	Batch ID:	**48126**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/16/2014**			SeqNo:	**1891792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	140.225	1.0	20.00	130.0	51.4	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 24, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014103

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 09, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014103

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N014103-001 and N014103-006 due to matrix spike not meeting peak retention time criteria possibly due to matrix interference. Matrix spike was analyzed with dilution and retention time met method criteria. Samples were reported at dilution that meet matrix spike peak retention time criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014103-001, N014103-003 and N014103-007 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium and Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary for some analytes on samples N014103-001, N014103-003, N014103-005 and N014103-006 due to failed Internal Standard when samples were analyzed at no dilution possibly due to matrix interference.

ASSET Laboratories

Date: *24-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014103
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014103-001A	MW-64BR-200	Water	12/8/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-001B	MW-64BR-200	Water	12/8/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-001C	MW-64BR-200	Water	12/8/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-001D	MW-64BR-200	Water	12/8/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-002A	MW-221-200	Water	12/9/2014 2:58:00 PM	12/9/2014	12/24/2014
N014103-003A	MW-58BR-200	Water	12/9/2014 10:42:00 AM	12/9/2014	12/24/2014
N014103-003B	MW-58BR-200	Water	12/9/2014 10:42:00 AM	12/9/2014	12/24/2014
N014103-003C	MW-58BR-200	Water	12/9/2014 10:42:00 AM	12/9/2014	12/24/2014
N014103-003D	MW-58BR-200	Water	12/9/2014 10:42:00 AM	12/9/2014	12/24/2014
N014103-004A	MW-62-065-200	Water	12/9/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-004B	MW-62-065-200	Water	12/9/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-004C	MW-62-065-200	Water	12/9/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-004D	MW-62-065-200	Water	12/9/2014 1:42:00 PM	12/9/2014	12/24/2014
N014103-005A	MW-62-110-200	Water	12/9/2014 1:58:00 PM	12/9/2014	12/24/2014
N014103-005B	MW-62-110-200	Water	12/9/2014 1:58:00 PM	12/9/2014	12/24/2014
N014103-005C	MW-62-110-200	Water	12/9/2014 1:58:00 PM	12/9/2014	12/24/2014
N014103-005D	MW-62-110-200	Water	12/9/2014 1:58:00 PM	12/9/2014	12/24/2014
N014103-006A	MW-62-190-200	Water	12/9/2014 2:02:00 PM	12/9/2014	12/24/2014
N014103-006B	MW-62-190-200	Water	12/9/2014 2:02:00 PM	12/9/2014	12/24/2014
N014103-006C	MW-62-190-200	Water	12/9/2014 2:02:00 PM	12/9/2014	12/24/2014
N014103-006D	MW-62-190-200	Water	12/9/2014 2:02:00 PM	12/9/2014	12/24/2014
N014103-007A	MW-68-180-200	Water	12/9/2014 12:12:00 PM	12/9/2014	12/24/2014
N014103-007B	MW-68-180-200	Water	12/9/2014 12:12:00 PM	12/9/2014	12/24/2014
N014103-007C	MW-68-180-200	Water	12/9/2014 12:12:00 PM	12/9/2014	12/24/2014
N014103-007D	MW-68-180-200	Water	12/9/2014 12:12:00 PM	12/9/2014	12/24/2014

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-200
Lab Order:	N014103	**Collection Date:**	12/8/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141210D**	QC Batch: **R97131**				PrepDate		Analyst: **RB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/10/2014

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141210D**	QC Batch: **R97131**			PrepDate			Analyst: **RB**
Specific Conductance	8800	0.10	0.10		umhos/cm	1	12/10/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141210D**	QC Batch: **R97131**			PrepDate			Analyst: **RB**
Specific Conductance	6000	0.10	0.10		umhos/cm	1	12/10/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141210D**	QC Batch: **R97131**			PrepDate			Analyst: **RB**
Specific Conductance	8500	0.10	0.10		umhos/cm	1	12/10/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 2:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141210D**	QC Batch: **R97131**			PrepDate			Analyst: **RB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/10/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 12:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141210D**	QC Batch: **R97131**			PrepDate			Analyst: **RB**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	12/10/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *24-Dec-14*

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N014103-001CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**97131**		
Client ID:	**ZZZZZZ**	Batch ID:	**R97131**	TestNo:	**EPA 120.1**			Analysis Date:	**12/10/2014**			SeqNo:	**1889429**		
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Specific Conductance			13910.000	0.10						13920	0.0719	10			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-200
Lab Order:	N014103	**Collection Date:**	12/8/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141211C**	QC Batch: **48163**				PrepDate	**12/11/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	9100	100	100		mg/L	1	12/11/2014 12:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141211C**	QC Batch: **48163**			PrepDate	**12/11/2014**		Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	6000	50	50		mg/L	1	12/11/2014 12:42 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 12:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141211C**	QC Batch: **48163**			PrepDate	**12/11/2014**		Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	3400	25	25		mg/L	1	12/11/2014 12:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48163** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/11/2014** RunNo: **97123**
Client ID: **PBW** Batch ID: **48163** TestNo: **SM2540C** Analysis Date: **12/11/2014** SeqNo: **1889356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48163** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/11/2014** RunNo: **97123**
Client ID: **LCSW** Batch ID: **48163** TestNo: **SM2540C** Analysis Date: **12/11/2014** SeqNo: **1889357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	939.000	10	1000	0	93.9	80	120				

Sample ID **N014122-003DDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/11/2014** RunNo: **97123**
Client ID: **ZZZZZZ** Batch ID: **48163** TestNo: **SM2540C** Analysis Date: **12/11/2014** SeqNo: **1889363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	972.000	10						974.0	0.206	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-200
Lab Order:	N014103	**Collection Date:**	12/8/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141216A**	QC Batch: **R97225**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/16/2014 03:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/17/2014 10:51 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-221-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 2:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141216A**	QC Batch: **R97225**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/16/2014 12:54 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141216A** QC Batch: **R97225** PrepDate							Analyst: **RB**
Hexavalent Chromium	3.6	0.016	0.20		µg/L	1	12/16/2014 01:14 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141217A** QC Batch: **48202** PrepDate **12/16/2014**							Analyst: **CEI**
Chromium	3.0	0.030	1.0		µg/L	1	12/17/2014 11:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141216A**	QC Batch: **R97225**			PrepDate			Analyst: **RB**
Hexavalent Chromium	530	0.80	10		µg/L	50	12/16/2014 01:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Chromium	500	0.15	5.0		µg/L	5	12/17/2014 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141216A** QC Batch: **R97225** PrepDate							Analyst: **RB**
Hexavalent Chromium	1200	1.6	20		µg/L	100	12/16/2014 02:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141217A** QC Batch: **48202** PrepDate **12/16/2014**							Analyst: **CEI**
Chromium	1200	0.76	25		µg/L	25	12/17/2014 01:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 2:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141216A** QC Batch: **R97225** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/16/2014 03:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141217A** QC Batch: **48202** PrepDate **12/16/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/17/2014 11:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 12:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141211E**	QC Batch: **R97144**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	30000	69	500		µg/L	50	12/11/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Chromium	31000	15	500		µg/L	500	12/17/2014 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97225** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **PBW** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97225** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **LCSW** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.899	0.20	5.000	0	98.0	90	110				

Sample ID **N014103-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.157	0.20	1.000	0.1480	101	90	110				

Sample ID **N014103-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.637	0.20	1.000	3.590	105	90	110				

Sample ID **N014103-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	776.730	10	250.0	529.4	98.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014103-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1702.000	20	500.0	1221	96.1	90	110				

Sample ID **N014103-005A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1218.510	20						1221	0.235	20	

Sample ID **N014103-005A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1721.430	20	500.0	1221	100	90	110	1702	1.14	20	

Sample ID **N014103-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.220	1.0	5.000	0	104	90	110				

Sample ID **N014103-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97225**
Client ID: **ZZZZZZ** Batch ID: **R97225** TestNo: **EPA 218.6** Analysis Date: **12/16/2014** SeqNo: **1893834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	1.0	5.000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97144** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **LCSW** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	487.986	10	500.0	0	97.6	85	115				

Sample ID **MB-R97144** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **PBW** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014056-007A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	134.835	10						121.8	10.2	20	

Sample ID **N014056-007A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	370.929	10	250.0	121.8	99.7	85	115				

Sample ID **N014056-007A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97144**
Client ID: **ZZZZZZ** Batch ID: **R97144** TestNo: **SM 3500-Cr B** Analysis Date: **12/11/2014** SeqNo: **1890043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	389.562	10	250.0	121.8	107	85	115	370.9	4.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48202	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2014	RunNo:	97192
Client ID:	PBW	Batch ID:	48202	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/17/2014	SeqNo:	1892348

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48202	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2014	RunNo:	97192
Client ID:	LCSW	Batch ID:	48202	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/17/2014	SeqNo:	1892349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.841	1.0	10.00	0	98.4	85	115				

Sample ID	N014126-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2014	RunNo:	97192
Client ID:	ZZZZZZ	Batch ID:	48202	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/17/2014	SeqNo:	1892353

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.704	1.0	10.00	1.480	92.2	75	125				

Sample ID	N014126-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2014	RunNo:	97192
Client ID:	ZZZZZZ	Batch ID:	48202	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/17/2014	SeqNo:	1892354

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.663	1.0	10.00	1.480	91.8	75	125	10.70	0.386	20	

Sample ID	N014121-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2014	RunNo:	97192
Client ID:	ZZZZZZ	Batch ID:	48202	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/17/2014	SeqNo:	1892373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.921	1.0	10.00	0.9927	89.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-200
Lab Order:	N014103	**Collection Date:**	12/8/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141210A**	QC Batch: **R97083**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	57	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Total (As CaCO3)	57	1.2	5.0		mg/L	1	12/10/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-003

Client Sample ID: MW-58BR-200
Collection Date: 12/9/2014 10:42:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141210A**	QC Batch: **R97083**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	39	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Total (As CaCO3)	39	1.2	5.0		mg/L	1	12/10/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 12:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141210A**	QC Batch: **R97083**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	84	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/10/2014
Alkalinity, Total (As CaCO3)	84	1.2	5.0		mg/L	1	12/10/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97083** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97083**
Client ID: **LCSW** Batch ID: **R97083** TestNo: **SM 2320 B** Analysis Date: **12/10/2014** SeqNo: **1887540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	99.147	5.0	100.0	0	99.1	85	115				
Alkalinity, Total (As CaCO3)	101.279	5.0	100.0	0	101	85	115				

Sample ID **MB-R97083** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97083**
Client ID: **PBW** Batch ID: **R97083** TestNo: **SM 2320 B** Analysis Date: **12/10/2014** SeqNo: **1887541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014103-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97083**
Client ID: **ZZZZZZ** Batch ID: **R97083** TestNo: **SM 2320 B** Analysis Date: **12/10/2014** SeqNo: **1887543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	55.437	5.0						56.50	1.90	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	55.437	5.0						56.50	1.90	30	

Sample ID **N014106-003DMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97083**
Client ID: **ZZZZZZ** Batch ID: **R97083** TestNo: **SM 2320 B** Analysis Date: **12/10/2014** SeqNo: **1887547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	362.473	5.0	100.0	265.5	97.0	75	125				
Alkalinity, Total (As CaCO3)	371.002	5.0	100.0	271.9	99.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014106-003DMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97083**
Client ID: **ZZZZZZ** Batch ID: **R97083** TestNo: **SM 2320 B** Analysis Date: **12/10/2014** SeqNo: **1887548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	361.407	5.0	100.0	265.5	95.9	75	125	362.5	0.295	20	
Alkalinity, Total (As CaCO3)	369.936	5.0	100.0	271.9	98.1	75	125	371.0	0.288	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-001

Client Sample ID: MW-64BR-200
Collection Date: 12/8/2014 1:42:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/10/2014 12:29 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Chloride	4700	25	500		mg/L	1000	12/10/2014 09:14 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Sulfate	610	1.6	25		mg/L	50	12/10/2014 09:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-003

Client Sample ID: MW-58BR-200
Collection Date: 12/9/2014 10:42:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/10/2014 12:41 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Chloride	2900	12	250		mg/L	500	12/10/2014 09:51 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Sulfate	540	1.6	25		mg/L	50	12/10/2014 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-007

Client Sample ID: MW-68-180-200
Collection Date: 12/9/2014 12:12:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/10/2014 12:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Chloride	820	5.0	100		mg/L	200	12/10/2014 10:04 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141210A** QC Batch: **R97086**				PrepDate			Analyst: **PS**
Sulfate	1100	6.6	100		mg/L	200	12/10/2014 10:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R97086_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **PBW** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R97086_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **LCSW** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.427	0.50	2.500	0	97.1	90	110				

Sample ID **N014103-001C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	2.5						0	0	20	

Sample ID **N014103-001C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	11.090	2.5	12.50	0	88.7	80	120				

Sample ID **N014103-001C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	11.010	2.5	12.50	0	88.1	80	120	11.09	0.724	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R97086_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **PBW** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R97086_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **LCSW** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.401	0.50	2.500	0	96.0	90	110				

Sample ID **N014106-003C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	322.400	25	125.0	196.2	101	80	120				

Sample ID **N014106-003C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	192.400	25						196.2	1.93	20	

Sample ID **N014106-003C-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	321.450	25	125.0	196.2	100	80	120	322.4	0.295	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R97086_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **PBW** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R97086_S04** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **LCSW** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.811	0.50	5.000	0	96.2	90	110				

Sample ID **N014106-003C-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	437.450	25	250.0	190.8	98.7	80	120				

Sample ID **N014106-003C-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	188.500	25						190.8	1.19	20	

Sample ID **N014106-003C-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97086**
Client ID: **ZZZZZZ** Batch ID: **R97086** TestNo: **EPA 300.0** Analysis Date: **12/10/2014** SeqNo: **1888441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	425.550	25	250.0	190.8	93.9	80	120	437.4	2.76	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-200
Lab Order:	N014103	**Collection Date:**	12/8/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_141223A**	QC Batch: **R97277**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/23/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141223A** QC Batch: **R97277** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	1.3	0.022	0.050		mg/L	1	12/23/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141223A** QC Batch: **R97277** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	4.2	0.11	0.25		mg/L	5	12/23/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141223A** QC Batch: **R97277** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.7	0.11	0.25		mg/L	5	12/23/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 2:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141223A** QC Batch: **R97277** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/23/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 12:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141223A** QC Batch: **R97277** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	30	0.44	1.0		mg/L	20	12/23/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97277** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97277**
Client ID: **PBW** Batch ID: **R97277** TestNo: **SM4500-NO3** Analysis Date: **12/23/2014** SeqNo: **1896690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97277** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97277**
Client ID: **LCSW** Batch ID: **R97277** TestNo: **SM4500-NO3** Analysis Date: **12/23/2014** SeqNo: **1896691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.956	0.050	1.000	0	95.6	85	115				

Sample ID **N014103-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97277**
Client ID: **ZZZZZZ** Batch ID: **R97277** TestNo: **SM4500-NO3** Analysis Date: **12/23/2014** SeqNo: **1896693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N014103-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97277**
Client ID: **ZZZZZZ** Batch ID: **R97277** TestNo: **SM4500-NO3** Analysis Date: **12/23/2014** SeqNo: **1896694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.992	0.050	1.000	0	99.2	75	125				

Sample ID **N014103-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97277**
Client ID: **ZZZZZZ** Batch ID: **R97277** TestNo: **SM4500-NO3** Analysis Date: **12/23/2014** SeqNo: **1896695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.089	0.050	1.000	0	109	75	125	0.9919	9.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-001

Client Sample ID: MW-64BR-200
Collection Date: 12/8/2014 1:42:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1700	19	100		ug/L	1	12/22/2014 09:09 PM
Calcium	430000	58	500		ug/L	1	12/22/2014 09:09 PM
Iron	320	1.3	20		ug/L	1	12/22/2014 09:09 PM
Magnesium	16000	11	100		ug/L	1	12/22/2014 09:09 PM
Sodium	2700000	3800	50000		ug/L	100	12/22/2014 06:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-003

Client Sample ID: MW-58BR-200
Collection Date: 12/9/2014 10:42:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	940	19	100		ug/L	1	12/22/2014 09:17 PM
Calcium	550000	290	2500		ug/L	5	12/23/2014 11:30 AM
Iron	ND	1.3	20		ug/L	1	12/22/2014 09:17 PM
Magnesium	26000	11	100		ug/L	1	12/22/2014 09:17 PM
Sodium	1400000	3800	50000		ug/L	100	12/22/2014 06:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014103
Project: PG&E Topock
Lab ID: N014103-007

Client Sample ID: MW-68-180-200
Collection Date: 12/9/2014 12:12:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	450	19	100		ug/L	1	12/22/2014 09:23 PM
Calcium	420000	58	500		ug/L	1	12/22/2014 09:23 PM
Iron	ND	1.3	20		ug/L	1	12/22/2014 09:23 PM
Magnesium	40000	11	100		ug/L	1	12/22/2014 09:23 PM
Sodium	530000	3800	50000		ug/L	100	12/22/2014 06:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48217	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	PBW	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896360

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-48217	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	LCSW	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896361

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20236.123	500	20000	0	101	85	115				

Sample ID	N014103-003B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1407924.938	50000	20000	1354000	272	75	125				S

Sample ID	N014103-003B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1402592.963	50000	20000	1354000	245	75	125	1408000	0.379	20	S

Sample ID	MB-48217	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97267
Client ID:	PBW	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	12.982	20									
Magnesium	13.620	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48217** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97267**
Client ID: **LCSW** Batch ID: **48217** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2014** SeqNo: **1896387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4697.130	100	5000	0	93.9	85	115				
Calcium	9539.634	500	10000	0	95.4	85	115				
Iron	113.605	20	100.0	0	114	85	115				
Magnesium	9849.387	100	10000	0	98.5	85	115				

Sample ID **N014103-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97267**
Client ID: **ZZZZZZ** Batch ID: **48217** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2014** SeqNo: **1896402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6802.061	100	5000	1679	102	75	125				
Calcium	428791.148	500	10000	425900	29.4	75	125				S
Iron	434.239	20	100.0	317.9	116	75	125				
Magnesium	25199.929	100	10000	15940	92.6	75	125				

Sample ID **N014103-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97267**
Client ID: **ZZZZZZ** Batch ID: **48217** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2014** SeqNo: **1896403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6664.624	100	5000	1679	99.7	75	125	6802	2.04	20	
Calcium	425502.582	500	10000	425900	-3.50	75	125	428800	0.770	20	S
Iron	423.885	20	100.0	317.9	106	75	125	434.2	2.41	20	
Magnesium	25047.490	100	10000	15940	91.1	75	125	25200	0.607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-200
Lab Order:	N014103	**Collection Date:**	12/8/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Arsenic	3.0	0.13	0.50		µg/L	5	12/17/2014 10:57 AM
Manganese	750	0.13	2.5		µg/L	5	12/17/2014 10:57 AM
Molybdenum	65	0.76	2.5		µg/L	5	12/17/2014 10:57 AM
Selenium	ND	0.34	2.5		µg/L	5	12/17/2014 10:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Arsenic	1.1	0.027	0.10		µg/L	1	12/17/2014 11:13 AM
Manganese	460	0.13	2.5		µg/L	5	12/17/2014 11:19 AM
Molybdenum	25	0.76	2.5		µg/L	5	12/17/2014 11:19 AM
Selenium	1.0	0.069	0.50		µg/L	1	12/17/2014 11:13 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Arsenic	1.4	0.027	0.10		µg/L	1	12/17/2014 11:24 AM
Manganese	ND	0.026	0.50		µg/L	1	12/17/2014 11:24 AM
Molybdenum	15	0.15	0.50		µg/L	1	12/17/2014 11:24 AM
Selenium	3.3	0.069	0.50		µg/L	1	12/17/2014 11:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Arsenic	6.7	0.027	0.10		µg/L	1	12/17/2014 11:35 AM
Manganese	47	0.026	0.50		µg/L	1	12/17/2014 11:35 AM
Molybdenum	44	0.76	2.5		µg/L	5	12/17/2014 11:41 AM
Selenium	2.7	0.069	0.50		µg/L	1	12/17/2014 11:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 2:02:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Arsenic	4.7	0.13	0.50		µg/L	5	12/17/2014 11:52 AM
Manganese	500	0.13	2.5		µg/L	5	12/17/2014 11:52 AM
Molybdenum	82	0.76	2.5		µg/L	5	12/17/2014 11:52 AM
Selenium	ND	0.34	2.5		µg/L	5	12/17/2014 11:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-200
Lab Order:	N014103	**Collection Date:**	12/9/2014 12:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014103-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141217A**	QC Batch: **48202**			PrepDate	**12/16/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/17/2014 11:57 AM
Manganese	ND	0.026	0.50		µg/L	1	12/17/2014 11:57 AM
Molybdenum	48	0.15	0.50		µg/L	1	12/17/2014 11:57 AM
Selenium	16	0.069	0.50		µg/L	1	12/17/2014 11:57 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *24-Dec-14*

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48202** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/16/2014** RunNo: **97192**
Client ID: **PBW** Batch ID: **48202** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2014** SeqNo: **1892462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48202** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/16/2014** RunNo: **97192**
Client ID: **LCSW** Batch ID: **48202** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2014** SeqNo: **1892463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.905	0.10	10.00	0	99.0	85	115				
Manganese	97.383	0.50	100.0	0	97.4	85	115				
Molybdenum	9.893	0.50	10.00	0	98.9	85	115				
Selenium	9.589	0.50	10.00	0	95.9	85	115				

Sample ID **N014126-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/16/2014** RunNo: **97192**
Client ID: **ZZZZZZ** Batch ID: **48202** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2014** SeqNo: **1892467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.382	0.10	10.00	1.591	97.9	75	125				
Manganese	91.945	0.50	100.0	0.6786	91.3	75	125				
Molybdenum	12.187	0.50	10.00	1.189	110	75	125				
Selenium	9.131	0.50	10.00	0.4122	87.2	75	125				

Sample ID **N014126-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/16/2014** RunNo: **97192**
Client ID: **ZZZZZZ** Batch ID: **48202** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2014** SeqNo: **1892468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.162	0.10	10.00	1.591	95.7	75	125	11.38	1.95	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014126-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/16/2014** RunNo: **97192**
Client ID: **ZZZZZZ** Batch ID: **48202** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2014** SeqNo: **1892468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.065	0.50	100.0	0.6786	91.4	75	125	91.95	0.130	20	
Molybdenum	12.300	0.50	10.00	1.189	111	75	125	12.19	0.921	20	
Selenium	8.811	0.50	10.00	0.4122	84.0	75	125	9.131	3.56	20	

Sample ID **N014121-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/16/2014** RunNo: **97192**
Client ID: **ZZZZZZ** Batch ID: **48202** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2014** SeqNo: **1892487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.069	0.10	10.00	0.5205	95.5	75	125				
Manganese	92.500	0.50	100.0	0	92.5	75	125				
Molybdenum	15.150	0.50	10.00	4.047	111	75	125				
Selenium	8.631	0.50	10.00	0.1270	85.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/9/2014 3:13:15 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/9/2014
COC Number: 8

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly				
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C				
			Filtered:	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA				
			Holding Time:	28	28	180	180	180	180	7	7	7	7	28				
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-64BR-200	12/8/2014	13:42	Water	X		X	X	X	X	X	X	X	X	X	N014103-1	4	
MW-221-200	12/9/2014	14:58	Water	X											-2	1	
MW-58BR-200	12/9/2014	10:42	Water	X		X	X	X	X	X	X	X	X	X	-3	4	
MW-62-065-200	12/9/2014	13:42	Water	X		X		X	X		X			X	-4	4	
MW-62-110-200	12/9/2014	13:58	Water	X		X		X	X		X			X	-5	4	
MW-62-190-200	12/9/2014	14:02	Water	X		X		X	X		X			X	-6	4	
MW-68-180-200	12/9/2014	12:12	Water		X	X	X	X	X	X	X	X	X	X	-7	4	
															TOTAL NUMBER OF CONTAINERS	25	

	Signatures	Date/Time
Approved by		12-9-14
Sampled by		1515
Relinquished by		
Received by		1515 12/9/14
Relinquished by		1740 12/9/14
Received by		12/9/14 1740

Shipping Details
Method of Shipment: courier
On Ice: yes / no 3.4°C IR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/9/2014	Workorder:	N014103
Rep sample Temp (Deg C):	3.4	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B For: QBM SCortes 12/10/2014

Reviewed By: gog 12/15/14

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014103-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(57.1766-57.0858)*1000000}{10}$$
$$= 9080 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 9100 mg/L

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/12/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48163	100	63.7892	63.7893	1	1	1		
LCS-48163	100	63.9728	64.0667	939	1	939		
N014103-001C	10	57.0858	57.1766	908	10	9080	13920	0.652
N014103-003C	20	55.5486	55.6679	1193	5	5965	8800	0.678
N014103-007C	40	63.9613	64.096	1347	2.5	3367.5	4300	0.783
N014105-001C	100	64.0972	64.1489	517	1	517	749	0.690
N014122-003D	100	53.8195	53.9169	974	1	974	1595	0.611
N014122-003D-DUP	100	61.3463	61.4435	972	1	972	1595	0.609

REB 12/22/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014103-003A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 3.5901 * 1

= 3.5901

Reporting result in two significant figures,

Cr^{+6}, µg/L = 3.6

12/23/2014

Sample ID: **N014103-001C @ pH 7.37**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.725mL)

= **0.021322 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (2.65) (0.021322 N) (1) * 1000

=56.5033 **mg/L**

Reporting results in two significant figures,

= 57 **mg/L** as CaCO3

12/10/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.021322 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (2.65 mL) (0.021322) (1) * 1000

= 56.5033 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 56.5033 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 57 **mg/L**

12/10/2014

SAMPLE CALCULATION

METHOD: EPA 3500 CRb
TEST NAME: Hexavalent Chromium
MATRIX: WATER

FORMULA:

Calculate the Dissolved Hexavalent chromium concentration, in µg/L, in the original sample as follows:

Hexavalent Chromium, µg/L = A*DF

Where:

A= mg/L, UV-VIS hexavalent chromium calculated concentration

DF= dilution factor

For **N014103-007A,** concentration in mg/L is calculated as follows:

Hexavalent Chromium , µg/L = 594.621 *50

= 29,731.05 µg/L

Reporting result in two significant figures,

Hexavalent Chromium = 30,000 µg/L

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014103-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 26.9854 * 100*(25/25)*1000

= 2698540

Reporting results in two significant figures,

Sodium, ug/L = 2700000

Nancy 12/24/201

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014103
Test Method: EPA 6010
Analysis Date: 12/22/14

Matrix: Water
Batch No.: 48217

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014103-003B DT 500X	Sodium	ug/L	1350572	PASS	1353591	0.22%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014103
Test Method: EPA 6010
Analysis Date: 12/22/14

Matrix: Water
Batch No.: 48217

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014103-001B DT 5X	Boron	ug/L	1862.94631	NA	1678.771	10.97%	10
N014103-001B DT 5X	Calcium	ug/L	420793.2109	PASS	425853	1.19%	10
N014103-001B DT 5X	Iron	ug/L	355.6260718	NA	317.8865	11.87%	10
N014103-001B DT 5X	Magnesium	ug/L	18705.22919	FAIL	15937.08	17.37%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *23-Dec-14*

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N014103-003B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97266
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1460880.103	50000	20000	1354000	536	80	120				S

Sample ID	N014103-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97267
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6756.303	100	5000	1679	102	80	120				
Calcium	428706.010	500	10000	425900	28.5	80	120				S
Iron	425.453	20	100.0	317.9	108	80	120				
Magnesium	25014.574	100	10000	15940	90.8	80	120				

DT of Na @100x and Ca@5x are within criteria

Nancy 12/24/201

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Manganese concentration, in ug/L, in the original sample as follows:

Manganese, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014103-006B,** the concentration in ug/L is calculated as follows:

Manganese, ug/L = 100.213461409462 * 5 * (25/25)

= 501.06730704731

Reporting results in two significant figures,

Manganese, ug/L = 500

12/23/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014103
Test Method: EPA 6020
Analysis Date: 12/17/2014

Matrix: Water
Batch No.: 48202

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014126-001B-DT 5X	Arsenic	µg/L	1.706799234	NA	1.590567307	7.31%	10
N014126-001B-DT 5X	Chromium	µg/L	1.555060223	NA	1.479558323	5.10%	10
N014126-001B-DT 5X	Manganese	µg/L	0.517138546	NA	0.678608611	23.79%	10
N014126-001B-DT 5X	Molybdenum	µg/L	1.23557571	NA	1.189384344	3.88%	10
N014126-001B-DT 5X	Selenium	µg/L	0.36314548	NA	0.412243146	11.91%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *17-Dec-14*

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID:	**N014126-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**97192**
Client ID:	**ZZZZZZ**	Batch ID:	**48202**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/17/2014**		SeqNo:	**1892466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.361	0.10	10.00	1.591	97.7	80	120				
Manganese	93.324	0.50	100.0	0.6786	92.6	80	120				
Molybdenum	12.173	0.50	10.00	1.189	110	80	120				
Selenium	9.300	0.50	10.00	0.4122	88.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014103
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N014126-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**97192**	
Client ID:	**ZZZZZZ**	Batch ID:	**48202**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/17/2014**		SeqNo:	**1892352**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.920	1.0	10.00	1.480	94.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

December 30, 2014

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014144

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 11, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014144-005, N014144-008 and N014144-010 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium and Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary for some analytes on samples N014144-004 and N014144-010 due to failed Internal Standard when samples were analyzed at no dilution possibly due to matrix interference.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014144-001B-MS and N014144-001B-MSD are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ASSET Laboratories

Date: *30-Dec-14*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014144
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014144-001A	MW-19-200	Water	12/10/2014 11:05:00 AM	12/11/2014	12/30/2014
N014144-001B	MW-19-200	Water	12/10/2014 11:05:00 AM	12/11/2014	12/30/2014
N014144-001C	MW-19-200	Water	12/10/2014 11:05:00 AM	12/11/2014	12/30/2014
N014144-002A	MW-57-070-200	Water	12/10/2014 8:20:00 AM	12/11/2014	12/30/2014
N014144-002B	MW-57-070-200	Water	12/10/2014 8:20:00 AM	12/11/2014	12/30/2014
N014144-002C	MW-57-070-200	Water	12/10/2014 8:20:00 AM	12/11/2014	12/30/2014
N014144-002D	MW-57-070-200	Water	12/10/2014 8:20:00 AM	12/11/2014	12/30/2014
N014144-003A	MW-60-125-200	Water	12/10/2014 3:03:00 PM	12/11/2014	12/30/2014
N014144-003B	MW-60-125-200	Water	12/10/2014 3:03:00 PM	12/11/2014	12/30/2014
N014144-003C	MW-60-125-200	Water	12/10/2014 3:03:00 PM	12/11/2014	12/30/2014
N014144-003D	MW-60-125-200	Water	12/10/2014 3:03:00 PM	12/11/2014	12/30/2014
N014144-004A	MW-61-110-200	Water	12/10/2014 9:06:00 AM	12/11/2014	12/30/2014
N014144-004B	MW-61-110-200	Water	12/10/2014 9:06:00 AM	12/11/2014	12/30/2014
N014144-004C	MW-61-110-200	Water	12/10/2014 9:06:00 AM	12/11/2014	12/30/2014
N014144-004D	MW-61-110-200	Water	12/10/2014 9:06:00 AM	12/11/2014	12/30/2014
N014144-005A	MW-66-165-200	Water	12/10/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-005B	MW-66-165-200	Water	12/10/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-005C	MW-66-165-200	Water	12/10/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-005D	MW-66-165-200	Water	12/10/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-006A	MW-222-200	Water	12/11/2014 7:34:00 AM	12/11/2014	12/30/2014
N014144-007A	MW-223-200	Water	12/11/2014 2:20:00 PM	12/11/2014	12/30/2014
N014144-008A	MW-67-185-200	Water	12/11/2014 10:14:00 AM	12/11/2014	12/30/2014
N014144-008B	MW-67-185-200	Water	12/11/2014 10:14:00 AM	12/11/2014	12/30/2014
N014144-008C	MW-67-185-200	Water	12/11/2014 10:14:00 AM	12/11/2014	12/30/2014
N014144-008D	MW-67-185-200	Water	12/11/2014 10:14:00 AM	12/11/2014	12/30/2014
N014144-009A	MW-67-225-200	Water	12/11/2014 1:48:00 PM	12/11/2014	12/30/2014
N014144-009B	MW-67-225-200	Water	12/11/2014 1:48:00 PM	12/11/2014	12/30/2014
N014144-009C	MW-67-225-200	Water	12/11/2014 1:48:00 PM	12/11/2014	12/30/2014
N014144-009D	MW-67-225-200	Water	12/11/2014 1:48:00 PM	12/11/2014	12/30/2014

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014144
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014144-010A	MW-67-260-200	Water	12/11/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-010B	MW-67-260-200	Water	12/11/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-010C	MW-67-260-200	Water	12/11/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-010D	MW-67-260-200	Water	12/11/2014 12:22:00 PM	12/11/2014	12/30/2014
N014144-011A	MW-69-195-200	Water	12/11/2014 8:50:00 AM	12/11/2014	12/30/2014
N014144-011B	MW-69-195-200	Water	12/11/2014 8:50:00 AM	12/11/2014	12/30/2014
N014144-011C	MW-69-195-200	Water	12/11/2014 8:50:00 AM	12/11/2014	12/30/2014
N014144-011D	MW-69-195-200	Water	12/11/2014 8:50:00 AM	12/11/2014	12/30/2014
N014144-012A	MW-74-240-200	Water	12/11/2014 8:12:00 AM	12/11/2014	12/30/2014
N014144-012B	MW-74-240-200	Water	12/11/2014 8:12:00 AM	12/11/2014	12/30/2014
N014144-012C	MW-74-240-200	Water	12/11/2014 8:12:00 AM	12/11/2014	12/30/2014
N014144-012D	MW-74-240-200	Water	12/11/2014 8:12:00 AM	12/11/2014	12/30/2014

ASSET LABORATORIES
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ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 11:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	2300	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	2700	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	8900	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	4400	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	6200	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141212B**	QC Batch: **R97151**			PrepDate			Analyst: **RB**
Specific Conductance	990	0.10	0.10		umhos/cm	1	12/12/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *30-Dec-14*

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014144-001C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97151**
Client ID: **ZZZZZZ** Batch ID: **R97151** TestNo: **EPA 120.1** Analysis Date: **12/12/2014** SeqNo: **1890206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2300.000	0.10						2290	0.436	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 11:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141216A**	QC Batch: **48193**				PrepDate	**12/16/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	1300	20	20		mg/L	1	12/16/2014 08:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141216A**	QC Batch: **48193**			PrepDate	**12/16/2014**		Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	2800	33	33		mg/L	1	12/16/2014 08:43 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141216A**	QC Batch: **48193**				PrepDate	**12/16/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/16/2014 08:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141216A**	QC Batch: **48193**				PrepDate	**12/16/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	12/16/2014 08:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141216A**	QC Batch: **48193**				PrepDate	**12/16/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/16/2014 08:43 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48193** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/16/2014** RunNo: **97237**
Client ID: **PBW** Batch ID: **48193** TestNo: **SM2540C** Analysis Date: **12/16/2014** SeqNo: **1894725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48193** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/16/2014** RunNo: **97237**
Client ID: **LCSW** Batch ID: **48193** TestNo: **SM2540C** Analysis Date: **12/16/2014** SeqNo: **1894726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	980.000	10	1000	0	98.0	80	120				

Sample ID **N014144-001CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/16/2014** RunNo: **97237**
Client ID: **ZZZZZZ** Batch ID: **48193** TestNo: **SM2540C** Analysis Date: **12/16/2014** SeqNo: **1894728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1302.000	20						1274	2.17	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 11:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A** QC Batch: **R97313**				PrepDate			Analyst: **PS**
Chromium, Hexavalent	630	2.8	20		µg/L	2	12/26/2014
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_141219A** QC Batch: **48212**				PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	680	0.15	5.0		µg/L	5	12/19/2014 11:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141217A**	QC Batch: **R97211**			PrepDate			Analyst: **RB**
Hexavalent Chromium	530	1.6	20		µg/L	100	12/17/2014 03:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	520	0.15	5.0		µg/L	5	12/19/2014 11:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A** QC Batch: **R97313**				PrepDate			Analyst: **PS**
Chromium, Hexavalent	950	2.8	20		µg/L	2	12/26/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141219A** QC Batch: **48212**				PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	980	0.76	25		µg/L	25	12/19/2014 02:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A**	QC Batch: **R97313**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	570	1.4	10		µg/L	1	12/26/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	540	0.15	5.0		µg/L	5	12/19/2014 12:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A** QC Batch: **R97313**				PrepDate			Analyst: **PS**
Chromium, Hexavalent	590	1.4	10		µg/L	1	12/26/2014
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_141219A** QC Batch: **48212**				PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	580	0.15	5.0		µg/L	5	12/19/2014 12:23 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-222-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 7:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141217A**	QC Batch: **R97211**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/17/2014 02:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-223-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 2:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141217A**	QC Batch: **R97211**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/17/2014 02:53 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A**	QC Batch: **R97313**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	1900	6.9	50		µg/L	5	12/26/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	1600	0.76	25		µg/L	25	12/19/2014 02:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A**	QC Batch: **R97313**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	3200	6.9	50		µg/L	5	12/26/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	3200	0.76	25		µg/L	25	12/23/2014 05:59 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A** QC Batch: **R97313**				PrepDate			Analyst: **PS**
Chromium, Hexavalent	740	1.4	10		µg/L	1	12/26/2014
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_141219A** QC Batch: **48212**				PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	680	0.15	5.0		µg/L	5	12/19/2014 12:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_141226A**	QC Batch: **R97313**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	950	2.8	20		µg/L	2	12/26/2014
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	970	0.76	25		µg/L	25	12/23/2014 06:05 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141217A**	QC Batch: **R97211**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/17/2014 03:12 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/19/2014 01:24 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97211** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **PBW** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97211** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **LCSW** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.954	0.20	5.000	0	99.1	90	110				

Sample ID **N014146-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20						1.063	2.25	20	

Sample ID **N014146-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.059	0.20	1.000	1.063	99.6	90	110				

Sample ID **N014146-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.089	0.20	1.000	1.063	103	90	110	2.059	1.46	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014146-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.196	0.20	1.000	1.115	108	90	110				

Sample ID **N014146-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.545	0.20	1.000	0.4564	109	90	110				

Sample ID **N014147-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.194	0.20	5.000	5.992	104	90	110				

Sample ID **N014144-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0.08090	100	90	110				

Sample ID **N014144-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97211**
Client ID: **ZZZZZZ** Batch ID: **R97211** TestNo: **EPA 218.6** Analysis Date: **12/17/2014** SeqNo: **1893523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.07060	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N014144-012A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:				RunNo:	**97211**
Client ID:	**ZZZZZZ**	Batch ID:	**R97211**	TestNo:	**EPA 218.6**			Analysis Date:	**12/17/2014**			SeqNo:	**1893525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.117	0.20	1.000	0.08340	103	90	110				

Sample ID	**N014144-002A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:				RunNo:	**97211**
Client ID:	**ZZZZZZ**	Batch ID:	**R97211**	TestNo:	**EPA 218.6**			Analysis Date:	**12/17/2014**			SeqNo:	**1893527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1025.490	20	500.0	530.3	99.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97313** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97313**
Client ID: **LCSW** Batch ID: **R97313** TestNo: **SM 3500-Cr B** Analysis Date: **12/26/2014** SeqNo: **1898964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	247.195	10	250.0	0	98.9	85	115				

Sample ID **MB-R97313** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97313**
Client ID: **PBW** Batch ID: **R97313** TestNo: **SM 3500-Cr B** Analysis Date: **12/26/2014** SeqNo: **1898965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014144-001A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97313**
Client ID: **ZZZZZZ** Batch ID: **R97313** TestNo: **SM 3500-Cr B** Analysis Date: **12/26/2014** SeqNo: **1898971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	656.716	20						628.9	4.33	20	

Sample ID **N014144-001A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97313**
Client ID: **ZZZZZZ** Batch ID: **R97313** TestNo: **SM 3500-Cr B** Analysis Date: **12/26/2014** SeqNo: **1898972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1129.970	20	500.0	628.9	100	85	115				

Sample ID **N014144-001A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97313**
Client ID: **ZZZZZZ** Batch ID: **R97313** TestNo: **SM 3500-Cr B** Analysis Date: **12/26/2014** SeqNo: **1898973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1132.798	20	500.0	628.9	101	85	115	1130	0.250	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48212	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97264
Client ID:	PBW	Batch ID:	48212	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2014	SeqNo:	1895810

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48212	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97264
Client ID:	LCSW	Batch ID:	48212	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2014	SeqNo:	1895811

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.899	1.0	10.00	0	99.0	85	115				

Sample ID	N014144-012B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97264
Client ID:	ZZZZZZ	Batch ID:	48212	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2014	SeqNo:	1895846

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.659	1.0	10.00	0.2967	93.6	75	125				

Sample ID	N014144-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97358
Client ID:	ZZZZZZ	Batch ID:	48212	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900684

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	709.220	5.0	10.00	677.8	314	75	125				S

Sample ID	N014144-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97358
Client ID:	ZZZZZZ	Batch ID:	48212	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	706.415	5.0	10.00	677.8	286	75	125	709.2	0.396	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 11:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	95	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	95	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	91	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	91	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	100	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	150	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	30	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	30	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97215** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **LCSW** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	101.496	5.0	100.0	0	101	85	115				
Alkalinity, Total (As CaCO3)	101.496	5.0	100.0	0	101	85	115				

Sample ID **MB-R97215** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **PBW** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014176-004CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **ZZZZZZ** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	117.521	5.0						118.6	0.905	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	117.521	5.0						118.6	0.905	30	

Sample ID **N014176-006CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **ZZZZZZ** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	204.060	5.0	100.0	104.7	99.4	75	125				
Alkalinity, Total (As CaCO3)	204.060	5.0	100.0	104.7	99.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014176-006CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **ZZZZZZ** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	202.991	5.0	100.0	104.7	98.3	75	125	204.1	0.525	20	
Alkalinity, Total (As CaCO3)	202.991	5.0	100.0	104.7	98.3	75	125	204.1	0.525	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014144
Project: PG&E Topock
Lab ID: N014144-001

Client Sample ID: MW-19-200
Collection Date: 12/10/2014 11:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/12/2014 06:32 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	500	2.5	50		mg/L	100	12/22/2014 12:44 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Sulfate	170	0.66	10		mg/L	20	12/13/2014 01:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014144
Project: PG&E Topock
Lab ID: N014144-005

Client Sample ID: MW-66-165-200
Collection Date: 12/10/2014 12:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/12/2014 11:47 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Chloride	1000	12	250		mg/L	500	12/12/2014 10:57 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Sulfate	490	1.6	25		mg/L	50	12/13/2014 01:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014144
Project: PG&E Topock
Lab ID: N014144-008

Client Sample ID: MW-67-185-200
Collection Date: 12/11/2014 10:14:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Bromide	3.7	0.14	2.5		mg/L	5	12/13/2014 12:25 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Chloride	1600	12	250		mg/L	500	12/12/2014 11:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Sulfate	570	1.6	25		mg/L	50	12/13/2014 02:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014144
Project: PG&E Topock
Lab ID: N014144-009

Client Sample ID: MW-67-225-200
Collection Date: 12/11/2014 1:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Bromide	1.3	0.028	0.50		mg/L	1	12/13/2014 12:38 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Chloride	1500	12	250		mg/L	500	12/12/2014 11:22 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Sulfate	1100	3.3	50		mg/L	100	12/13/2014 02:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT: CH2M HILL
Lab Order: N014144
Project: PG&E Topock
Lab ID: N014144-010

Client Sample ID: MW-67-260-200
Collection Date: 12/11/2014 12:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/13/2014 12:50 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Chloride	6000	25	500		mg/L	1000	12/12/2014 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141212A** QC Batch: **R97158**				PrepDate			Analyst: **PS**
Sulfate	790	3.3	50		mg/L	100	12/13/2014 02:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **LCS-R97158_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **LCSW** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.444	0.50	2.500	0	97.8	90	110				

Sample ID **MB-R97158_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **PBW** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **N014144-001C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.141	0.50						0.1490	0	20	

Sample ID **N014144-001C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.292	0.50	2.500	0.1490	85.7	80	120				

Sample ID **N014144-001C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.395	0.50	2.500	0.1490	89.8	80	120	2.292	4.40	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **LCS-R97158_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **LCSW** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.440	0.50	2.500	0	97.6	90	110				

Sample ID **MB-R97158_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **PBW** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **N014134-002A-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	84.000	10						83.06	1.13	20	

Sample ID **N014134-002A-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	134.420	10	50.00	83.06	103	80	120				

Sample ID **N014134-002A-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	133.920	10	50.00	83.06	102	80	120	134.4	0.373	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R97259_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **PBW** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R97259_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **LCSW** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.445	0.50	2.500	0	97.8	90	110				

Sample ID **N014176-006C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **ZZZZZZ** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	329.900	50						325.8	1.25	20	

Sample ID **N014176-006C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **ZZZZZZ** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	580.400	50	250.0	325.8	102	80	120				

Sample ID **N014176-002C-DUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **ZZZZZZ** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2804.000	500						2931	4.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **N014176-002C-MS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **ZZZZZZ** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5407.000	500	2500	2931	99.0	80	120				

Sample ID **N014176-002C-MSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97259**
Client ID: **ZZZZZZ** Batch ID: **R97259** TestNo: **EPA 300.0** Analysis Date: **12/22/2014** SeqNo: **1895790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5343.000	500	2500	2931	96.5	80	120	5407	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R97158_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **LCSW** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.865	0.50	5.000	0	97.3	90	110				

Sample ID **MB-R97158_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **PBW** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/12/2014** SeqNo: **1890478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N014144-001C-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/13/2014** SeqNo: **1890492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	175.400	10						174.4	0.572	20	

Sample ID **N014144-001C-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/13/2014** SeqNo: **1890493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	278.480	10	100.0	174.4	104	80	120				

Sample ID **N014144-001C-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97158**
Client ID: **ZZZZZZ** Batch ID: **R97158** TestNo: **EPA 300.0** Analysis Date: **12/13/2014** SeqNo: **1890494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	283.040	10	100.0	174.4	109	80	120	278.5	1.62	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	10	0.22	0.50		mg/L	10	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	4.3	0.11	0.25		mg/L	5	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	4.2	0.11	0.25		mg/L	5	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate							Analyst: **PS**
Nitrate/Nitrite as N	30	1.1	2.5		mg/L	50	12/24/2014

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	51	1.1	2.5		mg/L	50	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	26	0.44	1.0		mg/L	20	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.60	0.022	0.050		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	17	0.44	1.0		mg/L	20	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141224B** QC Batch: **R97291** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97291** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97291**
Client ID: **PBW** Batch ID: **R97291** TestNo: **SM4500-NO3** Analysis Date: **12/24/2014** SeqNo: **1897518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97291** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97291**
Client ID: **LCSW** Batch ID: **R97291** TestNo: **SM4500-NO3** Analysis Date: **12/24/2014** SeqNo: **1897519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.947	0.050	1.000	0	94.7	85	115				

Sample ID **N014144-012D-DUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97291**
Client ID: **ZZZZZZ** Batch ID: **R97291** TestNo: **SM4500-NO3** Analysis Date: **12/24/2014** SeqNo: **1897529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.404	0.050						0.4019	0.422	20	

Sample ID **N014144-012D-MS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97291**
Client ID: **ZZZZZZ** Batch ID: **R97291** TestNo: **SM4500-NO3** Analysis Date: **12/24/2014** SeqNo: **1897530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.348	0.050	1.000	0.4019	94.6	75	125				

Sample ID **N014144-012D-MSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97291**
Client ID: **ZZZZZZ** Batch ID: **R97291** TestNo: **SM4500-NO3** Analysis Date: **12/24/2014** SeqNo: **1897531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.317	0.050	1.000	0.4019	91.6	75	125	1.348	2.27	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 11:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	340	19	100		ug/L	1	12/22/2014 09:26 PM
Calcium	92000	58	500		ug/L	1	12/22/2014 09:26 PM
Iron	ND	1.3	20		ug/L	1	12/22/2014 09:26 PM
Magnesium	14000	11	100		ug/L	1	12/22/2014 09:26 PM
Sodium	310000	3800	50000		ug/L	100	12/22/2014 07:08 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**				PrepDate	**12/18/2014**	Analyst: **CEI**
Boron	600	19	100		ug/L	1	12/22/2014 09:31 PM
Calcium	290000	58	500		ug/L	1	12/22/2014 09:31 PM
Iron	ND	1.3	20		ug/L	1	12/22/2014 09:31 PM
Magnesium	48000	11	100		ug/L	1	12/22/2014 09:31 PM
Sodium	530000	3800	50000		ug/L	100	12/22/2014 07:12 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	750	19	100		ug/L	1	12/22/2014 09:36 PM
Calcium	350000	58	500		ug/L	1	12/22/2014 09:36 PM
Iron	38	1.3	20		ug/L	1	12/22/2014 09:36 PM
Magnesium	60000	11	100		ug/L	1	12/22/2014 09:36 PM
Sodium	870000	3800	50000		ug/L	100	12/22/2014 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1300	19	100		ug/L	1	12/22/2014 09:42 PM
Calcium	140000	58	500		ug/L	1	12/22/2014 09:42 PM
Iron	ND	1.3	20		ug/L	1	12/22/2014 09:42 PM
Magnesium	6800	11	100		ug/L	1	12/22/2014 09:42 PM
Sodium	1400000	3800	50000		ug/L	100	12/22/2014 07:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141222D**	QC Batch: **48217**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	2600	19	100		ug/L	1	12/22/2014 09:47 PM
Calcium	320000	58	500		ug/L	1	12/22/2014 09:47 PM
Iron	ND	1.3	20		ug/L	1	12/22/2014 09:47 PM
Magnesium	3600	11	100		ug/L	1	12/22/2014 09:47 PM
Sodium	3500000	9400	120000		ug/L	250	12/29/2014 10:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48217	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	PBW	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896360

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-48217	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	LCSW	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896361

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20236.123	500	20000	0	101	85	115				

Sample ID	N014103-003B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1407924.938	50000	20000	1354000	272	75	125				S

Sample ID	N014103-003B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97266
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1402592.963	50000	20000	1354000	245	75	125	1408000	0.379	20	S

Sample ID	MB-48217	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/18/2014	RunNo:	97267
Client ID:	PBW	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	12.982	20									
Magnesium	13.620	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48217** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97267**
Client ID: **LCSW** Batch ID: **48217** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2014** SeqNo: **1896387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4697.130	100	5000	0	93.9	85	115				
Calcium	9539.634	500	10000	0	95.4	85	115				
Iron	113.605	20	100.0	0	114	85	115				
Magnesium	9849.387	100	10000	0	98.5	85	115				

Sample ID **N014103-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97267**
Client ID: **ZZZZZZ** Batch ID: **48217** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2014** SeqNo: **1896402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6802.061	100	5000	1679	102	75	125				
Calcium	428791.148	500	10000	425900	29.4	75	125				S
Iron	434.239	20	100.0	317.9	116	75	125				
Magnesium	25199.929	100	10000	15940	92.6	75	125				

Sample ID **N014103-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97267**
Client ID: **ZZZZZZ** Batch ID: **48217** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2014** SeqNo: **1896403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6664.624	100	5000	1679	99.7	75	125	6802	2.04	20	
Calcium	425502.582	500	10000	425900	-3.50	75	125	428800	0.770	20	S
Iron	423.885	20	100.0	317.9	106	75	125	434.2	2.41	20	
Magnesium	25047.490	100	10000	15940	91.1	75	125	25200	0.607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 11:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**				PrepDate	**12/18/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 11:25 AM
Molybdenum	13	0.15	0.50		µg/L	1	12/19/2014 11:25 AM
Selenium	4.0	0.069	0.50		µg/L	1	12/19/2014 11:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 8:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	1.4	0.027	0.10		µg/L	1	12/19/2014 11:36 AM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 11:36 AM
Molybdenum	2.2	0.15	0.50		µg/L	1	12/19/2014 11:36 AM
Selenium	3.8	0.069	0.50		µg/L	1	12/19/2014 11:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 3:03:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	1.8	0.027	0.10		µg/L	1	12/19/2014 11:47 AM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 11:47 AM
Molybdenum	18	0.15	0.50		µg/L	1	12/19/2014 11:47 AM
Selenium	6.4	0.069	0.50		µg/L	1	12/19/2014 11:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	3.4	0.027	0.10		µg/L	1	12/19/2014 01:51 PM
Manganese	83	0.026	0.50		µg/L	1	12/19/2014 01:51 PM
Molybdenum	22	0.76	2.5		µg/L	5	12/19/2014 12:03 PM
Selenium	1.0	0.069	0.50		µg/L	1	12/19/2014 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-200
Lab Order:	N014144	**Collection Date:**	12/10/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	1.1	0.027	0.10		µg/L	1	12/19/2014 12:18 PM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 12:18 PM
Molybdenum	5.1	0.15	0.50		µg/L	1	12/19/2014 12:18 PM
Selenium	30	0.069	0.50		µg/L	1	12/19/2014 12:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 10:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	1.2	0.027	0.10		µg/L	1	12/19/2014 12:31 PM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 12:31 PM
Molybdenum	12	0.15	0.50		µg/L	1	12/19/2014 12:31 PM
Selenium	250	0.34	2.5		µg/L	5	12/19/2014 12:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	3.1	0.027	0.10		µg/L	1	12/19/2014 12:42 PM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 12:42 PM
Molybdenum	41	0.15	0.50		µg/L	1	12/19/2014 12:42 PM
Selenium	85	0.069	0.50		µg/L	1	12/19/2014 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	8.0	0.027	0.10		µg/L	1	12/19/2014 01:57 PM
Manganese	130	0.026	0.50		µg/L	1	12/19/2014 01:57 PM
Molybdenum	87	0.76	2.5		µg/L	5	12/19/2014 12:58 PM
Selenium	0.78	0.069	0.50		µg/L	1	12/19/2014 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	12/19/2014 01:04 PM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 01:04 PM
Molybdenum	90	0.15	0.50		µg/L	1	12/19/2014 01:04 PM
Selenium	11	0.069	0.50		µg/L	1	12/19/2014 01:04 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Dec-14*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-200
Lab Order:	N014144	**Collection Date:**	12/11/2014 8:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014144-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141219A**	QC Batch: **48212**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	9.7	0.027	0.10		µg/L	1	12/19/2014 01:24 PM
Manganese	ND	0.026	0.50		µg/L	1	12/19/2014 01:24 PM
Molybdenum	58	0.15	0.50		µg/L	1	12/19/2014 01:24 PM
Selenium	0.56	0.069	0.50		µg/L	1	12/19/2014 01:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *30-Dec-14*

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48212** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97264**
Client ID: **PBW** Batch ID: **48212** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2014** SeqNo: **1895862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48212** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97264**
Client ID: **LCSW** Batch ID: **48212** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2014** SeqNo: **1895863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.261	0.10	10.00	0	103	85	115				
Manganese	97.763	0.50	100.0	0	97.8	85	115				
Molybdenum	9.583	0.50	10.00	0	95.8	85	115				
Selenium	10.688	0.50	10.00	0	107	85	115				

Sample ID **N014144-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97264**
Client ID: **ZZZZZZ** Batch ID: **48212** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2014** SeqNo: **1895889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.962	0.10	10.00	1.096	109	75	125				
Manganese	85.043	0.50	100.0	0	85.0	75	125				
Molybdenum	25.668	0.50	10.00	13.34	123	75	125				
Selenium	14.751	0.50	10.00	4.012	107	75	125				

Sample ID **N014144-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97264**
Client ID: **ZZZZZZ** Batch ID: **48212** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2014** SeqNo: **1895890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.180	0.10	10.00	1.096	111	75	125	11.96	1.81	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014144-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97264**
Client ID: **ZZZZZZ** Batch ID: **48212** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2014** SeqNo: **1895890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	84.795	0.50	100.0	0	84.8	75	125	85.04	0.291	20	
Molybdenum	25.487	0.50	10.00	13.34	122	75	125	25.67	0.710	20	
Selenium	14.096	0.50	10.00	4.012	101	75	125	14.75	4.54	20	

Sample ID **N014144-012B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97264**
Client ID: **ZZZZZZ** Batch ID: **48212** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2014** SeqNo: **1895898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.049	0.10	10.00	9.711	103	75	125				
Manganese	91.414	0.50	100.0	0	91.4	75	125				
Molybdenum	69.725	0.50	10.00	57.54	122	75	125				
Selenium	9.829	0.50	10.00	0.5623	92.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/11/2014 2:31:54 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/11/2014
COC Number: 11

				Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	7	7	7	7	28			
	DATE	TIME	Matrix														
MW-19-200	12/10/2014	11:05	Water		X		X	X	X	X	X	X	X		ND14144-1	3	
MW-57-070-200	12/10/2014	8:20	Water	X		X		X	X		X			X	-2	4	
MW-60-125-200	12/10/2014	15:03	Water		X	X		X	X		X			X	-3	4	
MW-61-110-200	12/10/2014	9:06	Water		X	X		X	X		X			X	-4	4	
MW-66-165-200	12/10/2014	12:22	Water		X	X	X	X	X	X	X	X	X	X	-5	4	
MW-222-200	12/11/2014	7:34	Water	X											-6	1	
MW-223-200	12/11/2014	14:20	Water	X											-7	1	
MW-67-185-200	12/11/2014	10:14	Water		X	X	X	X	X	X	X	X	X	X	-8	4	
MW-67-225-200	12/11/2014	13:48	Water		X	X	X	X	X	X	X	X	X	X	-9	4	
MW-67-260-200	12/11/2014	12:22	Water		X	X	X	X	X	X	X	X	X	X	-10	4	
MW-69-195-200	12/11/2014	8:50	Water		X	X		X	X		X			X	-11	4	
MW-74-240-200	12/11/2014	8:12	Water	X		X		X	X		X			X	-12	4	
															TOTAL NUMBER OF CONTAINERS	41	

	Signatures	Date/Time
Approved by		12-11-14
Sampled by		1650
Relinquished by		
Received by		12/11/14 1650
Relinquished by		12/11/14 1813
Received by		12/11/14

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.8°C / 1.6°C
Airbill No: 1KH2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marion

Special Instructions:

Nov 3 to Dec 18, 2014

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/11/2014	Workorder:	N014144
Rep sample Temp (Deg C):	1.6, 1.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B AC SCortes 12/15/2014

Reviewed By: gog 12/17/14

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014144-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.3672-61.3035)*1000000}{50}$$
$$= 1274 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 1300 mg/L

REB 12/23/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/18/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48193	100	63.7888	63.7889	1	1	1		
LCS-48193	100	53.9321	54.0301	980	1	980		
LCS-1	100	53.819	53.9156	966	1	966		
LCS-2	100	57.0843	57.1837	994	1	994		
LCS-3	100	64.2462	64.3448	986	1	986		
N014144-001C	50	61.3035	61.3672	637	2	1274	2290	0.556
N014144-001C-DUP	50	60.5165	60.5816	651	2	1302	2290	0.569
N014144-005C	30	60.6232	60.7074	842	3.33333	2806.66386	4410	0.636
N014144-008C	20	63.9712	64.0504	792	5	3960	6230	0.636
N014144-009C	20	62.4423	62.5332	909	5	4545	7320	0.621
N014144-010C	10	60.9747	61.0869	1122	10	11220	18110	0.620
N014146-001E	100	60.3375	60.3728	353	1	353	423	0.835
N014146-002E	100	55.5475	55.5784	309	1	309	350	0.883
N014146-003E	100	60.6648	60.6991	343	1	343	412	0.833
N014147-001D	100	63.9605	64.065	1045	1	1045	1659	0.630
N014162-003F	50	61.3463	61.477	1307	2	2614	3020	0.866

REB 12/23/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014144-002A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 5.3029 * 100

= 530.29

Reporting result in two significant figures,

Cr^{+6}, µg/L = 530

Nancy 12/24/201

Sample ID: **N014144-001C @ pH 7.69**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.7mL)

= **0.0213675 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.45) (0.0213675 N) (1) * 1000

=95.08547 **mg/L**

Reporting results in two significant figures,

= 95 **mg/L** as CaCO3

12/26/2014

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.0213675 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.45 mL) (0.0213675N) (1) * 1000

= 95.08547 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 95.08547 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 95 **mg/L**

12/26/2014

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014144-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 8.72 * 20

= 174.4

Reporting result in two significant figures,

Sulfate, mg/L = 170

12/29/2014

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N014144-004A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 569.316 *1

= 569.316 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 570

12/29/2014

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014144-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 3.10546 * 100 * (25/25) * 1000

= 310546.3

Reporting results in two significant figures,

Sodium, ug/L = 310000

Nancy 12/30/2014

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014144
Test Method: EPA 6010
Analysis Date: 12/22/14

Matrix: Water
Batch No.: 48217

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014103-003B DT 500X	Sodium	ug/L	1350572	PASS	1353591	0.22%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014144
Test Method: EPA 6010
Analysis Date: 12/22/14

Matrix: Water
Batch No.: 48217

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014103-001B DT 5X	Boron	ug/L	1862.94631	NA	1678.771	10.97%	10
N014103-001B DT 5X	Calcium	ug/L	420793.2109	PASS	425853	1.19%	10
N014103-001B DT 5X	Iron	ug/L	355.6260718	NA	317.8865	11.87%	10
N014103-001B DT 5X	Magnesium	ug/L	18705.22919	FAIL	15937.08	17.37%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *29-Dec-14*

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N014103-003B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97266
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1460880.103	50000	20000	1354000	536	80	120				S

Sample ID	N014103-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97267
Client ID:	ZZZZZZ	Batch ID:	48217	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2014	SeqNo:	1896401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6756.303	100	5000	1679	102	80	120				
Calcium	428706.010	500	10000	425900	28.5	80	120				S
Iron	425.453	20	100.0	317.9	108	80	120				
Magnesium	25014.574	100	10000	15940	90.8	80	120				

DT of Na @500x and Ca @5x are within criteria

Nancy 12/30/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014144-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 135.558 * 5 * (25/25)

= 677.7894

Reporting results in two significant figures,

Chromium, ug/L = 680

12/30/2014

ASSET Laboratories

ICP-MS Metals in Water

Dilution Test Summary

Work Order No.: N014144
Test Method: EPA 6020
Analysis Date: 12/19/14, 12/29/14

Matrix: Water
Batch No.: 48212

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn & Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014144-001B DT 5X	Arsenic	µg/L	1.100341	NA	1.095731	0.42%	10
N014144-001B DT 25X	Chromium	µg/L	706.3219051	PASS	677.7894123	4.21%	10
N014144-001B DT 5X	Manganese	µg/L	0	NA	0		10
N014144-001B DT 5X	Molybdenum	µg/L	12.83917	PASS	13.33588	3.72%	10
N014144-001B DT 5X	Selenium	µg/L	4.610745	NA	4.011608	14.94%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *26-Dec-14*

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014144-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**97264**
Client ID:	**ZZZZZZ**	Batch ID:	**48212**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**12/19/2014**		SeqNo:	**1895888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.638	0.10	10.00	1.096	105	80	120				
Manganese	84.671	0.50	100.0	0	84.7	80	120				
Molybdenum	24.509	0.50	10.00	13.34	112	80	120				
Selenium	14.692	0.50	10.00	4.012	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Date: *30-Dec-14*

CLIENT: CH2M HILL
Work Order: N014144
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N014144-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**97358**
Client ID:	**ZZZZZZ**	Batch ID:	**48212**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/29/2014**		SeqNo:	**1900683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	698.106	5.0	10.00	677.8	203	80	120				S

DT @25x is within criteria

12/30/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

January 06, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014176

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 16, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N014176-028 due to matrix spike not meeting peak retention time criteria possibly due to matrix interference. Matrix spike was analyzed with dilution and retention time met method criteria. Sample was reported at dilution that meet matrix spike peak retention time criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014176-002, N014176-003, N014176-004, N014176-008, N014176-009, N014176-015, N014176-016 and N014176-027 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on samples N014176-016B-MS, N014176-002B-MS and N014176-002B-MSD are outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014176-001B-MS, N014176-

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001B-MSD and N014176-015B-MS are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary for some analytes on samples N014176-001, N014176-002, N014176-004, N014176-008, N014176-010, N014176-015, N014176-016, N014176-027 and N014176-028 due to failing Internal Standard when samples were analyzed at no dilution.

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ASSET Laboratories

Date: *06-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014176
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014176-001A	MW-12-200	Water	12/15/2014 7:48:00 AM	12/16/2014	1/6/2015
N014176-001B	MW-12-200	Water	12/15/2014 7:48:00 AM	12/16/2014	1/6/2015
N014176-001C	MW-12-200	Water	12/15/2014 7:48:00 AM	12/16/2014	1/6/2015
N014176-001D	MW-12-200	Water	12/15/2014 7:48:00 AM	12/16/2014	1/6/2015
N014176-002A	MW-122-200	Water	12/15/2014 8:00:00 AM	12/16/2014	1/6/2015
N014176-002B	MW-122-200	Water	12/15/2014 8:00:00 AM	12/16/2014	1/6/2015
N014176-002C	MW-122-200	Water	12/15/2014 8:00:00 AM	12/16/2014	1/6/2015
N014176-002D	MW-122-200	Water	12/15/2014 8:00:00 AM	12/16/2014	1/6/2015
N014176-002E	MW-122-200	Water	12/15/2014 8:00:00 AM	12/16/2014	1/6/2015
N014176-003A	MW-124-200	Water	12/15/2014 7:00:00 AM	12/16/2014	1/6/2015
N014176-003B	MW-124-200	Water	12/15/2014 7:00:00 AM	12/16/2014	1/6/2015
N014176-003C	MW-124-200	Water	12/15/2014 7:00:00 AM	12/16/2014	1/6/2015
N014176-003D	MW-124-200	Water	12/15/2014 7:00:00 AM	12/16/2014	1/6/2015
N014176-003E	MW-124-200	Water	12/15/2014 7:00:00 AM	12/16/2014	1/6/2015
N014176-004A	MW-132-200	Water	12/15/2014 9:00:00 AM	12/16/2014	1/6/2015
N014176-004B	MW-132-200	Water	12/15/2014 9:00:00 AM	12/16/2014	1/6/2015
N014176-004C	MW-132-200	Water	12/15/2014 9:00:00 AM	12/16/2014	1/6/2015
N014176-004D	MW-132-200	Water	12/15/2014 9:00:00 AM	12/16/2014	1/6/2015
N014176-005A	MW-134-200	Water	12/15/2014 7:50:00 AM	12/16/2014	1/6/2015
N014176-005B	MW-134-200	Water	12/15/2014 7:50:00 AM	12/16/2014	1/6/2015
N014176-005C	MW-134-200	Water	12/15/2014 7:50:00 AM	12/16/2014	1/6/2015
N014176-006A	MW-20-070-200	Water	12/15/2014 10:52:00 AM	12/16/2014	1/6/2015
N014176-006B	MW-20-070-200	Water	12/15/2014 10:52:00 AM	12/16/2014	1/6/2015
N014176-006C	MW-20-070-200	Water	12/15/2014 10:52:00 AM	12/16/2014	1/6/2015
N014176-006D	MW-20-070-200	Water	12/15/2014 10:52:00 AM	12/16/2014	1/6/2015
N014176-006E	MW-20-070-200	Water	12/15/2014 10:52:00 AM	12/16/2014	1/6/2015
N014176-007A	MW-20-100-200	Water	12/15/2014 11:22:00 AM	12/16/2014	1/6/2015
N014176-007B	MW-20-100-200	Water	12/15/2014 11:22:00 AM	12/16/2014	1/6/2015
N014176-007C	MW-20-100-200	Water	12/15/2014 11:22:00 AM	12/16/2014	1/6/2015

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014176
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014176-007D	MW-20-100-200	Water	12/15/2014 11:22:00 AM	12/16/2014	1/6/2015
N014176-007E	MW-20-100-200	Water	12/15/2014 11:22:00 AM	12/16/2014	1/6/2015
N014176-008A	MW-20-130-200	Water	12/15/2014 1:05:00 PM	12/16/2014	1/6/2015
N014176-008B	MW-20-130-200	Water	12/15/2014 1:05:00 PM	12/16/2014	1/6/2015
N014176-008C	MW-20-130-200	Water	12/15/2014 1:05:00 PM	12/16/2014	1/6/2015
N014176-008D	MW-20-130-200	Water	12/15/2014 1:05:00 PM	12/16/2014	1/6/2015
N014176-008E	MW-20-130-200	Water	12/15/2014 1:05:00 PM	12/16/2014	1/6/2015
N014176-009A	MW-26-200	Water	12/15/2014 9:10:00 AM	12/16/2014	1/6/2015
N014176-009B	MW-26-200	Water	12/15/2014 9:10:00 AM	12/16/2014	1/6/2015
N014176-009C	MW-26-200	Water	12/15/2014 9:10:00 AM	12/16/2014	1/6/2015
N014176-009D	MW-26-200	Water	12/15/2014 9:10:00 AM	12/16/2014	1/6/2015
N014176-009E	MW-26-200	Water	12/15/2014 9:10:00 AM	12/16/2014	1/6/2015
N014176-010A	MW-36-020-200	Water	12/15/2014 10:05:00 AM	12/16/2014	1/6/2015
N014176-010B	MW-36-020-200	Water	12/15/2014 10:05:00 AM	12/16/2014	1/6/2015
N014176-010C	MW-36-020-200	Water	12/15/2014 10:05:00 AM	12/16/2014	1/6/2015
N014176-011A	MW-36-040-200	Water	12/15/2014 11:39:00 AM	12/16/2014	1/6/2015
N014176-011B	MW-36-040-200	Water	12/15/2014 11:39:00 AM	12/16/2014	1/6/2015
N014176-011C	MW-36-040-200	Water	12/15/2014 11:39:00 AM	12/16/2014	1/6/2015
N014176-011D	MW-36-040-200	Water	12/15/2014 11:39:00 AM	12/16/2014	1/6/2015
N014176-012A	MW-36-050-200	Water	12/15/2014 1:11:00 PM	12/16/2014	1/6/2015
N014176-012B	MW-36-050-200	Water	12/15/2014 1:11:00 PM	12/16/2014	1/6/2015
N014176-012C	MW-36-050-200	Water	12/15/2014 1:11:00 PM	12/16/2014	1/6/2015
N014176-013A	MW-36-070-200	Water	12/15/2014 10:55:00 AM	12/16/2014	1/6/2015
N014176-013B	MW-36-070-200	Water	12/15/2014 10:55:00 AM	12/16/2014	1/6/2015
N014176-013C	MW-36-070-200	Water	12/15/2014 10:55:00 AM	12/16/2014	1/6/2015
N014176-014A	MW-36-090-200	Water	12/15/2014 12:23:00 PM	12/16/2014	1/6/2015
N014176-014B	MW-36-090-200	Water	12/15/2014 12:23:00 PM	12/16/2014	1/6/2015
N014176-014C	MW-36-090-200	Water	12/15/2014 12:23:00 PM	12/16/2014	1/6/2015
N014176-015A	MW-51-200	Water	12/15/2014 3:30:00 PM	12/16/2014	1/6/2015
N014176-015B	MW-51-200	Water	12/15/2014 3:30:00 PM	12/16/2014	1/6/2015

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3151 W. Post Rd., Las Vegas, NV 89118
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014176
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014176-015C	MW-51-200	Water	12/15/2014 3:30:00 PM	12/16/2014	1/6/2015
N014176-015D	MW-51-200	Water	12/15/2014 3:30:00 PM	12/16/2014	1/6/2015
N014176-016A	MW-59-100-200	Water	12/15/2014 2:22:00 PM	12/16/2014	1/6/2015
N014176-016B	MW-59-100-200	Water	12/15/2014 2:22:00 PM	12/16/2014	1/6/2015
N014176-016C	MW-59-100-200	Water	12/15/2014 2:22:00 PM	12/16/2014	1/6/2015
N014176-016D	MW-59-100-200	Water	12/15/2014 2:22:00 PM	12/16/2014	1/6/2015
N014176-017A	TW-02D-200	Water	12/15/2014 2:50:00 PM	12/16/2014	1/6/2015
N014176-017B	TW-02D-200	Water	12/15/2014 2:50:00 PM	12/16/2014	1/6/2015
N014176-017C	TW-02D-200	Water	12/15/2014 2:50:00 PM	12/16/2014	1/6/2015
N014176-018A	MW-123-200	Water	12/16/2014 6:45:00 AM	12/16/2014	1/6/2015
N014176-018B	MW-123-200	Water	12/16/2014 6:45:00 AM	12/16/2014	1/6/2015
N014176-018C	MW-123-200	Water	12/16/2014 6:45:00 AM	12/16/2014	1/6/2015
N014176-018D	MW-123-200	Water	12/16/2014 6:45:00 AM	12/16/2014	1/6/2015
N014176-019A	MW-224-200	Water	12/16/2014 6:20:00 AM	12/16/2014	1/6/2015
N014176-020A	MW-225-200	Water	12/16/2014 6:23:00 AM	12/16/2014	1/6/2015
N014176-021A	MW-226-200	Water	12/16/2014 2:09:00 PM	12/16/2014	1/6/2015
N014176-022A	MW-39-040-200	Water	12/16/2014 8:55:00 AM	12/16/2014	1/6/2015
N014176-022B	MW-39-040-200	Water	12/16/2014 8:55:00 AM	12/16/2014	1/6/2015
N014176-022C	MW-39-040-200	Water	12/16/2014 8:55:00 AM	12/16/2014	1/6/2015
N014176-023A	MW-39-050-200	Water	12/16/2014 10:58:00 AM	12/16/2014	1/6/2015
N014176-023B	MW-39-050-200	Water	12/16/2014 10:58:00 AM	12/16/2014	1/6/2015
N014176-023C	MW-39-050-200	Water	12/16/2014 10:58:00 AM	12/16/2014	1/6/2015
N014176-024A	MW-39-060-200	Water	12/16/2014 12:35:00 PM	12/16/2014	1/6/2015
N014176-024B	MW-39-060-200	Water	12/16/2014 12:35:00 PM	12/16/2014	1/6/2015
N014176-024C	MW-39-060-200	Water	12/16/2014 12:35:00 PM	12/16/2014	1/6/2015
N014176-024D	MW-39-060-200	Water	12/16/2014 12:35:00 PM	12/16/2014	1/6/2015
N014176-025A	MW-39-070-200	Water	12/16/2014 9:57:00 AM	12/16/2014	1/6/2015
N014176-025B	MW-39-070-200	Water	12/16/2014 9:57:00 AM	12/16/2014	1/6/2015
N014176-025C	MW-39-070-200	Water	12/16/2014 9:57:00 AM	12/16/2014	1/6/2015
N014176-025D	MW-39-070-200	Water	12/16/2014 9:57:00 AM	12/16/2014	1/6/2015

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014176
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014176-026A	MW-39-080-200	Water	12/16/2014 11:44:00 AM	12/16/2014	1/6/2015
N014176-026B	MW-39-080-200	Water	12/16/2014 11:44:00 AM	12/16/2014	1/6/2015
N014176-026C	MW-39-080-200	Water	12/16/2014 11:44:00 AM	12/16/2014	1/6/2015
N014176-027A	MW-50-200-200	Water	12/16/2014 1:48:00 PM	12/16/2014	1/6/2015
N014176-027B	MW-50-200-200	Water	12/16/2014 1:48:00 PM	12/16/2014	1/6/2015
N014176-027C	MW-50-200-200	Water	12/16/2014 1:48:00 PM	12/16/2014	1/6/2015
N014176-028A	MW-66BR-270-200	Water	12/16/2014 9:40:00 AM	12/16/2014	1/6/2015
N014176-028B	MW-66BR-270-200	Water	12/16/2014 9:40:00 AM	12/16/2014	1/6/2015
N014176-028C	MW-66BR-270-200	Water	12/16/2014 9:40:00 AM	12/16/2014	1/6/2015
N014176-028D	MW-66BR-270-200	Water	12/16/2014 9:40:00 AM	12/16/2014	1/6/2015

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-002

Client Sample ID: MW-122-200
Collection Date: 12/15/2014 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141218A** QC Batch: **R97214** PrepDate Analyst: **RB**							
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-132-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-134-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1900	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	2600	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-020-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-040-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:39:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-050-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:11:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141218A**	QC Batch: **R97214**				PrepDate		Analyst: **RB**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141218A** QC Batch: **R97214** PrepDate Analyst: **RB**							
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-02D-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 6:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1500	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-040-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 8:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-050-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218A**	QC Batch: **R97214**			PrepDate			Analyst: **RB**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/18/2014 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-060-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 12:35:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218B**	QC Batch: **R97216**			PrepDate			Analyst: **RB**
Specific Conductance	1500	0.10	0.10		umhos/cm	1	12/18/2014 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-070-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:57:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141218B** QC Batch: **R97216** PrepDate Analyst: **RB**							
Specific Conductance	2200	0.10	0.10		umhos/cm	1	12/18/2014 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-080-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218B**	QC Batch: **R97216**			PrepDate			Analyst: **RB**
Specific Conductance	4400	0.10	0.10		umhos/cm	1	12/18/2014 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141218B**	QC Batch: **R97216**				PrepDate		Analyst: **RB**
Specific Conductance	21000	0.10	0.10		umhos/cm	1	12/18/2014 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-028		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141218B**	QC Batch: **R97216**			PrepDate			Analyst: **RB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/18/2014 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014176-001 C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97214**
Client ID: **ZZZZZZ** Batch ID: **R97214** TestNo: **EPA 120.1** Analysis Date: **12/18/2014** SeqNo: **1893554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7090.000	0.10						7070	0.282	10	

Sample ID **N014176-002C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97214**
Client ID: **ZZZZZZ** Batch ID: **R97214** TestNo: **EPA 120.1** Analysis Date: **12/18/2014** SeqNo: **1893561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11180.000	0.10						11170	0.0895	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N014176-024C DUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**97216**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97216**	TestNo:	**EPA 120.1**			Analysis Date:	**12/18/2014**			SeqNo:	**1893611**	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual
Specific Conductance		1462.000		0.10						1459		0.205	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	6800	100	100		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	2700	33	33		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-132-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	6800	100	100		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	1100	10	10		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	1500	20	20		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	6900	100	100		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	2700	33	33		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-020-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	7700	100	100		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-050-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:11:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141218F**	QC Batch: **48226**				PrepDate	**12/18/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	720	10	10		mg/L	1	12/18/2014 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141219E**	QC Batch: **48237**				PrepDate	**12/19/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	7200	100	100		mg/L	1	12/19/2014 09:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141219E**	QC Batch: **48237**				PrepDate	**12/19/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	6900	100	100		mg/L	1	12/19/2014 09:56 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-070-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:57:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141219E**	QC Batch: **48237**				PrepDate	**12/19/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	1200	20	20		mg/L	1	12/19/2014 09:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141222B**	QC Batch: **48249**				PrepDate	**12/22/2014**	Analyst: **admin**
Total Dissolved Solids (Residue, Filterable)	13000	200	200		mg/L	1	12/22/2014 12:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48226** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/18/2014** RunNo: **97324**
Client ID: **PBW** Batch ID: **48226** TestNo: **SM2540C** Analysis Date: **12/18/2014** SeqNo: **1899393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48226** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/18/2014** RunNo: **97324**
Client ID: **LCSW** Batch ID: **48226** TestNo: **SM2540C** Analysis Date: **12/18/2014** SeqNo: **1899394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	992.000	10	1000	0	99.2	80	120				

Sample ID **N014176-001C-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/18/2014** RunNo: **97324**
Client ID: **ZZZZZZ** Batch ID: **48226** TestNo: **SM2540C** Analysis Date: **12/18/2014** SeqNo: **1899396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3905.000	50						4080	4.38	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48237** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/19/2014** RunNo: **97257**
Client ID: **PBW** Batch ID: **48237** TestNo: **SM2540C** Analysis Date: **12/19/2014** SeqNo: **1895552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48237** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/19/2014** RunNo: **97257**
Client ID: **LCSW** Batch ID: **48237** TestNo: **SM2540C** Analysis Date: **12/19/2014** SeqNo: **1895553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	978.000	10	1000	0	97.8	80	120				

Sample ID **N014176-015CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/19/2014** RunNo: **97257**
Client ID: **ZZZZZZ** Batch ID: **48237** TestNo: **SM2540C** Analysis Date: **12/19/2014** SeqNo: **1895555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	7120.000	100						7150	0.420	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-48249	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/22/2014	RunNo:	97280
Client ID:	PBW	Batch ID:	48249	TestNo:	SM2540C			Analysis Date:	12/22/2014	SeqNo:	1896796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-48249	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/22/2014	RunNo:	97280
Client ID:	LCSW	Batch ID:	48249	TestNo:	SM2540C			Analysis Date:	12/22/2014	SeqNo:	1896797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	984.000	10	1000	0	98.4	80	120				

Sample ID	N014193-018C-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/22/2014	RunNo:	97280
Client ID:	ZZZZZZ	Batch ID:	48249	TestNo:	SM2540C			Analysis Date:	12/22/2014	SeqNo:	1896809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10720.000	100						10640	0.749	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	2300	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	2300	0.76	25		µg/L	25	12/30/2014 07:06 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	6500	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	6300	1.5	50		µg/L	50	12/30/2014 10:14 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	2200	6.9	50		µg/L	5	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	2300	0.76	25		µg/L	25	12/30/2014 08:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-004

Client Sample ID: MW-132-200
Collection Date: 12/15/2014 9:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	4200	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	3900	0.76	25		µg/L	25	12/30/2014 11:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-134-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318**				PrepDate			Analyst: **RB**
Hexavalent Chromium	47	0.16	2.0		µg/L	10	12/22/2014 01:49 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48213**				PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	43	0.030	1.0		µg/L	1	12/30/2014 11:59 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	2000	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	2100	0.76	25		µg/L	25	12/31/2014 12:38 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	1900	6.9	50		µg/L	5	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	1900	0.76	25		µg/L	25	12/31/2014 12:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	6600	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	6600	1.5	50		µg/L	50	12/31/2014 01:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	2400	6.9	50		µg/L	5	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	2300	0.76	25		µg/L	25	12/30/2014 08:57 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-020-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 12:50 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48213**				PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 01:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-040-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:39:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318**				PrepDate			Analyst: **RB**
Hexavalent Chromium	0.34	0.016	0.20		µg/L	1	12/22/2014 10:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48213**				PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 01:38 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-050-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:11:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 01:10 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48213** PrepDate **12/18/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 01:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 01:20 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48213** PrepDate **12/18/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 02:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 01:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48213**				PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 02:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C** QC Batch: **R97411**				PrepDate			Analyst: **PS**
Chromium, Hexavalent	4400	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48223**				PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	4800	1.5	50		µg/L	50	12/31/2014 06:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	4100	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	4100	0.76	25		µg/L	25	12/31/2014 03:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-02D-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318**				PrepDate			Analyst: **RB**
Hexavalent Chromium	48	0.16	2.0		µg/L	10	12/22/2014 09:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48213**				PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	44	0.030	1.0		µg/L	1	12/31/2014 03:23 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 6:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141222A**	QC Batch: **R97318**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 05:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 03:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-224-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 6:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A**	QC Batch: **R97318**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 06:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-225-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 6:23:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A**	QC Batch: **R97318**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 06:56 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-226-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 2:09:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A**	QC Batch: **R97318**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 07:16 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-040-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 8:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141223A**	QC Batch: **R97319**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/23/2014 01:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 04:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-050-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141223A**	QC Batch: **R97319**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/23/2014 02:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 04:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-060-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 12:35:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 08:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48213** PrepDate **12/18/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 04:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-070-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:57:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 08:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48213** PrepDate **12/18/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 05:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-080-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 11:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-026		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141222A** QC Batch: **R97318** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/22/2014 09:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48213** PrepDate **12/18/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/31/2014 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	4800	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate	**12/18/2014**		Analyst: **CEI**
Chromium	5200	1.5	50		µg/L	50	12/31/2014 06:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-028		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141223A** QC Batch: **R97319**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/23/2014 03:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **ICP7_141230A** QC Batch: **48213**				PrepDate		**12/18/2014**	Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	12/31/2014 05:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97318** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **PBW** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97318** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **LCSW** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.975	0.20	5.000	0	99.5	90	110				

Sample ID **N014176-005A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.754	2.0						47.48	1.55	20	

Sample ID **N014176-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	96.056	2.0	50.00	47.48	97.1	90	110				

Sample ID **N014176-005A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	95.601	2.0	50.00	47.48	96.2	90	110	96.06	0.475	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014176-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N014176-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID **N014176-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.07340	106	90	110				

Sample ID **N014176-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.162	0.20	1.000	0.1582	100	90	110				

Sample ID **N014176-018A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0.04660	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014176-019A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0.04490	106	90	110				

Sample ID **N014176-020A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0.08090	96.2	90	110				

Sample ID **N014176-021A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0.04440	105	90	110				

Sample ID **N014176-024A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0.03580	106	90	110				

Sample ID **N014176-025A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014176-026A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0	106	90	110				

Sample ID **N014176-017A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	96.792	2.0	50.00	47.64	98.3	90	110				

Sample ID **N014176-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97318**
Client ID: **ZZZZZZ** Batch ID: **R97318** TestNo: **EPA 218.6** Analysis Date: **12/22/2014** SeqNo: **1899133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.402	0.20	1.000	0.3418	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97319** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **PBW** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97319** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **LCSW** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	90	110				

Sample ID **N014235-001C-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.418	0.20						0.4131	1.06	20	

Sample ID **N014235-001C-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.460	0.20	5.000	0.4131	101	90	110				

Sample ID **N014235-001C-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.470	0.20	5.000	0.4131	101	90	110	5.460	0.170	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014176-022A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N014176-023A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0.04890	105	90	110				

Sample ID **N014176-028A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.640	1.0	5.000	0.3505	106	90	110				

Sample ID **N014193-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.3470	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97411** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **LCSW** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	246.521	10	250.0	0	98.6	85	115				

Sample ID **MB-R97411** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **PBW** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014176-001A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2257.230	100						2320	2.76	20	

Sample ID **N014176-001A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4772.150	100	2500	2320	98.1	85	115				

Sample ID **N014176-001A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4733.790	100	2500	2320	96.5	85	115	4772	0.807	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	**N014176-006A-DUP**	SampType:	**DUP**	TestCode:	**3500_CrBPG**	Units:	**µg/L**	Prep Date:				RunNo:	**97411**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97411**	TestNo:	**SM 3500-Cr B**			Analysis Date:	**1/5/2015**			SeqNo:	**1902405**	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Chromium, Hexavalent		2012.570	100						2025	0.611	20			

Sample ID	**N014176-006A-MS**	SampType:	**MS**	TestCode:	**3500_CrBPG**	Units:	**µg/L**	Prep Date:				RunNo:	**97411**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97411**	TestNo:	**SM 3500-Cr B**			Analysis Date:	**1/5/2015**			SeqNo:	**1902406**	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Chromium, Hexavalent		4527.940	100	2500	2025	100	85	115						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48213	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	PBW	Batch ID:	48213	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900801

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.048	1.0									

Sample ID	LCS-48213	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	LCSW	Batch ID:	48213	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900804

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.871	1.0	10.00	0	98.7	85	115				

Sample ID	N014176-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48213	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900820

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7069.646	50	10.00	6312	7580	75	125				S

Sample ID	N014176-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48213	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900823

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7107.851	50	10.00	6312	7960	75	125	7070	0.539	20	S

Sample ID	N014176-014B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48213	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/31/2014	SeqNo:	1900858

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.704	1.0	10.00	0.1467	106	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48223	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	PBW	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900770

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48223	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	LCSW	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900771

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.681	1.0	10.00	0	96.8	85	115				

Sample ID	N014176-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900783

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2213.321	25	10.00	2256	-429	75	125				S

Sample ID	N014176-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2237.723	25	10.00	2256	-185	75	125	2213	1.10	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-001

Client Sample ID: MW-12-200
Collection Date: 12/15/2014 7:48:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	130	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	85	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-132-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	120	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	100	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	120	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	85	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-020-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217G**	QC Batch: **R97218**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	1300	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	1300	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-050-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:11:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	200	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	200	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	94	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	94	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	120	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-070-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:57:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	260	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	260	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141217F**	QC Batch: **R97215**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	36	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/17/2014
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/17/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97215** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **LCSW** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	101.496	5.0	100.0	0	101	85	115				
Alkalinity, Total (As CaCO3)	101.496	5.0	100.0	0	101	85	115				

Sample ID **MB-R97215** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **PBW** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014176-004CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **ZZZZZZ** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	117.521	5.0						118.6	0.905	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	117.521	5.0						118.6	0.905	30	

Sample ID **N014176-006CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **ZZZZZZ** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	204.060	5.0	100.0	104.7	99.4	75	125				
Alkalinity, Total (As CaCO3)	204.060	5.0	100.0	104.7	99.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014176-006CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97215**
Client ID: **ZZZZZZ** Batch ID: **R97215** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	202.991	5.0	100.0	104.7	98.3	75	125	204.1	0.525	20	
Alkalinity, Total (As CaCO3)	202.991	5.0	100.0	104.7	98.3	75	125	204.1	0.525	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97218** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97218**
Client ID: **LCSW** Batch ID: **R97218** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	497.312	5.0	500.0	0	99.5	85	115				
Alkalinity, Total (As CaCO3)	508.065	5.0	500.0	0	102	85	115				

Sample ID **MB-R97218** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97218**
Client ID: **PBW** Batch ID: **R97218** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	2.688	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	2.688	5.0									

Sample ID **N014176-010CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97218**
Client ID: **ZZZZZZ** Batch ID: **R97218** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	1287.634	5.0						1290	0.209	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	1287.634	5.0						1290	0.209	30	

Sample ID **N014176-010CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97218**
Client ID: **ZZZZZZ** Batch ID: **R97218** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	1790.323	5.0	500.0	1290	100	75	125				
Alkalinity, Total (As CaCO3)	1790.323	5.0	500.0	1290	100	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014176-010CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97218**
Client ID: **ZZZZZZ** Batch ID: **R97218** TestNo: **SM 2320 B** Analysis Date: **12/17/2014** SeqNo: **1893617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	1784.946	5.0	500.0	1290	98.9	75	125	1790	0.301	20	
Alkalinity, Total (As CaCO3)	1784.946	5.0	500.0	1290	98.9	75	125	1790	0.301	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-001

Client Sample ID: MW-12-200
Collection Date: 12/15/2014 7:48:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	0.64	0.028	0.50		mg/L	1	12/19/2014 10:21 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	1700	12	250		mg/L	500	12/22/2014 11:41 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	440	1.6	25		mg/L	50	12/19/2014 09:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-002

Client Sample ID: MW-122-200
Collection Date: 12/15/2014 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/19/2014 10:34 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	2900	25	500		mg/L	1000	12/22/2014 11:54 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	1100	3.3	50		mg/L	100	12/19/2014 10:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-003

Client Sample ID: MW-124-200
Collection Date: 12/15/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	1.0	0.056	1.0		mg/L	2	12/19/2014 05:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	910	5.0	100		mg/L	200	12/22/2014 12:06 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	530	1.6	25		mg/L	50	12/19/2014 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-004

Client Sample ID: MW-132-200
Collection Date: 12/15/2014 9:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.28	5.0		mg/L	10	12/19/2014 10:59 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	3100	25	500		mg/L	1000	12/22/2014 01:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	650	1.6	25		mg/L	50	12/19/2014 11:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-006

Client Sample ID: MW-20-070-200
Collection Date: 12/15/2014 10:52:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/19/2014 12:27 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	330	2.5	50		mg/L	100	12/22/2014 01:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	230	0.66	10		mg/L	20	12/20/2014 12:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-007

Client Sample ID: MW-20-100-200
Collection Date: 12/15/2014 11:22:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/19/2014 12:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	530	2.5	50		mg/L	100	12/22/2014 01:31 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	260	3.3	50		mg/L	100	12/19/2014 11:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-008

Client Sample ID: MW-20-130-200
Collection Date: 12/15/2014 1:05:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/19/2014 12:53 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	2800	25	500		mg/L	1000	12/22/2014 03:08 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	1100	3.3	50		mg/L	100	12/20/2014 01:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-009

Client Sample ID: MW-26-200
Collection Date: 12/15/2014 9:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	1.1	0.056	1.0		mg/L	2	12/19/2014 01:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	910	5.0	100		mg/L	200	12/22/2014 04:07 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	530	1.6	25		mg/L	50	12/20/2014 01:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-010

Client Sample ID: MW-36-020-200
Collection Date: 12/15/2014 10:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	0.54	0.028	0.50		mg/L	1	12/19/2014 01:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	1700	5.0	100		mg/L	200	12/22/2014 04:19 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	2400	6.6	100		mg/L	200	12/20/2014 12:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-012

Client Sample ID: MW-36-050-200
Collection Date: 12/15/2014 1:11:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/19/2014 01:31 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	130	1.2	25		mg/L	50	12/22/2014 04:32 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	190	0.66	10		mg/L	20	12/19/2014 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-015

Client Sample ID: MW-51-200
Collection Date: 12/15/2014 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.056	1.0		mg/L	2	12/19/2014 01:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	3400	25	500		mg/L	1000	12/22/2014 04:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	660	1.6	25		mg/L	50	12/20/2014 02:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-016

Client Sample ID: MW-59-100-200
Collection Date: 12/15/2014 2:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.28	5.0		mg/L	10	12/19/2014 01:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	3100	12	250		mg/L	500	12/22/2014 04:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	650	1.6	25		mg/L	50	12/20/2014 03:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-025

Client Sample ID: MW-39-070-200
Collection Date: 12/16/2014 9:57:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.028	0.50		mg/L	1	12/19/2014 02:09 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	320	2.5	50		mg/L	100	12/22/2014 05:10 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	250	1.6	25		mg/L	50	12/19/2014 08:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-027

Client Sample ID: MW-50-200-200
Collection Date: 12/16/2014 1:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/19/2014 02:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141222A** QC Batch: **R97259**				PrepDate			Analyst: **PS**
Chloride	6800	25	500		mg/L	1000	12/22/2014 05:23 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141219A** QC Batch: **R97251**				PrepDate			Analyst: **PS**
Sulfate	870	3.3	50		mg/L	100	12/20/2014 03:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R97251_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **PBW** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R97251_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **LCSW** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.472	0.50	2.500	0	98.9	90	110				

Sample ID **N014176-006C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **ZZZZZZ** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.221	0.50						0.2120	0	20	

Sample ID **N014176-006C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **ZZZZZZ** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.279	0.50	2.500	0.2120	82.7	80	120				

Sample ID **N014176-006C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **ZZZZZZ** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.367	0.50	2.500	0.2120	86.2	80	120	2.279	3.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N014176-007C-DUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	97251
Client ID:	ZZZZZZ	Batch ID:	R97251	TestNo:	EPA 300.0			Analysis Date:	12/19/2014	SeqNo:	1895165

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.381	0.50						0.4290	0	20	

Sample ID	N014176-007C-MS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	97251
Client ID:	ZZZZZZ	Batch ID:	R97251	TestNo:	EPA 300.0			Analysis Date:	12/19/2014	SeqNo:	1895166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.439	0.50	2.500	0.4290	80.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R97259_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	PBW	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895775

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R97259_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	LCSW	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895776

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.445	0.50	2.500	0	97.8	90	110				

Sample ID	N014176-006C-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	ZZZZZZ	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	329.900	50						325.8	1.25	20	

Sample ID	N014176-006C-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	ZZZZZZ	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895787

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	580.400	50	250.0	325.8	102	80	120				

Sample ID	N014176-002C-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	ZZZZZZ	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895788

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2804.000	500						2931	4.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N014176-002C-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	ZZZZZZ	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895789

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5407.000	500	2500	2931	99.0	80	120				

Sample ID	N014176-002C-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97259
Client ID:	ZZZZZZ	Batch ID:	R97259	TestNo:	EPA 300.0			Analysis Date:	12/22/2014	SeqNo:	1895790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5343.000	500	2500	2931	96.5	80	120	5407	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R97251_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **PBW** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R97251_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **LCSW** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.906	0.50	5.000	0	98.1	90	110				

Sample ID **N014176-012C-DUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **ZZZZZZ** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	185.380	10						189.4	2.13	20	

Sample ID **N014176-012C-MS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **ZZZZZZ** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	280.020	10	100.0	189.4	90.6	80	120				

Sample ID **N014176-012C-MSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97251**
Client ID: **ZZZZZZ** Batch ID: **R97251** TestNo: **EPA 300.0** Analysis Date: **12/19/2014** SeqNo: **1895230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	288.840	10	100.0	189.4	99.5	80	120	280.0	3.10	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N014176-025C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97251
Client ID:	ZZZZZZ	Batch ID:	R97251	TestNo:	EPA 300.0			Analysis Date:	12/19/2014	SeqNo:	1895232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	248.150	25						251.6	1.36	20	

Sample ID	N014176-025C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97251
Client ID:	ZZZZZZ	Batch ID:	R97251	TestNo:	EPA 300.0			Analysis Date:	12/19/2014	SeqNo:	1895233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	492.000	25	250.0	251.6	96.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	14	0.22	0.50		mg/L	10	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	22	0.44	1.0		mg/L	20	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-132-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.9	0.044	0.10		mg/L	2	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	7.7	0.11	0.25		mg/L	5	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	8.9	0.11	0.25		mg/L	5	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	14	0.22	0.50		mg/L	10	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	21	0.44	1.0		mg/L	20	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-040-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:39:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150105D** QC Batch: **R97413** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	1/5/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	3.6	0.11	0.25		mg/L	5	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 6:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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NEVADA
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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-060-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 12:35:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-028		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_141229B** QC Batch: **R97354** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/29/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97354** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97354**
Client ID: **PBW** Batch ID: **R97354** TestNo: **SM4500-NO3** Analysis Date: **12/29/2014** SeqNo: **1900534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97354** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97354**
Client ID: **LCSW** Batch ID: **R97354** TestNo: **SM4500-NO3** Analysis Date: **12/29/2014** SeqNo: **1900535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.081	0.050	1.000	0	108	85	115				

Sample ID **N014176-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97354**
Client ID: **ZZZZZZ** Batch ID: **R97354** TestNo: **SM4500-NO3** Analysis Date: **12/29/2014** SeqNo: **1900538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.960	1.0						15.18	1.45	20	

Sample ID **N014176-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97354**
Client ID: **ZZZZZZ** Batch ID: **R97354** TestNo: **SM4500-NO3** Analysis Date: **12/29/2014** SeqNo: **1900539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	35.792	1.0	20.00	15.18	103	75	125				

Sample ID **N014176-016DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97354**
Client ID: **ZZZZZZ** Batch ID: **R97354** TestNo: **SM4500-NO3** Analysis Date: **12/29/2014** SeqNo: **1900549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.666	0.25						3.649	0.479	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	N014176-016DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97354
Client ID:	ZZZZZZ	Batch ID:	R97354	TestNo:	SM4500-NO3			Analysis Date:	12/29/2014	SeqNo:	1900550

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.551	0.25	5.000	3.649	98.0	75	125				

Sample ID	N014176-016DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	97354
Client ID:	ZZZZZZ	Batch ID:	R97354	TestNo:	SM4500-NO3			Analysis Date:	12/29/2014	SeqNo:	1900551

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.019	0.25	5.000	3.649	107	75	125	8.550	5.33	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **LCS-R97413** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97413**
Client ID: **LCSW** Batch ID: **R97413** TestNo: **SM4500-NO3** Analysis Date: **1/5/2015** SeqNo: **1902423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.015	0.050	1.000	0	101	85	115				

Sample ID **MBLK-R97413** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97413**
Client ID: **PBW** Batch ID: **R97413** TestNo: **SM4500-NO3** Analysis Date: **1/5/2015** SeqNo: **1902424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **N014176-011DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97413**
Client ID: **ZZZZZZ** Batch ID: **R97413** TestNo: **SM4500-NO3** Analysis Date: **1/5/2015** SeqNo: **1902426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.028	0.050						0.2400	0	20	

Sample ID **N014176-011DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97413**
Client ID: **ZZZZZZ** Batch ID: **R97413** TestNo: **SM4500-NO3** Analysis Date: **1/5/2015** SeqNo: **1902427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.012	0.050	1.000	0	101	75	125				

Sample ID **N014176-011DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97413**
Client ID: **ZZZZZZ** Batch ID: **R97413** TestNo: **SM4500-NO3** Analysis Date: **1/5/2015** SeqNo: **1902428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.943	0.050	1.000	0	94.2	75	125	1.012	7.08	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	950	19	100		ug/L	1	12/29/2014 05:31 PM
Calcium	33000	58	500		ug/L	1	12/29/2014 05:31 PM
Iron	20	1.3	20		ug/L	1	12/29/2014 05:31 PM
Magnesium	6000	11	100		ug/L	1	12/29/2014 05:31 PM
Sodium	1100000	3800	50000		ug/L	100	12/29/2014 10:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-002

Client Sample ID: MW-122-200
Collection Date: 12/15/2014 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1800	19	100		ug/L	1	12/29/2014 05:37 PM
Calcium	290000	58	500		ug/L	1	12/29/2014 05:37 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 05:37 PM
Magnesium	20000	11	100		ug/L	1	12/29/2014 05:37 PM
Potassium	21000	420	2500		ug/L	5	12/29/2014 11:43 AM
Sodium	1700000	3800	50000		ug/L	100	12/29/2014 10:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	820	19	100		ug/L	1	12/29/2014 05:42 PM
Calcium	150000	58	500		ug/L	1	12/29/2014 05:42 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 05:42 PM
Magnesium	34000	11	100		ug/L	1	12/29/2014 05:42 PM
Sodium	450000	3800	50000		ug/L	100	12/29/2014 10:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-132-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1100	19	100		ug/L	1	12/29/2014 05:48 PM
Calcium	720000	290	2500		ug/L	5	12/29/2014 07:46 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 05:48 PM
Magnesium	19000	11	100		ug/L	1	12/29/2014 05:48 PM
Sodium	1400000	3800	50000		ug/L	100	12/29/2014 10:54 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-006

Client Sample ID: MW-20-070-200
Collection Date: 12/15/2014 10:52:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	430	19	100		ug/L	1	12/29/2014 06:03 PM
Calcium	49000	58	500		ug/L	1	12/29/2014 06:03 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:03 PM
Magnesium	12000	11	100		ug/L	1	12/29/2014 06:03 PM
Potassium	4400	84	500		ug/L	1	12/29/2014 12:27 PM
Sodium	310000	3800	50000		ug/L	100	1/5/2015 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**				PrepDate	**12/18/2014**	Analyst: **CEI**
Boron	760	19	100		ug/L	1	12/29/2014 06:09 PM
Calcium	120000	58	500		ug/L	1	12/29/2014 06:09 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:09 PM
Magnesium	18000	11	100		ug/L	1	12/29/2014 06:09 PM
Potassium	6400	84	500		ug/L	1	12/29/2014 12:32 PM
Sodium	340000	3800	50000		ug/L	100	1/5/2015 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**				PrepDate	**12/18/2014**	Analyst: **CEI**
Boron	1900	19	100		ug/L	1	12/29/2014 06:15 PM
Calcium	310000	58	500		ug/L	1	12/29/2014 06:15 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:15 PM
Magnesium	21000	11	100		ug/L	1	12/29/2014 06:15 PM
Potassium	24000	84	500		ug/L	1	12/29/2014 12:37 PM
Sodium	1800000	3800	50000		ug/L	100	12/29/2014 11:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-009

Client Sample ID: MW-26-200
Collection Date: 12/15/2014 9:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	790	19	100		ug/L	1	12/29/2014 06:20 PM
Calcium	150000	58	500		ug/L	1	12/29/2014 06:20 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:20 PM
Magnesium	33000	11	100		ug/L	1	12/29/2014 06:20 PM
Sodium	470000	3800	50000		ug/L	100	12/29/2014 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-020-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1600	19	100		ug/L	1	12/29/2014 06:26 PM
Calcium	120000	58	500		ug/L	1	12/29/2014 06:26 PM
Iron	1900	1.3	20		ug/L	1	12/29/2014 06:26 PM
Magnesium	150000	11	100		ug/L	1	12/29/2014 06:26 PM
Sodium	2100000	3800	50000		ug/L	100	12/29/2014 11:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-012

Client Sample ID: MW-36-050-200
Collection Date: 12/15/2014 1:11:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	180	19	100		ug/L	1	12/29/2014 06:31 PM
Calcium	82000	58	500		ug/L	1	12/29/2014 06:31 PM
Iron	120	1.3	20		ug/L	1	12/29/2014 06:31 PM
Magnesium	17000	11	100		ug/L	1	12/29/2014 06:31 PM
Sodium	100000	190	2500		ug/L	5	12/29/2014 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-015

Client Sample ID: MW-51-200
Collection Date: 12/15/2014 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1300	19	100		ug/L	1	12/29/2014 06:36 PM
Calcium	240000	58	500		ug/L	1	12/29/2014 06:36 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:36 PM
Magnesium	14000	11	100		ug/L	1	12/29/2014 06:36 PM
Sodium	2100000	3800	50000		ug/L	100	12/29/2014 11:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-016

Client Sample ID: MW-59-100-200
Collection Date: 12/15/2014 2:22:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1100	19	100		ug/L	1	12/29/2014 06:41 PM
Calcium	680000	290	2500		ug/L	5	12/29/2014 07:51 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:41 PM
Magnesium	18000	11	100		ug/L	1	12/29/2014 06:41 PM
Sodium	1400000	3800	50000		ug/L	100	12/29/2014 11:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-025

Client Sample ID: MW-39-070-200
Collection Date: 12/16/2014 9:57:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	330	19	100		ug/L	1	12/29/2014 06:47 PM
Calcium	27000	58	500		ug/L	1	12/29/2014 06:47 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:47 PM
Magnesium	5400	11	100		ug/L	1	12/29/2014 06:47 PM
Sodium	440000	7500	100000		ug/L	200	12/29/2014 11:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-027

Client Sample ID: MW-50-200-200
Collection Date: 12/16/2014 1:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48218**			PrepDate	**12/18/2014**		Analyst: **CEI**
Boron	1500	19	100		ug/L	1	12/29/2014 06:52 PM
Calcium	510000	290	2500		ug/L	5	12/29/2014 07:57 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 06:52 PM
Magnesium	25000	11	100		ug/L	1	12/29/2014 06:52 PM
Sodium	3400000	19000	250000		ug/L	500	12/29/2014 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET LABORATORIES
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48218** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **PBW** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID **LCS2-48218** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **LCSW** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19219.711	500	20000	0	96.1	85	115				
Sodium	17500.715	500	20000	0	87.5	85	115				

Sample ID **N014176-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	42791.667	2500	20000	21120	108	75	125				

Sample ID **N014176-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	42769.876	2500	20000	21120	108	75	125	42790	0.0509	20	

Sample ID **N014176-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1947713.405	50000	20000	1740000	1040	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N014176-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1950002.647	50000	20000	1740000	1050	75	125	1948000	0.117	20	S

Sample ID **N014176-016B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1899999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1400322.713	50000	20000	1373000	137	75	125				S

Sample ID **N014176-016B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97340**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	47198.787	2500	20000	27510	98.4	75	125				

Sample ID **MB-48218** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97343**
Client ID: **PBW** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	41.147	100									
Calcium	ND	500									
Iron	1.481	20									
Magnesium	ND	100									

Sample ID **LCS1-48218** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97343**
Client ID: **LCSW** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4328.119	100	5000	0	86.6	85	115				
Calcium	8926.992	500	10000	0	89.3	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48218** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97343**
Client ID: **LCSW** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105.759	20	100.0	0	106	85	115				
Magnesium	9372.222	100	10000	0	93.7	85	115				

Sample ID **N014176-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97343**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5209.948	100	5000	953.8	85.1	75	125				
Calcium	45069.364	500	10000	33050	120	75	125				
Iron	59.200	20	100.0	20.26	38.9	75	125				S
Magnesium	14231.533	100	10000	6018	82.1	75	125				

Sample ID **N014176-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97343**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5191.909	100	5000	953.8	84.8	75	125	5210	0.347	20	
Calcium	43240.327	500	10000	33050	102	75	125	45070	4.14	20	
Iron	63.746	20	100.0	20.26	43.5	75	125	59.20	7.40	20	S
Magnesium	14927.314	100	10000	6018	89.1	75	125	14230	4.77	20	

Sample ID **N014176-015B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/18/2014** RunNo: **97343**
Client ID: **ZZZZZZ** Batch ID: **48218** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5539.750	100	5000	1260	85.6	75	125				
Calcium	248636.721	500	10000	243700	49.6	75	125				S
Iron	42.851	20	100.0	0	42.9	75	125				S
Magnesium	22303.917	100	10000	14230	80.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-001

Client Sample ID: MW-12-200
Collection Date: 12/15/2014 7:48:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate	**12/18/2014**		Analyst: **CEI**
Antimony	ND	0.18	0.50		µg/L	1	12/30/2014 06:55 PM
Arsenic	40	0.027	0.10		µg/L	1	12/30/2014 06:55 PM
Barium	49	0.030	1.0		µg/L	1	12/30/2014 06:55 PM
Beryllium	ND	0.051	2.5		µg/L	5	12/30/2014 07:00 PM
Cadmium	ND	0.013	0.50		µg/L	1	12/30/2014 06:55 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/30/2014 06:55 PM
Copper	ND	0.040	1.0		µg/L	1	12/30/2014 06:55 PM
Lead	ND	0.053	5.0		µg/L	5	12/30/2014 07:00 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 06:55 PM
Molybdenum	12	0.76	2.5		µg/L	5	12/30/2014 07:00 PM
Nickel	ND	0.032	1.0		µg/L	1	12/30/2014 06:55 PM
Selenium	19	0.069	0.50		µg/L	1	12/30/2014 06:55 PM
Silver	ND	0.094	0.50		µg/L	1	12/30/2014 06:55 PM
Thallium	ND	0.040	2.5		µg/L	5	12/30/2014 07:00 PM
Vanadium	19	0.16	1.0		µg/L	1	12/30/2014 06:55 PM
Zinc	ND	0.23	10		µg/L	1	12/30/2014 06:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	3.9	0.027	0.10		µg/L	1	12/30/2014 09:58 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 09:58 PM
Molybdenum	32	0.76	2.5		µg/L	5	12/30/2014 10:03 PM
Selenium	36	0.069	0.50		µg/L	1	12/30/2014 09:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-003

Client Sample ID: MW-124-200
Collection Date: 12/15/2014 7:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate	**12/18/2014**		Analyst: **CEI**
Antimony	ND	0.18	0.50		µg/L	1	12/30/2014 08:19 PM
Arsenic	1.9	0.027	0.10		µg/L	1	12/30/2014 08:19 PM
Barium	35	0.030	1.0		µg/L	1	12/30/2014 08:19 PM
Beryllium	ND	0.010	0.50		µg/L	1	12/30/2014 08:19 PM
Cadmium	ND	0.013	0.50		µg/L	1	12/30/2014 08:19 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/30/2014 08:19 PM
Copper	ND	0.040	1.0		µg/L	1	12/30/2014 08:19 PM
Lead	ND	0.011	1.0		µg/L	1	12/30/2014 08:19 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 08:19 PM
Molybdenum	33	0.15	0.50		µg/L	1	12/30/2014 08:19 PM
Nickel	ND	0.032	1.0		µg/L	1	12/30/2014 08:19 PM
Selenium	54	0.069	0.50		µg/L	1	12/30/2014 08:19 PM
Silver	ND	0.094	0.50		µg/L	1	12/30/2014 08:19 PM
Thallium	ND	0.0080	0.50		µg/L	1	12/30/2014 08:19 PM
Vanadium	8.0	0.16	1.0		µg/L	1	12/30/2014 08:19 PM
Zinc	ND	0.23	10		µg/L	1	12/30/2014 08:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-132-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	2.0	0.027	0.10		µg/L	1	12/30/2014 11:42 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 11:42 PM
Molybdenum	5.2	0.76	2.5		µg/L	5	12/30/2014 11:48 PM
Selenium	3.7	0.34	2.5		µg/L	5	12/31/2014 07:22 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**				PrepDate	**12/18/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	12/31/2014 12:26 AM
Molybdenum	47	0.15	0.50		µg/L	1	12/31/2014 12:26 AM
Selenium	5.1	0.069	0.50		µg/L	1	12/31/2014 12:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**				PrepDate	**12/18/2014**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	12/31/2014 12:43 AM
Molybdenum	4.2	0.15	0.50		µg/L	1	12/31/2014 12:43 AM
Selenium	5.9	0.069	0.50		µg/L	1	12/31/2014 12:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	3.9	0.13	0.50		µg/L	5	12/31/2014 01:05 AM
Manganese	ND	0.026	0.50		µg/L	1	12/31/2014 01:00 AM
Molybdenum	33	0.76	2.5		µg/L	5	12/31/2014 01:05 AM
Selenium	35	0.34	2.5		µg/L	5	12/31/2014 01:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_141230A** QC Batch: **48223** PrepDate **12/18/2014** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.18	0.50		µg/L	1	12/30/2014 08:46 PM
Arsenic	2.1	0.027	0.10		µg/L	1	12/30/2014 08:46 PM
Barium	35	0.030	1.0		µg/L	1	12/30/2014 08:46 PM
Beryllium	ND	0.010	0.50		µg/L	1	12/30/2014 08:46 PM
Cadmium	ND	0.013	0.50		µg/L	1	12/30/2014 08:46 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/30/2014 08:46 PM
Copper	ND	0.040	1.0		µg/L	1	12/30/2014 08:46 PM
Lead	ND	0.011	1.0		µg/L	1	12/30/2014 08:46 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 08:46 PM
Molybdenum	33	0.15	0.50		µg/L	1	12/30/2014 08:46 PM
Nickel	ND	0.032	1.0		µg/L	1	12/30/2014 08:46 PM
Selenium	56	0.069	0.50		µg/L	1	12/30/2014 08:46 PM
Silver	ND	0.094	0.50		µg/L	1	12/30/2014 08:46 PM
Thallium	ND	0.0080	0.50		µg/L	1	12/30/2014 08:46 PM
Vanadium	8.0	0.16	1.0		µg/L	1	12/30/2014 08:46 PM
Zinc	ND	0.23	10		µg/L	1	12/30/2014 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-020-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	1.7	0.027	0.10		µg/L	1	12/31/2014 01:27 AM
Manganese	280	0.13	2.5		µg/L	5	12/31/2014 01:33 AM
Molybdenum	52	0.76	2.5		µg/L	5	12/31/2014 01:33 AM
Selenium	ND	0.34	2.5		µg/L	5	12/31/2014 01:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-040-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 11:39:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	4.7	0.027	0.10		µg/L	1	12/31/2014 01:38 AM
Manganese	140	0.026	0.50		µg/L	1	12/31/2014 01:38 AM
Molybdenum	8.0	0.15	0.50		µg/L	1	12/31/2014 01:38 AM
Selenium	ND	0.069	0.50		µg/L	1	12/31/2014 01:38 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-050-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 1:11:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	4.3	0.027	0.10		µg/L	1	12/31/2014 01:55 AM
Manganese	250	0.13	2.5		µg/L	5	12/31/2014 02:00 AM
Molybdenum	4.6	0.15	0.50		µg/L	1	12/31/2014 01:55 AM
Selenium	ND	0.069	0.50		µg/L	1	12/31/2014 01:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-070-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 10:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**				PrepDate	**12/18/2014**	Analyst: **CEI**
Arsenic	3.3	0.027	0.10		µg/L	1	12/31/2014 02:06 AM
Manganese	170	0.026	0.50		µg/L	1	12/31/2014 02:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 12:23:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	25	0.027	0.10		µg/L	1	12/31/2014 02:33 AM
Manganese	2.4	0.026	0.50		µg/L	1	12/31/2014 02:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-015

Client Sample ID: MW-51-200
Collection Date: 12/15/2014 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate	**12/18/2014**		Analyst: **CEI**
Antimony	ND	0.18	0.50		µg/L	1	12/30/2014 09:03 PM
Arsenic	3.7	0.027	0.10		µg/L	1	12/30/2014 09:03 PM
Barium	36	0.030	1.0		µg/L	1	12/30/2014 09:03 PM
Beryllium	ND	0.051	2.5		µg/L	5	12/30/2014 09:08 PM
Cadmium	ND	0.013	0.50		µg/L	1	12/30/2014 09:03 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/30/2014 09:03 PM
Copper	ND	0.040	1.0		µg/L	1	12/30/2014 09:03 PM
Lead	ND	0.053	5.0		µg/L	5	12/30/2014 09:08 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 09:03 PM
Molybdenum	47	0.76	2.5		µg/L	5	12/30/2014 09:08 PM
Nickel	ND	0.032	1.0		µg/L	1	12/30/2014 09:03 PM
Selenium	16	0.34	2.5		µg/L	5	12/30/2014 09:08 PM
Silver	ND	0.47	2.5		µg/L	5	12/30/2014 09:08 PM
Thallium	ND	0.040	2.5		µg/L	5	12/30/2014 09:08 PM
Vanadium	2.2	0.16	1.0		µg/L	1	12/30/2014 09:03 PM
Zinc	ND	0.23	10		µg/L	1	12/30/2014 09:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	2.1	0.13	0.50		µg/L	5	12/31/2014 03:12 AM
Manganese	ND	0.026	0.50		µg/L	1	12/31/2014 03:07 AM
Molybdenum	5.4	0.76	2.5		µg/L	5	12/31/2014 03:12 AM
Selenium	3.8	0.34	2.5		µg/L	5	12/31/2014 03:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 6:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	6.1	0.027	0.10		µg/L	1	12/31/2014 03:51 AM
Manganese	42	0.026	0.50		µg/L	1	12/31/2014 03:51 AM
Molybdenum	9.8	0.15	0.50		µg/L	1	12/31/2014 03:51 AM
Selenium	ND	0.069	0.50		µg/L	1	12/31/2014 03:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-040-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 8:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	21	0.027	0.10		µg/L	1	12/31/2014 04:07 AM
Manganese	140	0.026	0.50		µg/L	1	12/31/2014 04:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-050-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 10:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	3.1	0.027	0.10		µg/L	1	12/31/2014 04:24 AM
Manganese	110	0.026	0.50		µg/L	1	12/31/2014 04:24 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-060-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 12:35:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-024		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	5.3	0.027	0.10		µg/L	1	12/31/2014 04:53 AM
Manganese	40	0.026	0.50		µg/L	1	12/31/2014 04:53 AM
Molybdenum	9.5	0.15	0.50		µg/L	1	12/31/2014 04:53 AM
Selenium	ND	0.069	0.50		µg/L	1	12/31/2014 04:53 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-070-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:57:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-025		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	12/31/2014 05:09 AM
Molybdenum	38	0.15	0.50		µg/L	1	12/31/2014 05:09 AM
Selenium	ND	0.069	0.50		µg/L	1	12/31/2014 05:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014176
Project: PG&E Topock
Lab ID: N014176-027

Client Sample ID: MW-50-200-200
Collection Date: 12/16/2014 1:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48223**			PrepDate	**12/18/2014**		Analyst: **CEI**
Antimony	ND	0.92	2.5		µg/L	5	12/30/2014 09:25 PM
Arsenic	3.1	0.13	0.50		µg/L	5	12/30/2014 09:25 PM
Barium	44	0.15	5.0		µg/L	5	12/30/2014 09:25 PM
Beryllium	ND	0.051	2.5		µg/L	5	12/30/2014 09:25 PM
Cadmium	ND	0.066	2.5		µg/L	5	12/30/2014 09:25 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/30/2014 09:19 PM
Copper	ND	0.20	5.0		µg/L	5	12/30/2014 09:25 PM
Lead	ND	0.053	5.0		µg/L	5	12/30/2014 09:25 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2014 09:19 PM
Molybdenum	43	0.76	2.5		µg/L	5	12/30/2014 09:25 PM
Nickel	ND	0.16	5.0		µg/L	5	12/30/2014 09:25 PM
Selenium	3.3	0.34	2.5		µg/L	5	12/30/2014 09:25 PM
Silver	ND	0.47	2.5		µg/L	5	12/30/2014 09:25 PM
Thallium	ND	0.040	2.5		µg/L	5	12/30/2014 09:25 PM
Vanadium	4.0	0.16	1.0		µg/L	1	12/30/2014 09:19 PM
Zinc	ND	1.2	50		µg/L	5	12/30/2014 09:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 9:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-028		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48213**			PrepDate	**12/18/2014**		Analyst: **CEI**
Arsenic	ND	0.13	0.50		µg/L	5	12/31/2014 05:59 AM
Manganese	860	0.13	2.5		µg/L	5	12/31/2014 05:59 AM
Molybdenum	2.9	0.76	2.5		µg/L	5	12/31/2014 05:59 AM
Selenium	ND	0.34	2.5		µg/L	5	12/31/2014 05:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *06-Jan-15*

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48213** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **PBW** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48213** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **LCSW** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.570	0.10	10.00	0	95.7	85	115				
Manganese	95.858	0.50	100.0	0	95.9	85	115				
Molybdenum	10.195	0.50	10.00	0	102	85	115				
Selenium	9.606	0.50	10.00	0	96.1	85	115				

Sample ID **N014176-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.663	0.10	10.00	3.854	118	75	125				
Manganese	34.593	0.50	100.0	0	34.6	75	125				S
Selenium	51.745	0.50	10.00	35.54	162	75	125				S

Sample ID **N014176-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	48.418	2.5	10.00	31.68	167	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014176-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.750	0.10	10.00	3.854	119	75	125	15.66	0.550	20	
Manganese	33.945	0.50	100.0	0	33.9	75	125	34.59	1.89	20	S
Selenium	50.684	0.50	10.00	35.54	151	75	125	51.74	2.07	20	S

Sample ID **N014176-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	47.940	2.5	10.00	31.68	163	75	125	48.42	0.991	20	S

Sample ID **N014176-014B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/31/2014** SeqNo: **1901035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	40.475	0.10	10.00	25.25	152	75	125				S
Manganese	106.802	0.50	100.0	2.399	104	75	125				
Molybdenum	33.766	0.50	10.00	21.36	124	75	125				
Selenium	13.242	0.50	10.00	0	132	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-48223	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	PBW	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900947

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	0.185	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	0.329	10									

Sample ID	LCS-48223	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	LCSW	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.432	0.50	10.00	0	104	85	115				
Arsenic	9.839	0.10	10.00	0	98.4	85	115				
Barium	103.214	1.0	100.0	0	103	85	115				
Beryllium	9.629	0.50	10.00	0	96.3	85	115				
Cadmium	10.046	0.50	10.00	0	100	85	115				
Cobalt	9.622	0.50	10.00	0	96.2	85	115				
Copper	9.300	1.0	10.00	0	93.0	85	115				
Lead	10.030	1.0	10.00	0	100	85	115				
Manganese	95.006	0.50	100.0	0	95.0	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-48223	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	LCSW	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	10.078	0.50	10.00	0	101	85	115				
Nickel	9.052	1.0	10.00	0	90.5	85	115				
Selenium	9.558	0.50	10.00	0	95.6	85	115				
Silver	9.830	0.50	10.00	0	98.3	85	115				
Thallium	10.062	0.50	10.00	0	101	85	115				
Vanadium	8.983	1.0	10.00	0	89.8	85	115				
Zinc	93.975	10	100.0	0	94.0	85	115				

Sample ID	N014176-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.719	0.50	10.00	0	117	75	125				
Arsenic	51.751	0.10	10.00	39.89	119	75	125				
Barium	156.741	1.0	100.0	48.51	108	75	125				
Cadmium	10.069	0.50	10.00	0	101	75	125				
Cobalt	9.292	0.50	10.00	0	92.9	75	125				
Copper	4.474	1.0	10.00	0	44.7	75	125				S
Manganese	57.059	0.50	100.0	0	57.1	75	125				S
Nickel	10.272	1.0	10.00	0.1366	101	75	125				
Selenium	28.546	0.50	10.00	18.67	98.7	75	125				
Silver	9.835	0.50	10.00	0	98.4	75	125				
Vanadium	28.892	1.0	10.00	18.76	101	75	125				
Zinc	93.782	10	100.0	0	93.8	75	125				

Sample ID	N014176-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48223	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	11.686	2.5	10.00	0	117	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014176-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48223** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	11.907	5.0	10.00	0	119	75	125				
Molybdenum	24.405	2.5	10.00	12.39	120	75	125				
Thallium	12.106	2.5	10.00	0	121	75	125				

Sample ID **N014176-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48223** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.731	0.50	10.00	0	117	75	125	11.72	0.0950	20	
Arsenic	51.903	0.10	10.00	39.89	120	75	125	51.75	0.293	20	
Barium	158.432	1.0	100.0	48.51	110	75	125	156.7	1.07	20	
Cadmium	10.019	0.50	10.00	0	100	75	125	10.07	0.504	20	
Cobalt	9.302	0.50	10.00	0	93.0	75	125	9.292	0.105	20	
Copper	4.578	1.0	10.00	0	45.8	75	125	4.474	2.30	20	S
Manganese	55.021	0.50	100.0	0	55.0	75	125	57.06	3.64	20	S
Nickel	10.535	1.0	10.00	0.1366	104	75	125	10.27	2.53	20	
Selenium	28.621	0.50	10.00	18.67	99.5	75	125	28.55	0.262	20	
Silver	9.793	0.50	10.00	0	97.9	75	125	9.835	0.434	20	
Vanadium	28.949	1.0	10.00	18.76	102	75	125	28.89	0.196	20	
Zinc	95.365	10	100.0	0	95.4	75	125	93.78	1.67	20	

Sample ID **N014176-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48223** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	11.715	2.5	10.00	0	117	75	125	11.69	0.252	20	
Lead	11.831	5.0	10.00	0	118	75	125	11.91	0.639	20	
Molybdenum	24.305	2.5	10.00	12.39	119	75	125	24.41	0.412	20	
Thallium	12.040	2.5	10.00	0	120	75	125	12.11	0.548	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141219A**	QC Batch: **48220**			PrepDate	**12/18/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/19/2014 10:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141219A**	QC Batch: **48220**			PrepDate	**12/18/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/19/2014 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141219A**	QC Batch: **48220**			PrepDate	**12/18/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/19/2014 10:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-200
Lab Order:	N014176	**Collection Date:**	12/15/2014 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141219A**	QC Batch: **48220**			PrepDate	**12/18/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/19/2014 10:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-200
Lab Order:	N014176	**Collection Date:**	12/16/2014 1:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014176-027		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_141219A**	QC Batch: **48220**			PrepDate	**12/18/2014**		Analyst: **CEI**
Mercury	ND	0.015	0.20		µg/L	1	12/19/2014 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID **MB-48220** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97228**
Client ID: **PBW** Batch ID: **48220** TestNo: **EPA 7470A** Analysis Date: **12/19/2014** SeqNo: **1894383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID **LCS-48220** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97228**
Client ID: **LCSW** Batch ID: **48220** TestNo: **EPA 7470A** Analysis Date: **12/19/2014** SeqNo: **1894386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.044	0.20	5.000	0	101	85	115				

Sample ID **N014176-001B-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97228**
Client ID: **ZZZZZZ** Batch ID: **48220** TestNo: **EPA 7470A** Analysis Date: **12/19/2014** SeqNo: **1894387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.734	0.20	5.000	0	94.7	75	125				

Sample ID **N014176-001B-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97228**
Client ID: **ZZZZZZ** Batch ID: **48220** TestNo: **EPA 7470A** Analysis Date: **12/19/2014** SeqNo: **1894388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.720	0.20	5.000	0	94.4	75	125	4.734	0.290	20	

Sample ID **N014179-002A-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **12/18/2014** RunNo: **97228**
Client ID: **ZZZZZZ** Batch ID: **48220** TestNo: **EPA 7470A** Analysis Date: **12/19/2014** SeqNo: **1894402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.257	0.20	5.000	0	85.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/16/2014 3:53:28 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/16/2014
COC Number: 12

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly	* full T22 List; Sb, As, Ba, Be, Cd, Co, Cu, Pb, Hg, Mo Ni, Se, Ag, Tl, V, Zn		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C *	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C				
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA				
			Holding Time:	28	28	180	180	180	180	180	180	7	7	7	7	28	NA				
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-12-200	12/15/2014	7:48	Water		X		X		X	X	X		X	X	X	X	X		N0141176-01	4	
MW-122-200	12/15/2014	8:00	Water		X	X		X		X		X	X	X	X	X	X	X	-02	5	
MW-124-200	12/15/2014	7:00	Water		X		X		X	X	X		X	X	X	X	X	X	-03	5	
MW-132-200	12/15/2014	9:00	Water		X	X	X			X		X	X	X	X	X	X		-04	4	
MW-134-200	12/15/2014	7:50	Water	X						X				X					-05	3	
MW-20-070-200	12/15/2014	10:52	Water		X			X		X		X	X	X	X	X	X	X	-06	5	
MW-20-100-200	12/15/2014	11:22	Water		X			X		X		X	X	X	X	X	X	X	-07	5	
MW-20-130-200	12/15/2014	13:05	Water		X	X		X		X		X	X	X	X	X	X	X	-08	5	
MW-26-200	12/15/2014	9:10	Water		X		X		X	X	X		X	X	X	X	X	X	-09	5	
MW-36-020-200	12/15/2014	10:05	Water	X		X	X			X		X	X	X	X	X			-10	3	
MW-36-040-200	12/15/2014	11:39	Water	X		X				X		X		X			X		-11	4	
MW-36-050-200	12/15/2014	13:11	Water	X		X	X			X		X	X	X	X	X			-12	3	
MW-36-070-200	12/15/2014	10:55	Water	X		X				X	X			X					-13	3	

	Signatures	Date/Time
Approved by		12-16-14 1605
Sampled by		
Relinquished by		
Received by		12/16/14 -1605
Relinquished by		12/16/14 1830
Received by		12/16/14 1830

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.9°C / 1.6°C / RH 2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.
Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

12/16/2014 3:53:29 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/16/2014
COC Number: 12

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly	* full T22 List: Sb, As, Ba, Be, Cd, Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, V, Zn
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C	
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	
			Holding Time:	28	28	180	180	180	180	180	180	180	7	7	7	7	28	NA	
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6010B/6020A/7470Adis) Field Filtered T22:SbAsBaBeCdCoCuPbHgMoNi	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)	Number of Containers	COMMENTS
MW-36-090-200	12/15/2014	12:23	Water	X		X				X	X			X					N0144776-14	3	
MW-51-200	12/15/2014	15:30	Water		X		X		X	X	X		X	X	X	X	X		-15	4	
MW-59-100-200	12/15/2014	14:22	Water		X	X	X			X		X	X	X	X	X	X		-16	4	
TW-02D-200	12/15/2014	14:50	Water	X						X				X					-17	3	
MW-123-200	12/16/2014	6:45	Water	X		X				X		X		X			X		-18	4	
MW-224-200	12/16/2014	6:20	Water	X															-19	1	
MW-225-200	12/16/2014	6:23	Water	X															-20	1	
MW-226-200	12/16/2014	14:09	Water	X															-21	1	
MW-39-040-200	12/16/2014	8:55	Water	X		X				X	X			X					-22	3	
MW-39-050-200	12/16/2014	10:58	Water	X		X				X	X			X					-23	3	
MW-39-060-200	12/16/2014	12:35	Water	X		X				X		X		X			X		-24	4	
MW-39-070-200	12/16/2014	9:57	Water	X			X			X		X	X	X	X	X		X	-25	4	
MW-39-080-200	12/16/2014	11:44	Water	X						X				X					-26	3	
MW-50-200-200	12/16/2014	13:48	Water		X		X		X	X	X		X	X	X	X			-27	3	

	Signatures	Date/Time
Approved by		12-16-14
Sampled by		1605
Relinquished by		
Received by		12/16/14 - 1605
Relinquished by		12/16/14 1830
Received by		12/16/14 1830

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.7 °C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Nov 3 to Dec 18, 2014

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL **CHAIN OF CUSTODY RECORD** *12/16/2014 3:53:30 PM* Page 3 OF 3

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/16/2014
COC Number: 12

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B,K	Metals (6010B/6020A/7470Adis) T22:SbAsBaBeCdCoCuPbHgMoNi Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-66BR-270-200	12/16/2014	9:40	Water	X		X				X		X		X			X		N0141176-28	4	
																			TOTAL NUMBER OF CONTAINERS	99	

Signatures		Date/Time
Approved by		12-16-14
Sampled by		1605
Relinquished by		
Received by	pingalang	12/16/14 1605
Relinquished by	pingalang	12/16/14 1830
Received by		12/16/14 1830

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1.7 °C
Airbill No: TR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.
Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/16/2014	Workorder:	N014176
Rep sample Temp (Deg C):	1.6/1.7/1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 12/18/14

Reviewed By: gsg 12/19/14

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler:

17-Dec-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N014176-002E / MW-122-200	Water	12/15/2014 8:00:00 AM	4OZP	1		
N014176-003E / MW-124-200	Water	12/15/2014 7:00:00 AM	4OZP	1		
N014176-006E / MW-20-070-200	Water	12/15/2014 10:52:00 AM	4OZP	1		
N014176-007E / MW-20-100-200	Water	12/15/2014 11:22:00 AM	4OZP	1		
N014176-008E / MW-20-130-200	Water	12/15/2014 1:05:00 PM	4OZP	1		
N014176-009E / MW-26-200	Water	12/15/2014 9:10:00 AM	4OZP	1		
N014176-025D / MW-39-070-200	Water	12/16/2014 9:57:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N14176A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples. **FedEx# 7722 8623 5455**

		Date/Time			Date/Time
Relinquished by:	jpg	12/17/14 @ 17:00	**Received by:**		
Relinquished by:			**Received by:**		

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014176-001C,** TDS concentration in mg/L is calculated as follows:

54.0042-53.9226

$$\text{TDS, mg/L} = \frac{(\cancel{53.9226-54.0042})*1000000}{20\ \cancel{100}}$$

= 4080 mg/L

Reporting result in two significant figures,

TDS = 4100 mg/L

Silia Ramit 12/30/2014

REB 12/31/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/20/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48226	100	55.371	55.3712	2	1	2		
LCS-48226	100	54.8427	54.9419	992	1	992		
N014176-001C	20	53.9226	54.0042	816	5	4080	7070	0.577
N014176-001C DUP	20	63.5018	63.5799	781	5	3905	7070	0.552
N014176-002C	10	55.5902	55.6579	677	10	6770	11170	0.606
N014176-003C	30	55.2035	55.2836	801	3.333333333	2670	4300	0.621
N014176-004C	10	75.7444	75.8129	685	10	6850	10560	0.649
N014176-006C	100	77.1013	77.2085	1072	1	1072	1914	0.560
N014176-007C	50	63.7958	63.8693	735	2	1470	2560	0.574
N014176-008C	10	62.9854	63.0545	691	10	6910	11270	0.613
N014176-009C	30	54.3532	54.4337	805	3.333333333	2683.333333	4280	0.627
N014176-010C	10	64.2639	64.3406	767	10	7670	11110	0.690
N014176-012C	100	55.7301	55.8024	723	1	723	1228	0.589

Julia Ramit 12/30/2014

REB 12/31/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/20/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48237	100	53.7565	53.7565	0	1	0		
LCS-48237	100	59.9065	60.0043	978	1	978		
N014176-015C	10	61.2153	61.2868	715	10	7150	12130	0.589
N014176-015C-DUP	10	60.3108	60.382	712	10	7120	12130	0.587
N014176-016C	10	61.0161	61.0852	691	10	6910	10680	0.647
N014176-025C	50	61.1217	61.1803	586	2	1172	2210	0.530
N014177-001A	50	61.1238	61.2167	929	2	1858	2550	0.729
N014194-001F	100	61.4028	61.456	532	1	532	408	1.304

Julia Ramit 12/30/2014

REB 12/31/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/23/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48249	100	55.3697	55.3701	4	1	4		
LCS-48249	100	60.5189	60.6173	984	1	984		
N014176-027C	5	62.4428	62.5092	664	20	13280	21100	0.629
N014180-001A	2	61.3045	61.5078	2033	50	101650	58600	1.735
N014192-001D	100	55.5497	55.6329	832	1	832	1052	0.791
N014192-002D	100	57.0856	57.1734	878	1	878	1265	0.694
N014192-003D	100	54.9553	55.0115	562	1	562	779	0.721
N014192-004D	100	63.9668	64.025	582	1	582	787	0.740
N014193-003C	5	53.8186	53.8868	682	20	13640	21700	0.629
N014193-004D	5	63.9737	64.0544	807	20	16140	26700	0.604
N014193-013C	5	53.9299	54.0281	982	20	19640	26900	0.730
N014193-018C	10	60.6234	60.7298	1064	10	10640	16220	0.656
N014193-018C DUP	10	63.7886	63.8958	1072	10	10720	16220	0.661

Silia Ramit 12/30/2014

REB 12/31/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014176-014A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.1582 * 1

= 0.1582

Reporting result in two significant figures,

Cr^{+6}, µg/L = 0.16

Sample ID: **N014176-001C @ pH 8.13**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.7mL)

= **0.0213675 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (6.15) (0.0213675 N) (1) * 1000

=131.410125 **mg/L**

Reporting results in two significant figures,

= 130 **mg/L** as CaCO3

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.0213675 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.15 mL) (0.0213675N) (1) * 1000

= 131.410125 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 131.410125 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 130 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014176-007C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.264 * 10

= 526.4

Reporting result in two significant figures,

Chloride, mg/L = 530

1/6/2015

SAMPLE CALCULATION

METHOD: EPA 3500CRB
TEST NAME: Hexavalent Chromium
MATRIX: WATER

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Hexavalent Chromium, µg/L = A * DF

Where:
A= mg/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N014176-001A,** concentration in µg/L is calculated as follows:

Hexavalent Chromium, µg/L = 232.047 *10

= 2320.47 µg/L

Since the reporting limit is 10 µg/L therefore,

Hexavalent Chromium concentration is 2300 µg/L

gog 01/05/15

SAMPLE CALCULATION

METHOD: SM4500N03
TEST NAME: Nitrate by Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A*DF

Where:

A= mg/L, Nitrate calculated concentration
DF= dilution factor

For **N014176-011D,** concentration in mg/L is calculated as follows:

Nitrate, mg/L = 0.0158*1

= 0.0158 mg/L

Reporting result in two significant figures,

Nitrate = ND

01/05/15

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014176-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 11.04815381 * 100 * (25/25) * 1000

= 1104815

Reporting results in two significant figures,

Sodium, ug/L = 1100000

Nancy 1/6/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014176
Test Method: EPA 6010
Analysis Date: 12/29/14

Matrix: Water
Batch No.: 48218

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

~~Dilution test is not applicable to K & Na. The calculated concentrations are <25RL.~~
DT failed for Na.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014176-002B-DT 25X	Potassium	ug/L	20589.02	NA	21118.97	2.51%	10
N014176-002B-DT 500X	Sodium	ug/L	1037438	NA	1740396	40.39%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014176
Test Method: EPA 6010
Analysis Date: 12/29/14

Matrix: Water
Batch No.: 48218

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014176-001B-DT 5x	Boron	ug/L	1148.959	NA	953.772	20.46%	10
N014176-001B-DT 5x	Calcium	ug/L	33855.260	PASS	33049.348	2.44%	10
N014176-001B-DT 5x	Iron	ug/L	10.660	NA	20.259	47.38%	10
N014176-001B-DT 5x	Magnesium	ug/L	6627.702	FAIL	6018.043	10.13%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N014176-002B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97340
Client ID:	ZZZZZZ	Batch ID:	48218	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1899987

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	42751.512	2500	20000	21120	108	80	120				

Sample ID	N014176-002B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97340
Client ID:	ZZZZZZ	Batch ID:	48218	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1899988

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1986630.475	50000	20000	1740000	1230	80	120				S

Sample ID	N014176-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97343
Client ID:	ZZZZZZ	Batch ID:	48218	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900311

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5202.328	100	5000	953.8	85.0	80	120				
Calcium	43380.406	500	10000	33050	103	80	120				
Iron	72.706	20	100.0	20.26	52.4	80	120				S
Magnesium	14010.393	100	10000	6018	79.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014176-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 39.889088543919 * 1 * (25/25)

= 39.889088543919

Reporting results in two significant figures,

Arsenic, ug/L = 40

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014176
Test Method: EPA 6020
Analysis Date: 12/30/2014

Matrix: Water
Batch No.: 48213

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn and Mo. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014176-002B-DT 5X	Arsenic	µg/L	3.808742544	PASS	3.854029705	1.18%	10
N014176-002B-DT 5X	Manganese	µg/L	0	NA	0		10
N014176-002B-DT 25X	Molybdenum	µg/L	31.41737651	PASS ~~NA~~	31.68428434	0.84%	10
N014176-002B-DT 5X	Selenium	µg/L	33.54675543	PASS	35.5375367	5.60%	10
N014176-002B-DT 250X	Chromium	µg/L	6700.81473	PASS	6312.034882	6.16%	10

01/05/2015

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014176
Test Method: EPA 6020
Analysis Date: 12/30/2014

Matrix: Water
Batch No.: 48223

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Sb, Be, Cd, Co, Cu, Mn, Mo, Ni, Pb, Ag, Tl, V, and Zn. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014176-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N014176-001B-DT 5X	Arsenic	µg/L	42.0142838	PASS	39.88908854	5.33%	10
N014176-001B-DT 5X	Barium	µg/L	50.83859698	PASS	48.51233496	4.80%	10
N014176-001B-DT 25X	Beryllium	µg/L	0	NA	0		10
N014176-001B-DT 5X	Cadmium	µg/L	0	NA	0		10
N014176-001B-DT 5X	Cobalt	µg/L	0	NA	0		10
N014176-001B-DT 5X	Copper	µg/L	0	NA	0		10
N014176-001B-DT 125X	Chromium	µg/L	2413.993167	PASS	2256.23434	6.99%	10
N014176-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N014176-001B-DT 25X	Molybdenum	µg/L	12.17533826	NA	12.39438896	1.77%	10
N014176-001B-DT 5X	Nickel	µg/L	0.29848279	NA	0.136566458	118.56%	10
N014176-001B-DT 25X	Lead	µg/L	0	NA	0		10
N014176-001B-DT 5X	Selenium	µg/L	19.56928268	PASS	18.67395118	4.79%	10
N014176-001B-DT 5X	Silver	µg/L	0	NA	0		10
N014176-001B-DT 25X	Thallium	µg/L	0	NA	0		10
N014176-001B-DT 5X	Vanadium	µg/L	19.11897175	NA	18.76410605	1.89%	10
N014176-001B-DT 5X	Zinc	µg/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N014176-002B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.898	0.10	10.00	3.854	120	80	120				S
Manganese	35.661	0.50	100.0	0	35.7	80	120				S
Selenium	50.668	0.50	10.00	35.54	151	80	120				S

Sample ID: **N014176-002B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48213** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	47.457	2.5	10.00	31.68	158	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N014176-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48223** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.698	0.50	10.00	0	117	80	120				
Arsenic	51.296	0.10	10.00	39.89	114	80	120				
Barium	156.197	1.0	100.0	48.51	108	80	120				
Cadmium	10.043	0.50	10.00	0	100	80	120				
Cobalt	9.326	0.50	10.00	0	93.3	80	120				
Copper	4.588	1.0	10.00	0	45.9	80	120				S
Manganese	57.255	0.50	100.0	0	57.3	80	120				S
Nickel	10.301	1.0	10.00	0.1366	102	80	120				
Selenium	28.208	0.50	10.00	18.67	95.3	80	120				
Silver	9.820	0.50	10.00	0	98.2	80	120				
Vanadium	28.967	1.0	10.00	18.76	102	80	120				
Zinc	94.919	10	100.0	0	94.9	80	120				

Sample ID: **N014176-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48223** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	11.506	2.5	10.00	0	115	80	120				
Lead	11.693	5.0	10.00	0	117	80	120				
Molybdenum	24.266	2.5	10.00	12.39	119	80	120				
Thallium	11.959	2.5	10.00	0	120	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N014176-002B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **97362**							
Client ID: **ZZZZZZ**	Batch ID: **48213**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2014**	SeqNo: **1900812**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chromium	6894.376	50	10.00	6312	5820	80	120				S	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014176
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N014176-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **97362**
Client ID: **ZZZZZZ**	Batch ID: **48223**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2014**	SeqNo: **1900780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2230.267	25	10.00	2256	-260	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Sample Calculation

Work Order No.:	**N014176**
Test Method:	**EPA 7470**
Matrix:	**WATER**

FORMULA:

Calculate the Mercury concentration in ug/L in the original sample as follows:

Hg = [A] [DF]

where:

A = ug/L, instrument calculated concentration
DF = dilution factor

For: **N014176-001B**

The concentration in ug/L is calculated as follows:

Hg = [A] [DF]

Hg = [-0.08410] [1]

Hg = **-0.08410** ug/L

Since result is less than reporting limit.

Hg = **ND** **ug/L**

Nancy 1/6/2015

January 07, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014193

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 18, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014193

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N014193-003, N014193-013, N014193-017 and N014193-019 due to matrix interference. Samples were analyzed at lower dilution however matrix spikes were not recovered indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit.

Analytical Comments for EPA 218.6R:

Dilution was necessary for samples N014193-002, N014193-004, N014193-006, N014193-008, N014193-009, N014193-010, N014193-011 and N014193-012 due to matrix interference. Samples were analyzed at lower dilution however matrix spikes were not recovered indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N014193-003, N014193-013 and N014193-018 due to precipitation of samples upon the addition of eluent.

Dilution was necessary on sample N014193-004 due to high Chloride concentration.

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Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on samples N014193-018B-MS and N014193-018B-MSD are outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on samples N014192-001B-MS and N014192-001B-MSD are outside recovery criteria for Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014192-001B-MS and N014192-001B-MSD are outside recovery criteria for Iron possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.195 ug/L) and hexavalent chromium (0.309 ug/L) for sample N014193-004 (MW-49-275-200) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.254 and 1.247 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (5.425 ug/L) and hexavalent chromium (0.8295 ug/L) for sample N014193-017 (MW-24B-200) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 5.867 and 1.969 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014192-001B-MS and N014192-001B-MSD are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) on QC sample N014193-006B-MS is outside recovery criteria for Molybdenum since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014193

CASE NARRATIVE

Dilution was necessary for some analytes on samples N014193-001, N014193-002, N014193-003, N014193-004, N014193-006,N014193-008, N014193-009, N014193-011, N014193-012 , N014193-013, N014193-017, N014193-018 and N014193-019 due to failed Internal Standard when samples were analyzed at no dilution.

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Date: *07-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014193
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014193-001A	MW-70BR-225-200	Water	12/16/2014 8:44:00 AM	12/18/2014	1/7/2015
N014193-001B	MW-70BR-225-200	Water	12/16/2014 8:44:00 AM	12/18/2014	1/7/2015
N014193-001C	MW-70BR-225-200	Water	12/16/2014 8:44:00 AM	12/18/2014	1/7/2015
N014193-001D	MW-70BR-225-200	Water	12/16/2014 8:44:00 AM	12/18/2014	1/7/2015
N014193-002A	MW-131-200	Water	12/17/2014 7:00:00 AM	12/18/2014	1/7/2015
N014193-002B	MW-131-200	Water	12/17/2014 7:00:00 AM	12/18/2014	1/7/2015
N014193-002C	MW-131-200	Water	12/17/2014 7:00:00 AM	12/18/2014	1/7/2015
N014193-002D	MW-131-200	Water	12/17/2014 7:00:00 AM	12/18/2014	1/7/2015
N014193-003A	MW-41D-200	Water	12/17/2014 9:16:00 AM	12/18/2014	1/7/2015
N014193-003B	MW-41D-200	Water	12/17/2014 9:16:00 AM	12/18/2014	1/7/2015
N014193-003C	MW-41D-200	Water	12/17/2014 9:16:00 AM	12/18/2014	1/7/2015
N014193-003D	MW-41D-200	Water	12/17/2014 9:16:00 AM	12/18/2014	1/7/2015
N014193-004A	MW-49-275-200	Water	12/17/2014 1:20:00 PM	12/18/2014	1/7/2015
N014193-004B	MW-49-275-200	Water	12/17/2014 1:20:00 PM	12/18/2014	1/7/2015
N014193-004C	MW-49-275-200	Water	12/17/2014 1:20:00 PM	12/18/2014	1/7/2015
N014193-004D	MW-49-275-200	Water	12/17/2014 1:20:00 PM	12/18/2014	1/7/2015
N014193-004E	MW-49-275-200	Water	12/17/2014 1:20:00 PM	12/18/2014	1/7/2015
N014193-005A	MW-49-275-200-EB	Water	12/17/2014 12:34:00 PM	12/18/2014	1/7/2015
N014193-005B	MW-49-275-200-EB	Water	12/17/2014 12:34:00 PM	12/18/2014	1/7/2015
N014193-006A	MW-49-365-200	Water	12/17/2014 2:16:00 PM	12/18/2014	1/7/2015
N014193-006B	MW-49-365-200	Water	12/17/2014 2:16:00 PM	12/18/2014	1/7/2015
N014193-006C	MW-49-365-200	Water	12/17/2014 2:16:00 PM	12/18/2014	1/7/2015
N014193-006D	MW-49-365-200	Water	12/17/2014 2:16:00 PM	12/18/2014	1/7/2015
N014193-007A	MW-49-365-200-EB	Water	12/17/2014 1:40:00 PM	12/18/2014	1/7/2015
N014193-007B	MW-49-365-200-EB	Water	12/17/2014 1:40:00 PM	12/18/2014	1/7/2015
N014193-008A	MW-52D-200	Water	12/17/2014 12:09:00 PM	12/18/2014	1/7/2015
N014193-008B	MW-52D-200	Water	12/17/2014 12:09:00 PM	12/18/2014	1/7/2015
N014193-008C	MW-52D-200	Water	12/17/2014 12:09:00 PM	12/18/2014	1/7/2015
N014193-008D	MW-52D-200	Water	12/17/2014 12:09:00 PM	12/18/2014	1/7/2015

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014193
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014193-009A	MW-52M-200	Water	12/17/2014 1:54:00 PM	12/18/2014	1/7/2015
N014193-009B	MW-52M-200	Water	12/17/2014 1:54:00 PM	12/18/2014	1/7/2015
N014193-009C	MW-52M-200	Water	12/17/2014 1:54:00 PM	12/18/2014	1/7/2015
N014193-009D	MW-52M-200	Water	12/17/2014 1:54:00 PM	12/18/2014	1/7/2015
N014193-010A	MW-52S-200	Water	12/17/2014 12:53:00 PM	12/18/2014	1/7/2015
N014193-010B	MW-52S-200	Water	12/17/2014 12:53:00 PM	12/18/2014	1/7/2015
N014193-010C	MW-52S-200	Water	12/17/2014 12:53:00 PM	12/18/2014	1/7/2015
N014193-010D	MW-52S-200	Water	12/17/2014 12:53:00 PM	12/18/2014	1/7/2015
N014193-011A	MW-53D-200	Water	12/17/2014 9:35:00 AM	12/18/2014	1/7/2015
N014193-011B	MW-53D-200	Water	12/17/2014 9:35:00 AM	12/18/2014	1/7/2015
N014193-011C	MW-53D-200	Water	12/17/2014 9:35:00 AM	12/18/2014	1/7/2015
N014193-011D	MW-53D-200	Water	12/17/2014 9:35:00 AM	12/18/2014	1/7/2015
N014193-012A	MW-53M-200	Water	12/17/2014 10:49:00 AM	12/18/2014	1/7/2015
N014193-012B	MW-53M-200	Water	12/17/2014 10:49:00 AM	12/18/2014	1/7/2015
N014193-012C	MW-53M-200	Water	12/17/2014 10:49:00 AM	12/18/2014	1/7/2015
N014193-012D	MW-53M-200	Water	12/17/2014 10:49:00 AM	12/18/2014	1/7/2015
N014193-013A	MW-22-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-013B	MW-22-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-013C	MW-22-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-013D	MW-22-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-014A	MW-227-200	Water	12/18/2014 7:59:00 AM	12/18/2014	1/7/2015
N014193-015A	MW-228-200	Water	12/18/2014 3:29:00 PM	12/18/2014	1/7/2015
N014193-016A	MW-229-200	Water	12/18/2014 3:31:00 PM	12/18/2014	1/7/2015
N014193-017A	MW-24B-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-017B	MW-24B-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-017C	MW-24B-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-017D	MW-24B-200	Water	12/18/2014 2:48:00 PM	12/18/2014	1/7/2015
N014193-018A	MW-68-240-200	Water	12/18/2014 9:38:00 AM	12/18/2014	1/7/2015
N014193-018B	MW-68-240-200	Water	12/18/2014 9:38:00 AM	12/18/2014	1/7/2015
N014193-018C	MW-68-240-200	Water	12/18/2014 9:38:00 AM	12/18/2014	1/7/2015

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014193
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014193-018D	MW-68-240-200	Water	12/18/2014 9:38:00 AM	12/18/2014	1/7/2015
N014193-019A	MW-68BR-280-200	Water	12/18/2014 11:42:00 AM	12/18/2014	1/7/2015
N014193-019B	MW-68BR-280-200	Water	12/18/2014 11:42:00 AM	12/18/2014	1/7/2015
N014193-019C	MW-68BR-280-200	Water	12/18/2014 11:42:00 AM	12/18/2014	1/7/2015
N014193-019D	MW-68BR-280-200	Water	12/18/2014 11:42:00 AM	12/18/2014	1/7/2015

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ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-200
Lab Order:	N014193	**Collection Date:**	12/16/2014 8:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-131-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	39000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-275-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	27000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-365-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 2:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	39000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 12:09:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:54:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 12:53:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	9100	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	27000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 10:49:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	27000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 9:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141219D**	QC Batch: **R97242**			PrepDate			Analyst: **RB**
Specific Conductance	21000	0.10	0.10		umhos/cm	1	12/19/2014 05:25 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014193-001C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97242**
Client ID: **ZZZZZZ** Batch ID: **R97242** TestNo: **EPA 120.1** Analysis Date: **12/19/2014** SeqNo: **1895561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13740.000	0.10						13730	0.0728	10	

Sample ID **N014194-001F DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97242**
Client ID: **ZZZZZZ** Batch ID: **R97242** TestNo: **EPA 120.1** Analysis Date: **12/19/2014** SeqNo: **1903412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	404.000	0.10						408.0	0.985	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141222B**	QC Batch: **48249**				PrepDate	**12/22/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	14000	200	200		mg/L	1	12/22/2014 12:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-275-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141222B**	QC Batch: **48249**				PrepDate	**12/22/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	16000	200	200		mg/L	1	12/22/2014 12:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141222B**	QC Batch: **48249**				PrepDate	**12/22/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	20000	200	200		mg/L	1	12/22/2014 12:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 9:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141222B**	QC Batch: **48249**				PrepDate	**12/22/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/22/2014 12:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48249** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/22/2014** RunNo: **97280**
Client ID: **PBW** Batch ID: **48249** TestNo: **SM2540C** Analysis Date: **12/22/2014** SeqNo: **1896796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48249** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/22/2014** RunNo: **97280**
Client ID: **LCSW** Batch ID: **48249** TestNo: **SM2540C** Analysis Date: **12/22/2014** SeqNo: **1896797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	984.000	10	1000	0	98.4	80	120				

Sample ID **N014193-018C-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/22/2014** RunNo: **97280**
Client ID: **ZZZZZZ** Batch ID: **48249** TestNo: **SM2540C** Analysis Date: **12/22/2014** SeqNo: **1896809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10720.000	100						10640	0.749	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-200
Lab Order:	N014193	**Collection Date:**	12/16/2014 8:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	1900	6.9	50		µg/L	5	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	2200	0.76	25		µg/L	25	12/23/2014 06:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-131-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141223A**	QC Batch: **R97319**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/23/2014 06:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	12/23/2014 02:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141223A**	QC Batch: **R97319**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/23/2014 06:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	1.0	0.030	1.0		µg/L	1	12/23/2014 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-275-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141223A** QC Batch: **R97319**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/23/2014 07:02 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141223A** QC Batch: **48252**				PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	1.2	0.030	1.0		µg/L	1	12/23/2014 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-365-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 2:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141223A**	QC Batch: **R97319**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/23/2014 07:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	12/23/2014 02:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 12:09:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141223A** QC Batch: **R97319** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/23/2014 07:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141223A** QC Batch: **48252** PrepDate **12/22/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/23/2014 03:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:54:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141224A** QC Batch: **R97321** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/24/2014 03:24 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141223A** QC Batch: **48252** PrepDate **12/22/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/23/2014 03:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 12:53:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141224A** QC Batch: **R97321** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/24/2014 04:12 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141223A** QC Batch: **48252** PrepDate **12/22/2014**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/23/2014 03:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141224A**	QC Batch: **R97321**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/24/2014 04:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	12/23/2014 04:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 10:49:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141224A**	QC Batch: **R97321**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/24/2014 04:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	12/23/2014 04:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141226A**	QC Batch: **R97365**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/26/2014 02:27 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	12/23/2014 04:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-227-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 7:59:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141226A**	QC Batch: **R97365**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/26/2014 01:08 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-228-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 3:29:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141226A**	QC Batch: **R97365**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/26/2014 01:27 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-229-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 3:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141226A**	QC Batch: **R97365**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/26/2014 01:47 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141229A**	QC Batch: **R97366**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/29/2014 06:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	5.4	0.030	1.0		µg/L	1	12/23/2014 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 9:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	2100	6.9	50		µg/L	5	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	2200	0.76	25		µg/L	25	12/23/2014 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_141229A**	QC Batch: **R97366**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	12/29/2014 06:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Chromium	ND	0.15	5.0		µg/L	5	12/23/2014 05:15 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97319** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **PBW** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97319** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **LCSW** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	90	110				

Sample ID **N014235-001C-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.418	0.20						0.4131	1.06	20	

Sample ID **N014235-001C-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.460	0.20	5.000	0.4131	101	90	110				

Sample ID **N014235-001C-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.470	0.20	5.000	0.4131	101	90	110	5.460	0.170	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N014176-022A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	97319
Client ID:	ZZZZZZ	Batch ID:	R97319	TestNo:	EPA 218.6			Analysis Date:	12/23/2014	SeqNo:	1899241

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID	N014176-023A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	97319
Client ID:	ZZZZZZ	Batch ID:	R97319	TestNo:	EPA 218.6			Analysis Date:	12/23/2014	SeqNo:	1899245

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0.04890	105	90	110				

Sample ID	N014176-028A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	97319
Client ID:	ZZZZZZ	Batch ID:	R97319	TestNo:	EPA 218.6			Analysis Date:	12/23/2014	SeqNo:	1899247

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.640	1.0	5.000	0.3505	106	90	110				

Sample ID	N014193-003A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	97319
Client ID:	ZZZZZZ	Batch ID:	R97319	TestNo:	EPA 218.6			Analysis Date:	12/23/2014	SeqNo:	1899253

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.3470	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97365** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **PBW** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97365** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **LCSW** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.925	0.20	5.000	0	98.5	90	110				

Sample ID **N014193-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **ZZZZZZ** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0.07910	99.1	90	110				

Sample ID **N014193-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **ZZZZZZ** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.126	0.20	1.000	0.07870	105	90	110				

Sample ID **N014193-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **ZZZZZZ** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.168	0.20	1.000	0.07400	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014193-013A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **ZZZZZZ** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	1.0						0	0	20	

Sample ID **N014193-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **ZZZZZZ** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	1.0	5.000	0	100	90	110				

Sample ID **N014193-013A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97365**
Client ID: **ZZZZZZ** Batch ID: **R97365** TestNo: **EPA 218.6** Analysis Date: **12/26/2014** SeqNo: **1901105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.023	1.0	5.000	0	100	90	110	5.004	0.389	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97366** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **PBW** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97366** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **LCSW** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.931	0.20	5.000	0	98.6	90	110				

Sample ID **N014251-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0.08170	101	90	110				

Sample ID **N014251-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.054	0.20	5.000	9.214	96.8	90	110				

Sample ID **N014251-005A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.159	0.20	5.000	9.214	98.9	90	110	14.05	0.749	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014251-005A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.139	0.20						9.214	0.817	20	

Sample ID **N014251-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.101	0.40	10.00	18.45	96.5	90	110				

Sample ID **N014193-017A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.634	1.0	5.000	0.8295	96.1	90	110				

Sample ID **N014193-019A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.978	1.0	5.000	0.8160	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R97319** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **PBW** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97319** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **LCSW** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	90	110				

Sample ID **N014235-001C-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.418	0.20						0.4131	1.06	20	

Sample ID **N014235-001C-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.460	0.20	5.000	0.4131	101	90	110				

Sample ID **N014235-001C-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.470	0.20	5.000	0.4131	101	90	110	5.460	0.170	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014193-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.596	1.0	5.000	0	91.9	90	110				

Sample ID **N014193-004A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.503	1.0	5.000	0.3090	104	90	110				

Sample ID **N014193-006A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.782	1.0	5.000	0	95.6	90	110				

Sample ID **N014193-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97319**
Client ID: **ZZZZZZ** Batch ID: **R97319** TestNo: **EPA 218.6** Analysis Date: **12/23/2014** SeqNo: **1899299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.173	1.0	5.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R97321** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **PBW** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97321** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **LCSW** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.957	0.20	5.000	0	99.1	90	110				

Sample ID **N014193-009A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **ZZZZZZ** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	1.0						0	0	20	

Sample ID **N014193-009A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **ZZZZZZ** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.224	1.0	5.000	0	104	90	110				

Sample ID **N014193-009A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **ZZZZZZ** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.148	1.0	5.000	0	103	90	110	5.224	1.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014193-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **ZZZZZZ** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.277	1.0	5.000	0	106	90	110				

Sample ID **N014193-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **ZZZZZZ** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.347	1.0	5.000	0	107	90	110				

Sample ID **N014193-012A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97321**
Client ID: **ZZZZZZ** Batch ID: **R97321** TestNo: **EPA 218.6** Analysis Date: **12/24/2014** SeqNo: **1899321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.278	1.0	5.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R97366** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **PBW** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97366** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **LCSW** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.931	0.20	5.000	0	98.6	90	110				

Sample ID **N014251-005A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.054	0.20	5.000	9.214	96.8	90	110				

Sample ID **N014251-005A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.159	0.20	5.000	9.214	98.9	90	110	14.05	0.749	20	

Sample ID **N014251-005A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.139	0.20						9.214	0.817	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID	**N014251-001A-MS**	SampType:	**MS**	TestCode:	**218.6R_WPG**	Units:	**µg/L**	Prep Date:			RunNo:	**97366**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97366**	TestNo:	**EPA 218.6**			Analysis Date:	**12/29/2014**		SeqNo:	**1901151**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.728	1.0	25.00	2.276	97.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97411** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **LCSW** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	246.521	10	250.0	0	98.6	85	115				

Sample ID **MB-R97411** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **PBW** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014176-001A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2257.230	100						2320	2.76	20	

Sample ID **N014176-001A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4772.150	100	2500	2320	98.1	85	115				

Sample ID **N014176-001A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4733.790	100	2500	2320	96.5	85	115	4772	0.807	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	N014176-006A-DUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	97411
Client ID:	ZZZZZZ	Batch ID:	R97411	TestNo:	SM 3500-Cr B			Analysis Date:	1/5/2015	SeqNo:	1902405

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2012.570	100						2025	0.611	20	

Sample ID	N014176-006A-MS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	97411
Client ID:	ZZZZZZ	Batch ID:	R97411	TestNo:	SM 3500-Cr B			Analysis Date:	1/5/2015	SeqNo:	1902406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4527.940	100	2500	2025	100	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48252	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/22/2014	RunNo:	97307
Client ID:	PBW	Batch ID:	48252	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2014	SeqNo:	1898581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.137	1.0									

Sample ID	LCS-48252	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/22/2014	RunNo:	97307
Client ID:	LCSW	Batch ID:	48252	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2014	SeqNo:	1898582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.970	1.0	10.00	0	99.7	85	115				

Sample ID	N014193-006B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/22/2014	RunNo:	97307
Client ID:	ZZZZZZ	Batch ID:	48252	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2014	SeqNo:	1898609

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.477	5.0	10.00	0	105	75	125				

Sample ID	N014192-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/22/2014	RunNo:	97307
Client ID:	ZZZZZZ	Batch ID:	48252	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2014	SeqNo:	1898635

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2720.982	25	10.00	2854	-1330	75	125				S

Sample ID	N014192-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/22/2014	RunNo:	97307
Client ID:	ZZZZZZ	Batch ID:	48252	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2014	SeqNo:	1898636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2767.596	25	10.00	2854	-867	75	125	2721	1.70	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141224H**	QC Batch: **R97417**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	39	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Total (As CaCO3)	39	1.2	5.0		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-275-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141224H**	QC Batch: **R97417**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	37	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Total (As CaCO3)	37	1.2	5.0		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141224H**	QC Batch: **R97417**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	640	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Total (As CaCO3)	640	1.2	5.0		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 9:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141224H**	QC Batch: **R97417**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	67	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Total (As CaCO3)	67	1.2	5.0		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97417** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **LCSW** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	96.398	5.0	100.0	0	96.4	85	115				
Alkalinity, Total (As CaCO3)	100.636	5.0	100.0	0	101	85	115				

Sample ID **MB-R97417** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **PBW** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014251-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **ZZZZZZ** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	59.322	5.0						59.32	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	59.322	5.0						59.32	0	30	

Sample ID **N014251-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **ZZZZZZ** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	130.297	5.0	100.0	31.78	98.5	75	125				
Alkalinity, Total (As CaCO3)	130.297	5.0	100.0	31.78	98.5	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014251-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **ZZZZZZ** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	129.237	5.0	100.0	31.78	97.5	75	125	130.3	0.816	20	
Alkalinity, Total (As CaCO3)	129.237	5.0	100.0	31.78	97.5	75	125	130.3	0.816	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014193
Project: PG&E Topock
Lab ID: N014193-003

Client Sample ID: MW-41D-200
Collection Date: 12/17/2014 9:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/24/2014 11:20 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141229A** QC Batch: **R97352**				PrepDate			Analyst: **PS**
Chloride	7400	25	500		mg/L	1000	12/29/2014 12:01 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Sulfate	750	3.3	50		mg/L	100	12/24/2014 02:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014193
Project: PG&E Topock
Lab ID: N014193-004

Client Sample ID: MW-49-275-200
Collection Date: 12/17/2014 1:20:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/24/2014 12:36 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141229A** QC Batch: **R97352**				PrepDate			Analyst: **PS**
Chloride	8800	25	500		mg/L	1000	12/29/2014 12:14 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Sulfate	1400	3.3	50		mg/L	100	12/24/2014 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014193
Project: PG&E Topock
Lab ID: N014193-013

Client Sample ID: MW-22-200
Collection Date: 12/18/2014 2:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Bromide	ND	0.28	5.0		mg/L	10	12/24/2014 11:33 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141229A** QC Batch: **R97352**				PrepDate			Analyst: **PS**
Chloride	9100	50	1000		mg/L	2000	12/29/2014 12:26 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Sulfate	2200	6.6	100		mg/L	200	12/24/2014 07:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014193
Project: PG&E Topock
Lab ID: N014193-018

Client Sample ID: MW-68-240-200
Collection Date: 12/18/2014 9:38:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Bromide	ND	0.14	2.5		mg/L	5	12/24/2014 12:11 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141229A** QC Batch: **R97352**				PrepDate			Analyst: **PS**
Chloride	5200	25	500		mg/L	1000	12/29/2014 12:39 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_141224A** QC Batch: **R97329**				PrepDate			Analyst: **PS**
Sulfate	850	3.3	50		mg/L	100	12/24/2014 07:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R97329_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97329**
Client ID: **PBW** Batch ID: **R97329** TestNo: **EPA 300.0** Analysis Date: **12/24/2014** SeqNo: **1899647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R97329_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97329**
Client ID: **LCSW** Batch ID: **R97329** TestNo: **EPA 300.0** Analysis Date: **12/24/2014** SeqNo: **1899648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.435	0.50	2.500	0	97.4	90	110				

Sample ID **N014193-013C-MS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97329**
Client ID: **ZZZZZZ** Batch ID: **R97329** TestNo: **EPA 300.0** Analysis Date: **12/24/2014** SeqNo: **1899655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	22.510	5.0	25.00	0	90.0	80	120				

Sample ID **N014193-013C-DUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97329**
Client ID: **ZZZZZZ** Batch ID: **R97329** TestNo: **EPA 300.0** Analysis Date: **12/24/2014** SeqNo: **1899656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	5.0						0	0	20	

Sample ID **N014193-013C-MSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97329**
Client ID: **ZZZZZZ** Batch ID: **R97329** TestNo: **EPA 300.0** Analysis Date: **12/24/2014** SeqNo: **1899657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	22.730	5.0	25.00	0	90.9	80	120	22.51	0.973	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R97352_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97352
Client ID:	PBW	Batch ID:	R97352	TestNo:	EPA 300.0			Analysis Date:	12/29/2014	SeqNo:	1900443

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R97352_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97352
Client ID:	LCSW	Batch ID:	R97352	TestNo:	EPA 300.0			Analysis Date:	12/29/2014	SeqNo:	1900444

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.506	0.50	2.500	0	100	90	110				

Sample ID	N014193-013C-DUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97352
Client ID:	ZZZZZZ	Batch ID:	R97352	TestNo:	EPA 300.0			Analysis Date:	12/29/2014	SeqNo:	1900449

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9274.000	1000						9146	1.39	20	

Sample ID	N014193-013C-MS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97352
Client ID:	ZZZZZZ	Batch ID:	R97352	TestNo:	EPA 300.0			Analysis Date:	12/29/2014	SeqNo:	1900450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	14452.000	1000	5000	9146	106	80	120				

Sample ID	N014193-013C-MSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	97352
Client ID:	ZZZZZZ	Batch ID:	R97352	TestNo:	EPA 300.0			Analysis Date:	12/29/2014	SeqNo:	1900451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	14590.000	1000	5000	9146	109	80	120	14450	0.950	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R97329_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97329
Client ID:	PBW	Batch ID:	R97329	TestNo:	EPA 300.0			Analysis Date:	12/24/2014	SeqNo:	1899691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R97329_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97329
Client ID:	LCSW	Batch ID:	R97329	TestNo:	EPA 300.0			Analysis Date:	12/24/2014	SeqNo:	1899692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.041	0.50	5.000	0	101	90	110				

Sample ID	N014193-003C-MS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97329
Client ID:	ZZZZZZ	Batch ID:	R97329	TestNo:	EPA 300.0			Analysis Date:	12/24/2014	SeqNo:	1899701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1232.800	50	500.0	745.6	97.4	80	120				

Sample ID	N014193-003C-DUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97329
Client ID:	ZZZZZZ	Batch ID:	R97329	TestNo:	EPA 300.0			Analysis Date:	12/24/2014	SeqNo:	1899702

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	745.200	50						745.6	0.0537	20	

Sample ID	N014193-003C-MSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97329
Client ID:	ZZZZZZ	Batch ID:	R97329	TestNo:	EPA 300.0			Analysis Date:	12/24/2014	SeqNo:	1899703

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1218.200	50	500.0	745.6	94.5	80	120	1233	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-200
Lab Order:	N014193	**Collection Date:**	12/16/2014 8:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150106A**	QC Batch: **R97439**			PrepDate			Analyst: **PS**
Nitrate/Nitrite as N	3.5	0.11	0.25		mg/L	5	1/6/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150106A** QC Batch: **R97439** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	1/6/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150106A** QC Batch: **R97439** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	0.97	0.022	0.050		mg/L	1	1/6/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 9:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150106A** QC Batch: **R97439** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	4.4	0.11	0.25		mg/L	5	1/6/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150106A** QC Batch: **R97439** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	1/6/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97439** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **PBW** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97439** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **LCSW** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.925	0.050	1.000	0	92.5	85	115				

Sample ID **N014193-003DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **ZZZZZZ** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.472	0.050						0.4803	1.85	20	

Sample ID **N014193-003DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **ZZZZZZ** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.267	0.050	1.000	0.4803	78.7	75	125				

Sample ID **N014193-003DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **ZZZZZZ** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.296	0.050	1.000	0.4803	81.6	75	125	1.267	2.22	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48253**			PrepDate	**12/22/2014**		Analyst: **CEI**
Boron	1500	19	100		ug/L	1	12/29/2014 04:58 PM
Calcium	400000	58	500		ug/L	1	12/29/2014 04:58 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 04:58 PM
Magnesium	22000	11	100		ug/L	1	12/29/2014 04:58 PM
Sodium	3700000	19000	250000		ug/L	500	12/29/2014 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-275-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48253**			PrepDate	**12/22/2014**		Analyst: **CEI**
Boron	2100	19	100		ug/L	1	12/29/2014 05:03 PM
Calcium	230000	58	500		ug/L	1	12/29/2014 05:03 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 05:03 PM
Magnesium	4600	11	100		ug/L	1	12/29/2014 05:03 PM
Sodium	4900000	19000	250000		ug/L	500	12/29/2014 01:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48253**			PrepDate	**12/22/2014**		Analyst: **CEI**
Boron	2100	19	100		ug/L	1	12/29/2014 05:09 PM
Calcium	920000	290	2500		ug/L	5	12/29/2014 07:34 PM
Iron	10000	1.3	20		ug/L	1	12/29/2014 05:09 PM
Magnesium	180000	11	100		ug/L	1	12/29/2014 05:09 PM
Sodium	4800000	19000	250000		ug/L	500	12/29/2014 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014193
Project: PG&E Topock
Lab ID: N014193-018

Client Sample ID: MW-68-240-200
Collection Date: 12/18/2014 9:38:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_141229B**	QC Batch: **48253**			PrepDate	**12/22/2014**		Analyst: **CEI**
Boron	1700	19	100		ug/L	1	12/29/2014 05:15 PM
Calcium	530000	290	2500		ug/L	5	12/29/2014 07:40 PM
Iron	ND	1.3	20		ug/L	1	12/29/2014 05:15 PM
Magnesium	17000	11	100		ug/L	1	12/29/2014 05:15 PM
Sodium	3100000	3800	50000		ug/L	100	12/29/2014 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48253	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/22/2014	RunNo:	97340
Client ID:	PBW	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900003

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-48253	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/22/2014	RunNo:	97340
Client ID:	LCSW	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900004

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	18629.930	500	20000	0	93.1	85	115				

Sample ID	N014193-018B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/22/2014	RunNo:	97340
Client ID:	ZZZZZZ	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2796991.447	50000	20000	3090000	-1470	75	125				S

Sample ID	N014193-018B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/22/2014	RunNo:	97340
Client ID:	ZZZZZZ	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900018

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2797313.556	50000	20000	3090000	-1460	75	125	2797000	0.0115	20	S

Sample ID	MB-48253	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/22/2014	RunNo:	97343
Client ID:	PBW	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900270

Analyte	Result	PQL
Boron	36.226	100
Calcium	ND	500
Iron	9.484	20
Magnesium	15.327	100

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48253** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/22/2014** RunNo: **97343**
Client ID: **LCSW** Batch ID: **48253** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4408.957	100	5000	0	88.2	85	115				
Calcium	8987.120	500	10000	0	89.9	85	115				
Iron	108.042	20	100.0	0	108	85	115				
Magnesium	9401.082	100	10000	0	94.0	85	115				

Sample ID **N014192-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97343**
Client ID: **ZZZZZZ** Batch ID: **48253** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4618.269	100	5000	273.4	86.9	75	125				
Calcium	117688.127	500	10000	99750	179	75	125				S
Iron	55.436	20	100.0	0	55.4	75	125				S
Magnesium	23518.983	100	10000	14300	92.2	75	125				

Sample ID **N014192-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **97343**
Client ID: **ZZZZZZ** Batch ID: **48253** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/29/2014** SeqNo: **1900279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4623.156	100	5000	273.4	87.0	75	125	4618	0.106	20	
Calcium	117525.349	500	10000	99750	178	75	125	117700	0.138	20	S
Iron	55.471	20	100.0	0	55.5	75	125	55.44	0.0638	20	S
Magnesium	23511.659	100	10000	14300	92.1	75	125	23520	0.0311	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-200
Lab Order:	N014193	**Collection Date:**	12/16/2014 8:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	1.9	0.13	0.50		µg/L	5	12/23/2014 02:07 PM
Manganese	ND	0.026	0.50		µg/L	1	12/23/2014 02:02 PM
Molybdenum	18	0.76	2.5		µg/L	5	12/23/2014 02:07 PM
Selenium	3.0	0.34	2.5		µg/L	5	1/7/2015 11:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:16:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	2.9	0.13	0.50		µg/L	5	12/23/2014 02:29 PM
Manganese	32	0.026	0.50		µg/L	1	12/23/2014 02:24 PM
Molybdenum	80	0.76	2.5		µg/L	5	12/23/2014 02:29 PM
Selenium	ND	0.34	2.5		µg/L	5	12/23/2014 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-275-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Manganese	250	0.13	2.5		µg/L	5	12/23/2014 02:40 PM
Molybdenum	270	0.76	2.5		µg/L	5	12/23/2014 02:40 PM
Selenium	ND	0.34	2.5		µg/L	5	12/23/2014 02:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 12:09:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**				PrepDate	**12/22/2014**	Analyst: **CEI**
Arsenic	3.5	0.13	0.50		µg/L	5	12/23/2014 03:35 PM
Manganese	110	0.13	2.5		µg/L	5	12/23/2014 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 1:54:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**				PrepDate	**12/22/2014**	Analyst: **CEI**
Arsenic	1.8	0.13	0.50		µg/L	5	12/23/2014 03:46 PM
Manganese	120	0.026	0.50		µg/L	1	12/23/2014 03:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 12:53:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	0.16	0.027	0.10		µg/L	1	12/23/2014 03:52 PM
Manganese	1700	0.64	12		µg/L	25	12/23/2014 06:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 9:35:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	2.9	0.13	0.50		µg/L	5	12/23/2014 04:09 PM
Manganese	1200	0.64	12		µg/L	25	12/23/2014 06:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-200
Lab Order:	N014193	**Collection Date:**	12/17/2014 10:49:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	0.85	0.13	0.50		µg/L	5	12/23/2014 04:31 PM
Manganese	270	0.13	2.5		µg/L	5	12/23/2014 04:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**				PrepDate	**12/22/2014**	Analyst: **CEI**
Arsenic	14	0.13	0.50		µg/L	5	12/23/2014 04:42 PM
Manganese	6000	1.3	25		µg/L	50	12/23/2014 06:38 PM
Molybdenum	32	0.76	2.5		µg/L	5	12/23/2014 04:42 PM
Selenium	ND	0.34	2.5		µg/L	5	12/23/2014 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	2.5	0.13	0.50		µg/L	5	12/23/2014 04:53 PM
Manganese	77	0.026	0.50		µg/L	1	12/23/2014 04:47 PM
Molybdenum	45	0.76	2.5		µg/L	5	12/23/2014 04:53 PM
Selenium	ND	0.34	2.5		µg/L	5	12/23/2014 04:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 9:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**			PrepDate	**12/22/2014**		Analyst: **CEI**
Arsenic	1.6	0.13	0.50		µg/L	5	12/23/2014 05:04 PM
Manganese	43	0.026	0.50		µg/L	1	1/7/2015 11:08 AM
Molybdenum	23	0.76	2.5		µg/L	5	12/23/2014 05:04 PM
Selenium	5.3	0.34	2.5		µg/L	5	12/23/2014 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-200
Lab Order:	N014193	**Collection Date:**	12/18/2014 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014193-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141223A**	QC Batch: **48252**				PrepDate	**12/22/2014**	Analyst: **CEI**
Arsenic	1.2	0.13	0.50		µg/L	5	12/23/2014 05:15 PM
Manganese	ND	0.13	2.5		µg/L	5	12/23/2014 05:15 PM
Molybdenum	63	0.76	2.5		µg/L	5	12/23/2014 05:15 PM
Selenium	ND	0.34	2.5		µg/L	5	12/23/2014 05:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48252** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/22/2014** RunNo: **97307**
Client ID: **PBW** Batch ID: **48252** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2014** SeqNo: **1898755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48252** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/22/2014** RunNo: **97307**
Client ID: **LCSW** Batch ID: **48252** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2014** SeqNo: **1898756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.200	0.10	10.00	0	102	85	115				
Manganese	101.095	0.50	100.0	0	101	85	115				
Molybdenum	10.169	0.50	10.00	0	102	85	115				
Selenium	9.841	0.50	10.00	0	98.4	85	115				

Sample ID **N014192-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/22/2014** RunNo: **97307**
Client ID: **ZZZZZZ** Batch ID: **48252** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2014** SeqNo: **1898763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.460	0.10	10.00	1.418	110	75	125				
Manganese	105.960	0.50	100.0	4.248	102	75	125				
Molybdenum	13.052	0.50	10.00	1.337	117	75	125				
Selenium	11.302	0.50	10.00	0.4310	109	75	125				

Sample ID **N014192-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/22/2014** RunNo: **97307**
Client ID: **ZZZZZZ** Batch ID: **48252** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2014** SeqNo: **1898764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.567	0.10	10.00	1.418	111	75	125	12.46	0.858	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014192-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/22/2014** RunNo: **97307**
Client ID: **ZZZZZZ** Batch ID: **48252** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2014** SeqNo: **1898764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.041	0.50	100.0	4.248	102	75	125	106.0	0.0763	20	
Molybdenum	13.016	0.50	10.00	1.337	117	75	125	13.05	0.281	20	
Selenium	10.776	0.50	10.00	0.4310	103	75	125	11.30	4.77	20	

Sample ID **N014193-006B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/22/2014** RunNo: **97307**
Client ID: **ZZZZZZ** Batch ID: **48252** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2014** SeqNo: **1898783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.031	0.50	10.00	3.167	109	75	125				
Manganese	134.442	2.5	100.0	22.38	112	75	125				
Molybdenum	207.040	2.5	10.00	192.7	144	75	125				S
Selenium	10.388	2.5	10.00	0	104	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/18/2014 4:05:21 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/18/2014
COC Number: 13

			Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	28	180	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-70BR-225-200	12/16/2014	8:44	Water			X	X		X		X			X			X		N014193-01	4	
MW-131-200	12/17/2014	7:00	Water		X				X			X		X					-02	5	
MW-41D-200	12/17/2014	9:16	Water	X			X	X	X		X		X	X	X	X	X		-03	4	
MW-49-275-200	12/17/2014	13:20	Water		X			X	X		X	X	X	X	X	X		X	-04	6	
MW-49-275-200-EB	12/17/2014	12:34	Water	X					X										-05	2	Hold
MW-49-365-200	12/17/2014	14:16	Water		X				X			X		X					-06	5	
MW-49-365-200-EB	12/17/2014	13:40	Water	X					X										-07	2	Hold
MW-52D-200	12/17/2014	12:09	Water		X		X		X	X		X		X					-08	5	
MW-52M-200	12/17/2014	13:54	Water		X		X		X	X		X		X					-09	5	
MW-52S-200	12/17/2014	12:53	Water		X		X		X	X		X		X					-10	5	
MW-53D-200	12/17/2014	9:35	Water		X		X		X	X		X		X					-11	5	
MW-53M-200	12/17/2014	10:49	Water		X		X		X	X		X		X					-12	5	
MW-22-200	12/18/2014	14:48	Water	X			X	X	X		X		X	X	X	X		X	-13	4	

	Signatures	Date/Time
Approved by		12-18-14
Sampled by		1617
Relinquished by		
Received by		12/18/14@1617
Relinquished by		
Received by		12/18/14@1841

Shipping Details

Method of Shipment: courier
On Ice: yes / no 4.0/1.9/3.6°C
Airbill No: IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.
Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

12/18/2014 4:05:22 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/18/2014
COC Number: 13

			Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	28	180	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mn	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-227-200	12/18/2014	7:59	Water	X															N014193-14	1	
MW-228-200	12/18/2014	15:29	Water	X															-15	1	
MW-229-200	12/18/2014	15:31	Water	X															-16	1	
MW-24B-200	12/18/2014	14:48	Water	X			X		X		X			X			X		-17	4	
MW-68-240-200	12/18/2014	9:38	Water			X	X	X	X		X		X	X	X	X	X		-18	4	
MW-68BR-280-200	12/18/2014	11:42	Water	X			X		X		X			X			X		-19	4	
																		TOTAL NUMBER OF CONTAINERS		72	

	Signatures	Date/Time
Approved by		12-18-14 1617
Sampled by		
Relinquished by		
Received by		12/18/14 @ 1617
Relinquished by		12/18/14 @ 1841
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody
and
Marion

Special Instructions:

Nov 3 to Dec 18, 2014

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/18/2014	Workorder:	N014193
Rep sample Temp (Deg C):	1.9, 3.6, 4.0	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By JPG jpg 12/23/14

Reviewed By: jpg 01/06/15

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler: Barry Collom

05-Jan-15

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N014193-004E / MW-49-275-200	Water	12/17/2014 1:20:00 PM	8OZP	1		
N014193-013D / MW-22-200	Water	12/18/2014 2:48:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14193A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples. **FedEx# 7724 6655 0343**

		Date/Time			Date/Time
Relinquished by:	jpg 01/05/15	15:00	**Received by:**		
Relinquished by:			**Received by:**		

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014193-003 C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(53.8868-53.8186)*1000000}{5\ \cancel{100}}$$

= 13640 mg/L

Reporting result in two significant figures,

TDS = 14000 mg/L

Silia Ramit 12/26/2014

REB 12/29/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/23/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48249	100	55.3697	55.3701	4	1	4		
LCS-48249	100	60.5189	60.6173	984	1	984		
N014176-027C	5	62.4428	62.5092	664	20	13280	21100	0.629
N014180-001A	2	61.3045	61.5078	2033	50	101650	58600	1.735
N014192-001D	100	55.5497	55.6329	832	1	832	1052	0.791
N014192-002D	100	57.0856	57.1734	878	1	878	1265	0.694
N014192-003D	100	54.9553	55.0115	562	1	562	779	0.721
N014192-004D	100	63.9668	64.025	582	1	582	787	0.740
N014193-003C	5	53.8186	53.8868	682	20	13640	21700	0.629
N014193-004D	5	63.9737	64.0544	807	20	16140	26700	0.604
N014193-013C	5	53.9299	54.0281	982	20	19640	26900	0.730
N014193-018C	10	60.6234	60.7298	1064	10	10640	16220	0.656
N014193-018C DUP	10	63.7886	63.8958	1072	10	10720	16220	0.661

Silia Ramit 12/26/2014

REB 12/29/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014193-003A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0694 * 5

= 0.347

limlt

Since results is less than reporting ~~lim,~~it

Cr^{+6}, µg/L = ND

1/6/2015

Sample Calculation

METHOD: EPA 218.6R
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014193-004A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0618 * 5

= 0.309

Since PQL is 1.0 µg/L,

Cr^{+6}, µg/L = ND

1/6/2015

Sample ID: **N014193-003C @ pH 7.65**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.8mL)

= **0.02118644 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (1.85) (0.02118644 N) (1) * 1000

=39.1949 **mg/L**

Reporting results in two significant figures,

39
= ~~39.1949~~ **mg/L** as CaCO3

1/7/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02118644 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (1.85 mL) (0.02118644N) (1) * 1000

= 39.1949 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 39.1949 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 39 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014193-003C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.456 * 100

= 745.6

Reporting result in two significant figures,

Sulfate, mg/L = 750

1/6/2015

SAMPLE CALCULATION

METHOD: 3500CRB
TEST NAME: Hexavalent Chromium
MATRIX: WATER

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Hexavalent Chromium, mg/L = A*DF

Where:
A= mg/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N004193-001A,** concentration in mg/L is calculated as follows:

Hexavalent Chromium, µg/L = 374.197 *5

= 1870.984 µg/L

Reporting result in two significant figures,

Hexavalent Chromium = 1900 µg/L

Nancy 1/7/2015

SAMPLE CALCULATION

METHOD: **SM4500-NO3F**
TEST NAME: Nitrate/Nitrite by Cadmium reduction
MATRIX: WATER: Water

FORMULA:

Calculate the Dissolved Nitrate/Nitrite concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite, mg/L = A*DF

Where:
A= mg/L, UV-VIS Cadmium reduction calculated concentration

DF= dilution factor

For **N014193-003D,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite, mg/L = 0.4803 *1

= 0.4803 mg/L

Reporting result in two significant figures; Since the reporting limit is 0.05 mg/L therefore,

Nitrate/Nitrite concentration = 0.48 mg/L

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014193-003B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 7.4257 * 500 * (25/25) * 1000

= 3712850

Reporting results in two significant figures,

Sodium, ug/L = 3700000

1/6/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014193
Test Method: EPA 6010
Analysis Date: 12/29/14

Matrix: Water
Batch No.: 48253

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for Na.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014193-018B-DT 500X	Sodium	ug/L	2223443	FAIL	3090246	28.05%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014193
Test Method: EPA 6010
Analysis Date: 12/29/14

Matrix: Water
Batch No.: 48253

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed for Ca & Mg. However, PS passed criteria for both analytes.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014192-001B-DT 5x	Boron	ug/L	405.647	NA	273.353	48.40%	10
N014192-001B-DT 5x	Calcium	ug/L	110220.500	FAIL	99746.718	10.50%	10
N014192-001B-DT 5x	Iron	ug/L	0.000	NA	0.000		10
N014192-001B-DT 5x	Magnesium	ug/L	15983.910	FAIL	14298.992	11.78%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *01-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N014193-018B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97340
Client ID:	ZZZZZZ	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3024815.913	50000	20000	3090000	-327	80	120				S

Sample ID	N014192-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97343
Client ID:	ZZZZZZ	Batch ID:	48253	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/29/2014	SeqNo:	1900277

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4557.023	100	5000	273.4	85.7	80	120				
Calcium	111275.632	500	10000	99750	115	80	120				
Iron	60.521	20	100.0	0	60.5	80	120				S
Magnesium	22695.402	100	10000	14300	84.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014193-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 89.3323 * 25 * (25/25)

= 2233.308

Reporting results in two significant figures,

Chromium, ug/L = 2200

1/7/2015

ASSET Laboratories

ICP-MS Metals in Water

Dilution Test Summary

Work Order No.: N014193
Test Method: EPA 6020
Analysis Date: 12/23/2014

Matrix: Water
Batch No.: 48252

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014192-001B DT 5X	Arsenic	µg/L	1.509711842	NA	1.417974801	6.47%	10
N014192-001B DT 125X	Chromium	µg/L	2992.734116	PASS	2854.339493	4.85%	10
N014192-001B DT 5X	Manganese	µg/L	4.347315465	NA	4.247535277	2.35%	10
N014192-001B DT 5X	Molybdenum	µg/L	1.337388565	NA	1.332762301	0.35%	10
N014192-001B DT 5X	Selenium	µg/L	~~0.431022188~~	NA	~~0.503083098~~	~~14.32~~%	10

Note: NA - Not applicable

0.503083 0.431022 16.72

Mary 1/7/2015
for

ASSET Laboratories

Date: *28-Dec-14*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014192-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**97307**
Client ID:	**ZZZZZZ**	Batch ID:	**48252**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/23/2014**			SeqNo:	**1898634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2734.791	25	10.00	2854	-1200	80	120				S

DT @125x is within criteria

1/7/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Date: *07-Jan-15*

CLIENT: CH2M HILL
Work Order: N014193
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014192-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**97307**	
Client ID:	**ZZZZZZ**	Batch ID:	**48252**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/23/2014**		SeqNo:	**1898762**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.750	0.10	10.00	1.418	113	80	120				
Manganese	107.454	0.50	100.0	4.248	103	80	120				
Molybdenum	13.255	0.50	10.00	1.337	119	80	120				
Selenium	11.001	0.50	10.00	0.4310	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

January 09, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014251

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on December 23, 2014 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014251

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6R:

Dilution was necessary for sample N014251-001 due to matrix interference. Sample was analyzed at lower dilution however matrix spike was not recovered indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit.

Analytical Comments for EPA300.0:

Dilution was necessary on samples N014251-001 and N014251-002 due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike Duplicate (MSD) is outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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CASE NARRATIVE

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary for some analytes on samples N014251-001 and N014251-002 due to failed Internal Standard when samples were analyzed at no dilution.

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ASSET Laboratories

Date: *09-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014251
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014251-001A	MW-49-135-200	Water	12/22/2014 12:46:00 PM	12/23/2014	1/9/2015
N014251-001B	MW-49-135-200	Water	12/22/2014 12:46:00 PM	12/23/2014	1/9/2015
N014251-001C	MW-49-135-200	Water	12/22/2014 12:46:00 PM	12/23/2014	1/9/2015
N014251-001D	MW-49-135-200	Water	12/22/2014 12:46:00 PM	12/23/2014	1/9/2015
N014251-001E	MW-49-135-200	Water	12/22/2014 12:46:00 PM	12/23/2014	1/9/2015
N014251-002A	MW-66-230-200	Water	12/22/2014 9:36:00 AM	12/23/2014	1/9/2015
N014251-002B	MW-66-230-200	Water	12/22/2014 9:36:00 AM	12/23/2014	1/9/2015
N014251-002C	MW-66-230-200	Water	12/22/2014 9:36:00 AM	12/23/2014	1/9/2015
N014251-002D	MW-66-230-200	Water	12/22/2014 9:36:00 AM	12/23/2014	1/9/2015
N014251-003A	TW-01-200	Water	12/22/2014 11:26:00 AM	12/23/2014	1/9/2015
N014251-003B	TW-01-200	Water	12/22/2014 11:26:00 AM	12/23/2014	1/9/2015
N014251-003C	TW-01-200	Water	12/22/2014 11:26:00 AM	12/23/2014	1/9/2015
N014251-003D	TW-01-200	Water	12/22/2014 11:26:00 AM	12/23/2014	1/9/2015
N014251-004A	MW-230-200	Water	12/23/2014 6:05:00 AM	12/23/2014	1/9/2015
N014251-005A	PM-03-200	Water	12/23/2014 7:20:00 AM	12/23/2014	1/9/2015
N014251-005B	PM-03-200	Water	12/23/2014 7:20:00 AM	12/23/2014	1/9/2015
N014251-005C	PM-03-200	Water	12/23/2014 7:20:00 AM	12/23/2014	1/9/2015
N014251-006A	PM-04-200	Water	12/23/2014 7:10:00 AM	12/23/2014	1/9/2015
N014251-006B	PM-04-200	Water	12/23/2014 7:10:00 AM	12/23/2014	1/9/2015
N014251-006C	PM-04-200	Water	12/23/2014 7:10:00 AM	12/23/2014	1/9/2015

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ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-135-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 12:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141224D**	QC Batch: **R97327**			PrepDate			Analyst: **RB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/24/2014 03:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141224D**	QC Batch: **R97327**			PrepDate			Analyst: **RB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/24/2014 03:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 11:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141224D** QC Batch: **R97327** PrepDate Analyst: **RB**							
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/24/2014 03:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-200
Lab Order:	N014251	**Collection Date:**	12/23/2014 7:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_141224D**	QC Batch: **R97327**				PrepDate		Analyst: **RB**
Specific Conductance	1500	0.10	0.10		umhos/cm	1	12/24/2014 03:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-200
Lab Order:	N014251	**Collection Date:**	12/23/2014 7:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_141224D**	QC Batch: **R97327**				PrepDate		Analyst: **RB**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/24/2014 03:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *09-Jan-15*

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N014251-001 DDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**97327**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97327**	TestNo:	**EPA 120.1**			Analysis Date:	**12/24/2014**			SeqNo:	**1899587**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13510.000	0.10						13500	0.0740	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-135-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 12:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141229D**	QC Batch: **48293**				PrepDate	**12/29/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	7100	100	100		mg/L	1	12/29/2014 08:45 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_141229D**	QC Batch: **48293**				PrepDate	**12/29/2014**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/29/2014 08:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48293** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/29/2014** RunNo: **97360**
Client ID: **PBW** Batch ID: **48293** TestNo: **SM2540C** Analysis Date: **12/29/2014** SeqNo: **1900704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48293** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/29/2014** RunNo: **97360**
Client ID: **LCSW** Batch ID: **48293** TestNo: **SM2540C** Analysis Date: **12/29/2014** SeqNo: **1900705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	968.000	10	1000	0	96.8	80	120				

Sample ID **N014251-002C-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/29/2014** RunNo: **97360**
Client ID: **ZZZZZZ** Batch ID: **48293** TestNo: **SM2540C** Analysis Date: **12/29/2014** SeqNo: **1900708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12200.000	100						11740	3.84	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-135-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 12:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141229A** QC Batch: **R97366**				PrepDate			Analyst: **RB**
Hexavalent Chromium	2.3	0.080	1.0		µg/L	5	12/29/2014 05:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_141230A** QC Batch: **48302**				PrepDate	**12/30/2014**		Analyst: **CEI**
Chromium	2.0	0.030	1.0		µg/L	1	12/30/2014 03:39 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	5500	14	100		µg/L	10	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48302**			PrepDate	**12/30/2014**		Analyst: **CEI**
Chromium	6400	1.5	50		µg/L	50	12/30/2014 05:18 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 11:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150105C**	QC Batch: **R97411**			PrepDate			Analyst: **PS**
Chromium, Hexavalent	2100	6.9	50		µg/L	5	1/5/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48302**			PrepDate		**12/30/2014**	Analyst: **CEI**
Chromium	2200	0.76	25		µg/L	25	12/30/2014 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-230-200
Lab Order:	N014251	**Collection Date:**	12/23/2014 6:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141229A**	QC Batch: **R97366**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	12/29/2014 03:58 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-200
Lab Order:	N014251	**Collection Date:**	12/23/2014 7:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141229A** QC Batch: **R97366** PrepDate							Analyst: **RB**
Hexavalent Chromium	9.2	0.016	0.20		µg/L	1	12/29/2014 04:08 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48302** PrepDate **12/30/2014**							Analyst: **CEI**
Chromium	8.6	0.030	1.0		µg/L	1	12/30/2014 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-200
Lab Order:	N014251	**Collection Date:**	12/23/2014 7:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_141229A** QC Batch: **R97366** PrepDate							Analyst: **RB**
Hexavalent Chromium	18	0.032	0.40		µg/L	2	12/29/2014 05:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_141230A** QC Batch: **48302** PrepDate **12/30/2014**							Analyst: **CEI**
Chromium	16	0.030	1.0		µg/L	1	12/30/2014 04:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97366** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **PBW** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97366** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **LCSW** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.931	0.20	5.000	0	98.6	90	110				

Sample ID **N014251-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0.08170	101	90	110				

Sample ID **N014251-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.054	0.20	5.000	9.214	96.8	90	110				

Sample ID **N014251-005A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.159	0.20	5.000	9.214	98.9	90	110	14.05	0.749	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014251-005A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.139	0.20						9.214	0.817	20	

Sample ID **N014251-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.101	0.40	10.00	18.45	96.5	90	110				

Sample ID **N014193-017A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.634	1.0	5.000	0.8295	96.1	90	110				

Sample ID **N014193-019A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97366**
Client ID: **ZZZZZZ** Batch ID: **R97366** TestNo: **EPA 218.6** Analysis Date: **12/29/2014** SeqNo: **1901131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.978	1.0	5.000	0.8160	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID	MB-R97366	SampType:	MBLK	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	97366
Client ID:	PBW	Batch ID:	R97366	TestNo:	EPA 218.6			Analysis Date:	12/29/2014	SeqNo:	1901139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R97366	SampType:	LCS	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	97366
Client ID:	LCSW	Batch ID:	R97366	TestNo:	EPA 218.6			Analysis Date:	12/29/2014	SeqNo:	1901141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.931	0.20	5.000	0	98.6	90	110				

Sample ID	N014251-005A-MS	SampType:	MS	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	97366
Client ID:	ZZZZZZ	Batch ID:	R97366	TestNo:	EPA 218.6			Analysis Date:	12/29/2014	SeqNo:	1901145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.054	0.20	5.000	9.214	96.8	90	110				

Sample ID	N014251-005A-MSD	SampType:	MSD	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	97366
Client ID:	ZZZZZZ	Batch ID:	R97366	TestNo:	EPA 218.6			Analysis Date:	12/29/2014	SeqNo:	1901146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.159	0.20	5.000	9.214	98.9	90	110	14.05	0.749	20	

Sample ID	N014251-005A-DUP	SampType:	DUP	TestCode:	218.6R_WPG	Units:	µg/L	Prep Date:		RunNo:	97366
Client ID:	ZZZZZZ	Batch ID:	R97366	TestNo:	EPA 218.6			Analysis Date:	12/29/2014	SeqNo:	1901149

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.139	0.20						9.214	0.817	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID	**N014251-001A-MS**	SampType:	**MS**	TestCode:	**218.6R_WPG**	Units:	**µg/L**	Prep Date:			RunNo:	**97366**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97366**	TestNo:	**EPA 218.6**			Analysis Date:	**12/29/2014**		SeqNo:	**1901151**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.728	1.0	25.00	2.276	97.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97411** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **LCSW** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	246.521	10	250.0	0	98.6	85	115				

Sample ID **MB-R97411** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **PBW** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014176-001A-DUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2257.230	100						2320	2.76	20	

Sample ID **N014176-001A-MS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4772.150	100	2500	2320	98.1	85	115				

Sample ID **N014176-001A-MSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97411**
Client ID: **ZZZZZZ** Batch ID: **R97411** TestNo: **SM 3500-Cr B** Analysis Date: **1/5/2015** SeqNo: **1902401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4733.790	100	2500	2320	96.5	85	115	4772	0.807	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	N014176-006A-DUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	97411
Client ID:	ZZZZZZ	Batch ID:	R97411	TestNo:	SM 3500-Cr B			Analysis Date:	1/5/2015	SeqNo:	1902405

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2012.570	100						2025	0.611	20	

Sample ID	N014176-006A-MS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	97411
Client ID:	ZZZZZZ	Batch ID:	R97411	TestNo:	SM 3500-Cr B			Analysis Date:	1/5/2015	SeqNo:	1902406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4527.940	100	2500	2025	100	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48302	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2014	RunNo:	97362
Client ID:	PBW	Batch ID:	48302	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48302	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2014	RunNo:	97362
Client ID:	LCSW	Batch ID:	48302	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900730

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.139	1.0	10.00	0	101	85	115				

Sample ID	N014270-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48302	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900735

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.100	1.0	10.00	1.547	106	75	125				

Sample ID	N014270-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2014	RunNo:	97362
Client ID:	ZZZZZZ	Batch ID:	48302	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2014	SeqNo:	1900736

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.084	1.0	10.00	1.547	105	75	125	12.10	0.136	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-135-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 12:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141224H**	QC Batch: **R97417**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	59	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Total (As CaCO3)	59	1.2	5.0		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_141224H**	QC Batch: **R97417**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	32	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	12/24/2014
Alkalinity, Total (As CaCO3)	32	1.2	5.0		mg/L	1	12/24/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97417** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **LCSW** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	96.398	5.0	100.0	0	96.4	85	115				
Alkalinity, Total (As CaCO3)	100.636	5.0	100.0	0	101	85	115				

Sample ID **MB-R97417** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **PBW** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014251-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **ZZZZZZ** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	59.322	5.0						59.32	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	59.322	5.0						59.32	0	30	

Sample ID **N014251-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **ZZZZZZ** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	130.297	5.0	100.0	31.78	98.5	75	125				
Alkalinity, Total (As CaCO3)	130.297	5.0	100.0	31.78	98.5	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014251-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97417**
Client ID: **ZZZZZZ** Batch ID: **R97417** TestNo: **SM 2320 B** Analysis Date: **12/24/2014** SeqNo: **1902510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	129.237	5.0	100.0	31.78	97.5	75	125	130.3	0.816	20	
Alkalinity, Total (As CaCO3)	129.237	5.0	100.0	31.78	97.5	75	125	130.3	0.816	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014251
Project: PG&E Topock
Lab ID: N014251-001

Client Sample ID: MW-49-135-200
Collection Date: 12/22/2014 12:46:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150108B** QC Batch: **R97473**				PrepDate			Analyst: **QBM**
Bromide	ND	0.14	2.5		mg/L	5	1/8/2015 09:58 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150108B** QC Batch: **R97473**				PrepDate			Analyst: **QBM**
Chloride	4200	25	500		mg/L	1000	1/8/2015 07:02 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150108B** QC Batch: **R97473**				PrepDate			Analyst: **QBM**
Sulfate	700	3.3	50		mg/L	100	1/8/2015 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014251
Project: PG&E Topock
Lab ID: N014251-002

Client Sample ID: MW-66-230-200
Collection Date: 12/22/2014 9:36:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150108B** QC Batch: **R97473**				PrepDate			Analyst: **QBM**
Bromide	ND	0.14	2.5		mg/L	5	1/8/2015 10:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150108B** QC Batch: **R97473**				PrepDate			Analyst: **QBM**
Chloride	6200	25	500		mg/L	1000	1/8/2015 07:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150108B** QC Batch: **R97473**				PrepDate			Analyst: **QBM**
Sulfate	1100	3.3	50		mg/L	100	1/8/2015 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **LCS-R97473_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **LCSW** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.359	0.50	2.500	0	94.4	90	110				

Sample ID **MB-R97473_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **PBW** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **N014251-001DDUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	2.5						0	0	20	

Sample ID **N014251-001DMS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	10.650	2.5	12.50	0	85.2	80	120				

Sample ID **N014251-001DMSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	10.640	2.5	12.50	0	85.1	80	120	10.65	0.0939	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **LCS-R97473_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **LCSW** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.354	0.50	2.500	0	94.2	90	110				

Sample ID **MB-R97473_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **PBW** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **N014251-001DDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4201.000	500						4164	0.885	20	

Sample ID **N014251-001DMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6796.000	500	2500	4164	105	80	120				

Sample ID **N014251-001DMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6843.000	500	2500	4164	107	80	120	6796	0.689	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R97473_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **LCSW** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.634	0.50	5.000	0	92.7	90	110				

Sample ID **MB-R97473_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **PBW** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N014251-001DDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	701.800	50						703.5	0.242	20	

Sample ID **N014251-001DMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1225.500	50	500.0	703.5	104	80	120				

Sample ID **N014251-001DMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97473**
Client ID: **ZZZZZZ** Batch ID: **R97473** TestNo: **EPA 300.0** Analysis Date: **1/8/2015** SeqNo: **1904538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1220.800	50	500.0	703.5	103	80	120	1226	0.384	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150106A** QC Batch: **R97439** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	14	0.22	0.50		mg/L	10	1/6/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 11:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150106A** QC Batch: **R97439** PrepDate Analyst: **PS**							
Nitrate/Nitrite as N	21	0.44	1.0		mg/L	20	1/6/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97439** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **PBW** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97439** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **LCSW** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.925	0.050	1.000	0	92.5	85	115				

Sample ID **N014193-003DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **ZZZZZZ** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.472	0.050						0.4803	1.85	20	

Sample ID **N014193-003DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **ZZZZZZ** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.267	0.050	1.000	0.4803	78.7	75	125				

Sample ID **N014193-003DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97439**
Client ID: **ZZZZZZ** Batch ID: **R97439** TestNo: **SM4500-NO3** Analysis Date: **1/6/2015** SeqNo: **1903389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.296	0.050	1.000	0.4803	81.6	75	125	1.267	2.22	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-135-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 12:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150106B**	QC Batch: **48316**				PrepDate	**1/5/2015**	Analyst: **CEI**
Boron	660	19	100		ug/L	1	1/6/2015 01:41 PM
Calcium	310000	58	500		ug/L	1	1/6/2015 01:41 PM
Iron	ND	1.3	20		ug/L	1	1/6/2015 01:41 PM
Magnesium	25000	11	100		ug/L	1	1/6/2015 01:41 PM
Sodium	2500000	3800	50000		ug/L	100	1/6/2015 09:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150106B**	QC Batch: **48316**				PrepDate	**1/5/2015**	Analyst: **CEI**
Boron	1700	19	100		ug/L	1	1/6/2015 01:46 PM
Calcium	430000	58	500		ug/L	1	1/6/2015 01:46 PM
Iron	ND	1.3	20		ug/L	1	1/6/2015 01:46 PM
Magnesium	4600	11	100		ug/L	1	1/6/2015 01:46 PM
Sodium	3900000	7500	100000		ug/L	200	1/6/2015 09:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-48316	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/5/2015	RunNo:	97425
Client ID:	PBW	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-48316	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/5/2015	RunNo:	97425
Client ID:	LCSW	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902888

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20005.028	500	20000	0	100	85	115				

Sample ID	N014251-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/5/2015	RunNo:	97425
Client ID:	ZZZZZZ	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3893868.408	100000	20000	3877000	85.8	75	125				

Sample ID	N014251-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/5/2015	RunNo:	97425
Client ID:	ZZZZZZ	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3800416.746	100000	20000	3877000	-381	75	125	3894000	2.43	20	S

Sample ID	MB-48316	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/5/2015	RunNo:	97427
Client ID:	PBW	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LCS1-48316** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/5/2015** RunNo: **97427**
Client ID: **LCSW** Batch ID: **48316** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2015** SeqNo: **1902939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4605.381	100	5000	0	92.1	85	115				
Calcium	9231.914	500	10000	0	92.3	85	115				
Iron	91.607	20	100.0	0	91.6	85	115				
Magnesium	9565.127	100	10000	0	95.7	85	115				

Sample ID **N014251-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/5/2015** RunNo: **97427**
Client ID: **ZZZZZZ** Batch ID: **48316** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2015** SeqNo: **1902944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5054.194	100	5000	663.2	87.8	75	125				
Calcium	336598.896	500	10000	314200	224	75	125				S
Iron	86.940	20	100.0	0	86.9	75	125				
Magnesium	33413.882	100	10000	24780	86.3	75	125				

Sample ID **N014251-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/5/2015** RunNo: **97427**
Client ID: **ZZZZZZ** Batch ID: **48316** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2015** SeqNo: **1902945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4995.692	100	5000	663.2	86.6	75	125	5054	1.16	20	
Calcium	327987.682	500	10000	314200	138	75	125	336600	2.59	20	S
Iron	87.534	20	100.0	0	87.5	75	125	86.94	0.681	20	
Magnesium	33769.515	100	10000	24780	89.9	75	125	33410	1.06	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-49-135-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 12:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48302**			PrepDate	**12/30/2014**		Analyst: **CEI**
Arsenic	1.6	0.027	0.10		µg/L	1	12/30/2014 03:39 PM
Manganese	220	0.13	2.5		µg/L	5	12/30/2014 03:44 PM
Molybdenum	40	0.76	2.5		µg/L	5	12/30/2014 03:44 PM
Selenium	0.97	0.069	0.50		µg/L	1	12/30/2014 03:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 9:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48302**			PrepDate	**12/30/2014**		Analyst: **CEI**
Arsenic	6.6	0.027	0.10		µg/L	1	12/30/2014 04:01 PM
Manganese	35	0.026	0.50		µg/L	1	12/30/2014 04:01 PM
Molybdenum	82	0.76	2.5		µg/L	5	12/30/2014 04:06 PM
Selenium	11	0.34	2.5		µg/L	5	12/30/2014 04:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-200
Lab Order:	N014251	**Collection Date:**	12/22/2014 11:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014251-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_141230A**	QC Batch: **48302**				PrepDate	**12/30/2014**	Analyst: **CEI**
Molybdenum	13	0.15	0.50		µg/L	1	12/30/2014 04:12 PM
Selenium	15	0.069	0.50		µg/L	1	12/30/2014 04:12 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48302** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/30/2014** RunNo: **97362**
Client ID: **PBW** Batch ID: **48302** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48302** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/30/2014** RunNo: **97362**
Client ID: **LCSW** Batch ID: **48302** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.750	0.10	10.00	0	97.5	85	115				
Manganese	95.216	0.50	100.0	0	95.2	85	115				
Molybdenum	9.871	0.50	10.00	0	98.7	85	115				
Selenium	10.206	0.50	10.00	0	102	85	115				

Sample ID **N014270-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/30/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48302** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.156	0.10	10.00	0.9838	112	75	125				
Manganese	100.334	0.50	100.0	0	100	75	125				
Molybdenum	14.775	0.50	10.00	2.613	122	75	125				
Selenium	10.860	0.50	10.00	0.4048	105	75	125				

Sample ID **N014270-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/30/2014** RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48302** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.014	0.10	10.00	0.9838	110	75	125	12.16	1.18	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014270-001B-MSD**	SampType:	**MSD**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**12/30/2014**	RunNo:	**97362**	
Client ID:	**ZZZZZZ**	Batch ID:	**48302**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/30/2014**	SeqNo:	**1900913**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	100.418	0.50	100.0	0	100	75	125	100.3	0.0831	20	
Molybdenum	14.662	0.50	10.00	2.613	120	75	125	14.78	0.769	20	
Selenium	11.237	0.50	10.00	0.4048	108	75	125	10.86	3.41	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

12/23/2014 4:00:50 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 12/23/2014
COC Number: 15

			Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly	250 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	28	28	28	180	180	180	180	180	180	7	7	7	7	28	NA			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6010BFF) Field Filtered Ca,Mg,Na,Fe,B	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A) Field Filtered Mo,Se,Mn	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Bromide,Chloride,Sulfate	Specific Conductance (E120.1)	TDS (SM2540C)	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
MW-49-135-200	12/22/2014	12:46	Water		X		X	X	X		X	X	X	X	X	X		X	N014251 -01	6	
MW-66-230-200	12/22/2014	9:36	Water			X	X	X	X		X		X	X	X	X	X		-02	4	
TW-01-200	12/22/2014	11:26	Water			X				X				X			X		-03	4	
MW-230-200	12/23/2014	6:05	Water	X															-04	1	
PM-03-200	12/23/2014	7:20	Water	X					X					X					-05	3	
PM-04-200	12/23/2014	7:10	Water	X					X					X					-06	3	
																		TOTAL NUMBER OF CONTAINERS		21	

	Signatures	Date/Time
Approved by		12-23-14
Sampled by		1720
Relinquished by		
Received by		12/23/14 1728
Relinquished by		
Received by		12/23/14 1810

Shipping Details

Method of Shipment: courier
On Ice: yes / no 3.4°C
Airbill No: IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.
Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/23/2014	Workorder:	N014251
Rep sample Temp (Deg C):	3.4	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 12/29/14

Reviewed By: jpg 01/06/15

ASSET Laboratories

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (562) 989-4045.

Change Order Checklist

Client Name: ***CH2HI01***

Date / Time Created: ***12/30/2014 2:40:00 PM***

Work Order Number: ***N014251***

Created by: **JPG**

Checklist completed by: jpg 01/05/15
Signature | Date

Reviewed by: jpg 01/06/15
Initials | Date

1. All samples within holding time? Yes ☑ No ☐

2. Refrigerator temperature in compliance? Yes ☑ No ☐

3. Change Order documents present? Yes ☑ No ☐

Comments: Additional Dissolved Chromium on sample TW-01-200

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (609) 721-2843
FAX: (805) 544-8226
Acct #:

Field Sampler:

29-Dec-14

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N014251-001E / MW-49-135-200	Water	12/22/2014 12:46:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N14251A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Oxygen/Deuterium. CH2MHill Samples.

FedEx# 7724 1056 3075

	Date/Time		Date/Time
Relinquished by: jpg 12/29/14		**Received by:**	
Relinquished by:		**Received by:**	

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014251-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(63.5723-63.5012)*1000000}{100}$$

= 7110 mg/L

Reporting result in two significant figures,

TDS = 7100 mg/L

Julia Ramit 12/30/2014

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 12/30/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48293	100	75.7448	75.7455	7	1	7		
LCS-48293	100	59.8962	59.993	968	1	968		
N014251-001D	10	63.5012	63.5723	711	10	7110	13500	0.527
N014251-002C	10	59.9014	60.0188	1174	10	11740	19100	0.615
N014251-002C DUP	10	53.923	54.045	1220	10	12200	19100	0.639
N014267-001A	200	61.2147	61.2196	49	0.5	24.5	13.83	1.772

Lilia Ramit 12/30/2014

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014251-005A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 9.2143 * 1

= 9.2143

Reporting result in two significant figures,

Cr^{+6}, µg/L = 9.2

1/8/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014251-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.4552 * 5

= 2.276

Reporting result in two significant figures,

Cr^{+6}, µg/L = 2.3

1/8/2015

Sample ID: **N014251-001D @ pH 7.77**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.8mL)

= **0.02118644 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (2.80) (0.02118644 N) (1) * 1000

=59.3220 **mg/L**

Reporting results in two significant figures,

= 59 **mg/L** as CaCO3

1/7/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02118644 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (2.80 mL) (0.02118644N) (1) * 1000

= 59.3220 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 59.3220 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 59 **mg/L**

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014251-001D** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.035 * 100

= 703.5

Reporting result in two significant figures,

Sulfate, mg/L = 700

1/9/2015

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L ~~mg/L~~, in the original sample as follows:

Hexavalent Chromium, ug/L ~~mg~~/L = A*DF

Where:

A= ug/L ~~mg~~/L, UV-VIS Hexavalent Chromium calculated concentration
DF= dilution factor

For **N014251-002A,** concentration in ug/L ~~mg/L~~ is calculated as follows:

Hexavalent Chromium, ug/L ~~mg/L~~ = 553.607 *10
= 5536.07 ug/L ~~mg/L~~

Reporting result in two significant figures,

Hexavalent Chromium = 5500 ug/L ~~mg/L~~

Nancy 1/9/2015

SAMPLE CALCULATION

METHOD: SM4500-NO3F
TEST NAME: Nitrate/Nitrite by Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Dissolved Nitrate/Nitrite concentration , in mg/L , in the original sample as follows:

Nitrate/Nitrite, mg/L = A*DF

Where:

A= mg/L, UV-VIS Cadmium Reduction calculated concentration
DF= dilution factor

For **N014251-002D,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite, mg/L = 1.427 *10
= 14.27 mg/L

Reporting result in two significant figures,

Nitrate/Nitrite = 14 mg/L

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014251-001B**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 24.8071 * 100 * (25/25) * 1000

= 2480709

Reporting results in two significant figures,

Sodium, ug/L = 2500000

1/7/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014251
Test Method: EPA 6010
Analysis Date: 01/06/14

Matrix: Water
Batch No.: 48316

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014251-002B DT 1000X	Sodium	ug/L	3950842	PASS	3876708	1.91%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014251
Test Method: EPA 6010
Analysis Date: 01/06/14

Matrix: Water
Batch No.: 48316

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014251-001B DT 5X	Boron	ug/L	892.47	NA	663.21	34.57%	10
N014251-001B DT 5X	Calcium	ug/L	308416.96	PASS	314228.91	1.85%	10
N014251-001B DT 5X	Iron	ug/L	0.00	NA	0.00		10
N014251-001B DT 5X	Magnesiun	ug/L	30078.58	FAIL	24780.00	21.38%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *06-Jan-15*

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N014251-002B	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97425
Client ID:	ZZZZZZ	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902893

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3785208.604	100000	20000	3877000	-457	80	120				S

Sample ID	N014251-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	97427
Client ID:	ZZZZZZ	Batch ID:	48316	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/6/2015	SeqNo:	1902943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4861.406	100	5000	663.2	84.0	80	120				
Calcium	327984.023	500	10000	314200	138	80	120				S
Iron	85.069	20	100.0	0	85.1	80	120				
Magnesium	32612.374	100	10000	24780	78.3	80	120				S

DT of Na @1000x, Ca@5x and MS/MSD of Mg are within criteria

1/7/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014251-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 1.98725411026712 * 1 * (25/25)

= 1.98725411026712

Reporting results in two significant figures,

Chromium, ug/L = 2.0

1/7/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014251
Test Method: EPA 6020
Analysis Date: 12/30/2014

Matrix: Water
Batch No.: 48302

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, As, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014270-001B-DT 5X	Chromium	µg/L	1.51186642	NA	1.54659235	2.25%	10
N014270-001B-DT 5X	Arsenic	µg/L	0.885926792	NA	0.983785449	9.95%	10
N014270-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N014270-001B-DT 5X	Molybdenum	µg/L	2.588220811	NA	2.613274815	0.96%	10
N014270-001B-DT 5X	Selenium	µg/L	0.495191893	NA	0.404791031	22.33%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *02-Jan-15*

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N014270-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97362**
Client ID: **ZZZZZZ** Batch ID: **48302** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2014** SeqNo: **1900911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.089	0.10	10.00	0.9838	111	80	120				
Manganese	101.002	0.50	100.0	0	101	80	120				
Molybdenum	14.537	0.50	10.00	2.613	119	80	120				
Selenium	11.026	0.50	10.00	0.4048	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014251
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N014270-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**97362**
Client ID:	**ZZZZZZ**	Batch ID:	**48302**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**12/30/2014**			SeqNo:	**1900734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.298	1.0	10.00	1.547	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

January 22, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014325

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 08, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014325

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N014325-001 due to matrix interference. Sample was analyzed at lower dilution however matrix spike was not recovered indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for sample N014325-001 due to associated internal standard not meeting method criteria possibly due to matrix interference.Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at a dilution that meet internal standard recovery limit.

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ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014325
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014325-001A	PGE-08-200	Water	1/7/2015 4:07:00 PM	1/8/2015	1/22/2015
N014325-001B	PGE-08-200	Water	1/7/2015 4:07:00 PM	1/8/2015	1/22/2015
N014325-001C	PGE-08-200	Water	1/7/2015 4:07:00 PM	1/8/2015	1/22/2015
N014325-001D	PGE-08-200	Water	1/7/2015 4:07:00 PM	1/8/2015	1/22/2015

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ANALYTICAL RESULTS

Print Date: *22-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PGE-08-200
Lab Order:	N014325	**Collection Date:**	1/7/2015 4:07:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014325-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150114B**	QC Batch: **R97464**			PrepDate			Analyst: **admin**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	1/14/2015 02:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N014325-001CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**97464**
Client ID:	**ZZZZZZ**	Batch ID:	**R97464**	TestNo:	**EPA 120.1**			Analysis Date:	**1/14/2015**			SeqNo:	**1909021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17370.000	0.10						17360	0.0576	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *22-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PGE-08-200
Lab Order:	N014325	**Collection Date:**	1/7/2015 4:07:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014325-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150115A**	QC Batch: **R97574**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	1/15/2015 03:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150113A**	QC Batch: **48391**			PrepDate		**1/10/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/13/2015 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97574** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **PBW** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97574** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **LCSW** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.031	0.20	5.000	0	101	90	110				

Sample ID **N014366-006A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **ZZZZZZ** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.161	0.20						1.168	0.661	20	

Sample ID **N014366-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **ZZZZZZ** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.132	0.20	1.000	1.168	96.3	90	110				

Sample ID **N014366-006A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **ZZZZZZ** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.251	0.20	1.000	1.168	108	90	110	2.132	5.44	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014366-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **ZZZZZZ** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.591	0.20	1.000	0.5986	99.2	90	110				

Sample ID **N014366-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **ZZZZZZ** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.003	0.20	1.000	1.956	105	90	110				

Sample ID **N014325-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97574**
Client ID: **ZZZZZZ** Batch ID: **R97574** TestNo: **EPA 218.6** Analysis Date: **1/15/2015** SeqNo: **1910349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.111	1.0	5.000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48391	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/10/2015	RunNo:	97542
Client ID:	PBW	Batch ID:	48391	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/13/2015	SeqNo:	1908542

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48391	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/10/2015	RunNo:	97542
Client ID:	LCSW	Batch ID:	48391	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/13/2015	SeqNo:	1908545

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.000	1.0	10.00	0	100	85	115				

Sample ID	N014326-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/10/2015	RunNo:	97542
Client ID:	ZZZZZZ	Batch ID:	48391	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/13/2015	SeqNo:	1908572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.338	1.0	10.00	8.110	92.3	75	125				

Sample ID	N014326-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/10/2015	RunNo:	97542
Client ID:	ZZZZZZ	Batch ID:	48391	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/13/2015	SeqNo:	1908573

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.385	1.0	10.00	8.110	92.7	75	125	17.34	0.270	20	

Sample ID	N014326-019B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/10/2015	RunNo:	97542
Client ID:	ZZZZZZ	Batch ID:	48391	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/13/2015	SeqNo:	1908574

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.747	1.0	10.00	7.574	91.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PGE-08-200
Lab Order:	N014325	**Collection Date:**	1/7/2015 4:07:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014325-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150116A** QC Batch: **R97598** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	1/16/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N014305-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **ZZZZZZ** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.432	0.25						2.639	8.15	20	

Sample ID **N014305-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **ZZZZZZ** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.142	0.25	5.000	2.639	90.1	75	125				

Sample ID **N014305-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **ZZZZZZ** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.420	0.25	5.000	2.639	95.6	75	125	7.142	3.82	20	

Sample ID **MB-R97598** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **PBW** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97598** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **LCSW** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.962	0.050	1.000	0	96.2	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PGE-08-200
Lab Order:	N014325	**Collection Date:**	1/7/2015 4:07:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014325-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150114A**	QC Batch: **48391**				PrepDate	**1/10/2015**	Analyst: **CEI**
Molybdenum	100	3.8	12		µg/L	25	1/14/2015 02:52 PM
Selenium	ND	1.7	12		µg/L	25	1/16/2015 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48391** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/10/2015** RunNo: **97544**
Client ID: **PBW** Batch ID: **48391** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/13/2015** SeqNo: **1908842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.278	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48391** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/10/2015** RunNo: **97544**
Client ID: **LCSW** Batch ID: **48391** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/13/2015** SeqNo: **1908845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	10.104	0.50	10.00	0	101	85	115				
Selenium	10.037	0.50	10.00	0	100	85	115				

Sample ID **N014326-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/10/2015** RunNo: **97544**
Client ID: **ZZZZZZ** Batch ID: **48391** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/13/2015** SeqNo: **1908872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	11.944	0.50	10.00	0.7138	112	75	125				
Selenium	10.143	0.50	10.00	0.6831	94.6	75	125				

Sample ID **N014326-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/10/2015** RunNo: **97544**
Client ID: **ZZZZZZ** Batch ID: **48391** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/13/2015** SeqNo: **1908873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	11.987	0.50	10.00	0.7138	113	75	125	11.94	0.351	20	
Selenium	10.189	0.50	10.00	0.6831	95.1	75	125	10.14	0.456	20	

Sample ID **N014326-019B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/10/2015** RunNo: **97544**
Client ID: **ZZZZZZ** Batch ID: **48391** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/13/2015** SeqNo: **1908874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014326-019B-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**1/10/2015**	RunNo:	**97544**		
Client ID:	**ZZZZZZ**	Batch ID:	**48391**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/13/2015**	SeqNo:	**1908874**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	11.927	0.50	10.00	0.3682	116	75	125				
Selenium	10.690	0.50	10.00	0.7859	99.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL **CHAIN OF CUSTODY RECORD** *1/8/2015 7:58:35 AM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 1/8/2015
COC Number: 22

			Container:	250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	125 ml Poly			Number of Containers	COMMENTS
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	H2SO4, pH<2, 4°C				
			Filtered:	Field	Field	Field	NA	NA				
			Holding Time:	28	180	180	7	28				
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Specific Conductance (E120.1)	Nitrate/Nitrite (SM4500NO3)				
PGE-08-200	1/7/2015	16:07	Water	X	X	X	X	X	N014325-01		4	
										TOTAL NUMBER OF CONTAINERS	4	

	Signatures	Date/Time
Approved by		1-8-15
Sampled by		1314
Relinquished by		
Received by		1/8/15 1314
Relinquished by		1/8/15
Received by		1/8/15 1948

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1-8-15
Airbill No: 1KH2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.
Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/8/2015	Workorder:	N014325
Rep sample Temp (Deg C):	1.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments

Checklist Completed B JPG jpg 01/12/15

Reviewed By: jpg 01/13/15

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014325-001A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0 * 5

= 0

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014325-001D,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.0400 * 1

= 0.04 ug/L

Since results is less than reporting limit,
,

Nitrate/Nitrite-N, mg/L = ND

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014325-001B,** the concentration in ug/L is calculated as follows:

Molybdenum , ug/L = 4.17259 * 25 * (25/25)

= 104.3147

Reporting results in two significant figures,

Molybdenum , ug/L = 100

1/22/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014325
Test Method: EPA 6020
Analysis Date: 1/13/2015

Matrix: Water
Batch No.: 48391

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mo & Se. The calculated values are <25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014326-001B DT 5X	Chromium	µg/L	8.528092118	NA	8.110396222	5.15%	10
N014326-001B DT 5X	Molybdenum	µg/L	0.693211889	NA	0.713803581	2.88%	10
N014326-001B DT 5X	Selenium	µg/L	0.772041462	NA	0.683056391	13.03%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *20-Jan-15*

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014326-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**97544**
Client ID:	**ZZZZZZ**	Batch ID:	**48391**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**1/13/2015**	SeqNo:	**1908871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	11.917	0.50	10.00	0.7138	112	80	120				
Selenium	10.252	0.50	10.00	0.6831	95.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Date: *20-Jan-15*

CLIENT: CH2M HILL
Work Order: N014325
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014326-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**97542**
Client ID:	**ZZZZZZ**	Batch ID:	**48391**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/13/2015**			SeqNo:	**1908571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.319	1.0	10.00	8.110	92.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

January 23, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014381

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 14, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014381

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

Date: *23-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014381
Contract No: 2014-GMP-200-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014381-001A	TW-02S-200	Water	1/13/2015 12:52:00 PM	1/14/2015	1/23/2015
N014381-001B	TW-02S-200	Water	1/13/2015 12:52:00 PM	1/14/2015	1/23/2015
N014381-001C	TW-02S-200	Water	1/13/2015 12:52:00 PM	1/14/2015	1/23/2015
N014381-001D	TW-02S-200	Water	1/13/2015 12:52:00 PM	1/14/2015	1/23/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-02S-200
Lab Order:	N014381	**Collection Date:**	1/13/2015 12:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014381-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014381-001C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97562**
Client ID: **ZZZZZZ** Batch ID: **R97562** TestNo: **EPA 120.1** Analysis Date: **1/15/2015** SeqNo: **1909918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2070.000	0.10						2070	0	10	

Sample ID **N014382-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97562**
Client ID: **ZZZZZZ** Batch ID: **R97562** TestNo: **EPA 120.1** Analysis Date: **1/15/2015** SeqNo: **1909920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	933.000	0.10						936.0	0.321	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-02S-200
Lab Order:	N014381	**Collection Date:**	1/13/2015 12:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014381-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150119B** QC Batch: **R97596**				PrepDate			Analyst: **QBM**
Chromium, Hexavalent	590	1.4	10		µg/L	1	1/19/2015
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_150119B** QC Batch: **48462**				PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	570	0.15	5.0		µg/L	5	1/19/2015 11:54 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *23-Jan-15*

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97596** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **LCSW** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	251.902	10	250.0	0	101	85	115				

Sample ID **MB-R97596** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **PBW** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014381-001ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **ZZZZZZ** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	589.251	10						585.5	0.633	20	

Sample ID **N014306-002BMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **ZZZZZZ** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1294.554	20	500.0	795.0	99.9	85	115				

Sample ID **N014306-002BMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **ZZZZZZ** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1294.660	20	500.0	795.0	99.9	85	115	1295	0.00819	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48462	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	PBW	Batch ID:	48462	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/19/2015	SeqNo:	1913400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48462	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	LCSW	Batch ID:	48462	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/19/2015	SeqNo:	1913401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.255	1.0	10.00	0	103	85	115				

Sample ID	N014382-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	ZZZZZZ	Batch ID:	48462	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/20/2015	SeqNo:	1913439

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.657	1.0	10.00	0.04990	96.1	75	125				

Sample ID	N014382-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	ZZZZZZ	Batch ID:	48462	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/20/2015	SeqNo:	1913441

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.674	1.0	10.00	0.04990	96.2	75	125	9.657	0.176	20	

Sample ID	N014382-013C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	ZZZZZZ	Batch ID:	48462	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/20/2015	SeqNo:	1913443

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.744	1.0	10.00	0.05641	96.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-02S-200
Lab Order:	N014381	**Collection Date:**	1/13/2015 12:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014381-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150116A** QC Batch: **R97598** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.3	0.11	0.25		mg/L	5	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N014305-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **ZZZZZZ** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.432	0.25						2.639	8.15	20	

Sample ID **N014305-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **ZZZZZZ** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.142	0.25	5.000	2.639	90.1	75	125				

Sample ID **N014305-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **ZZZZZZ** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.420	0.25	5.000	2.639	95.6	75	125	7.142	3.82	20	

Sample ID **MB-R97598** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **PBW** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97598** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97598**
Client ID: **LCSW** Batch ID: **R97598** TestNo: **SM4500-NO3** Analysis Date: **1/16/2015** SeqNo: **1911408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.962	0.050	1.000	0	96.2	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-02S-200
Lab Order:	N014381	**Collection Date:**	1/13/2015 12:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014381-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Molybdenum	15	0.15	0.50		µg/L	1	1/19/2015 11:49 PM
Selenium	2.8	0.069	0.50		µg/L	1	1/19/2015 11:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *23-Jan-15*

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48462** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **PBW** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/19/2015** SeqNo: **1914739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48462** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **LCSW** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/19/2015** SeqNo: **1914740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	10.445	0.50	10.00	0	104	85	115				
Selenium	9.165	0.50	10.00	0	91.6	85	115				

Sample ID **N014382-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	16.141	0.50	10.00	4.700	114	75	125				
Selenium	9.955	0.50	10.00	1.428	85.3	75	125				

Sample ID **N014382-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	16.000	0.50	10.00	4.700	113	75	125	16.14	0.874	20	
Selenium	9.698	0.50	10.00	1.428	82.7	75	125	9.955	2.61	20	

Sample ID **N014382-013C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014382-013C-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**1/19/2015**	RunNo:	**97625**		
Client ID:	**ZZZZZZ**	Batch ID:	**48462**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/20/2015**	SeqNo:	**1914782**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	15.833	0.50	10.00	4.503	113	75	125				
Selenium	10.612	0.50	10.00	1.289	93.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

1/13/2015 1:28:54 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2014-GMP-200-Q4
Turnaround Time 10 Days
Shipping Date: 10/31/2014
COC Number: GMP-200-Q4

			Container:	250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	NA	NA			
			Holding Time:	28	180	180	7	28			
	DATE	TIME	Matrix	Cr6 (SM3500B) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Specific Conductance (E120.1)	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
TW-02S-200	1/13/2015	12:52	Water	X	X	X	X	X	N014381-01	4	
									TOTAL NUMBER OF CONTAINERS	4	

	Signatures	Date/Time
Approved by		1-14-15
Sampled by		1535
Relinquished by		
Received by		1550 1/14/15
Relinquished by		01/14/15
Received by		18:11

Shipping Details

Method of Shipment: FedEx
On Ice: yes / no 4.9°C IR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Nov 3 to Dec 18, 2014
Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.
Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/14/2015	Workorder:	N014381
Rep sample Temp (Deg C):	4.9	IR Gun ID:	
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B JPG jpg 01/16/15

Reviewed By: Nancy 1/23/2015

Sample Calculation

METHOD: EPA 3500_Cr
TEST NAME: HEXAVALENT CHROMIUM
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = ug/L, UV-VIS Cr^{+6} calculated concentration
DF = dilution factor

For **N014381-001A**, concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 585.534 * 1

= 585.534 µg/L

Reporting results in two significant figures:

Cr^{+6}, µg/L = 590 µg/L

1/23/2015

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014381-001D,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.8658 * 5

= 4.329 ug/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 4.3

1/23/2015

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014381-001B,** the concentration in ug/L is calculated as follows:

Molybdenum, ug/L = 14.7060572756924 * 1 * (25/25)

= 14.7060572756924

Reporting results in two significant figures,

Molybdenum, ug/L = 15

1/23/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014381
Test Method: EPA 6020
Analysis Date: 1/19/2015

Matrix: Water
Batch No.: 48462

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mo & Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014382-001C DT 5X	Chromium	ug/L	0	NA	0.049895367	100.00%	10
N014382-001C DT 5X	Molybdenum	ug/L	4.724644141	NA	4.700135033	0.52%	10
N014382-001C DT 5X	Selenium	ug/L	1.380241	NA	1.427509256	3.31%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *21-Jan-15*

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014382-001C-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**97625**
Client ID:	**ZZZZZZ**	Batch ID:	**48462**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**1/20/2015**		SeqNo:	**1914776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	15.611	0.50	10.00	4.700	109	80	120				
Selenium	10.303	0.50	10.00	1.428	88.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014381
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

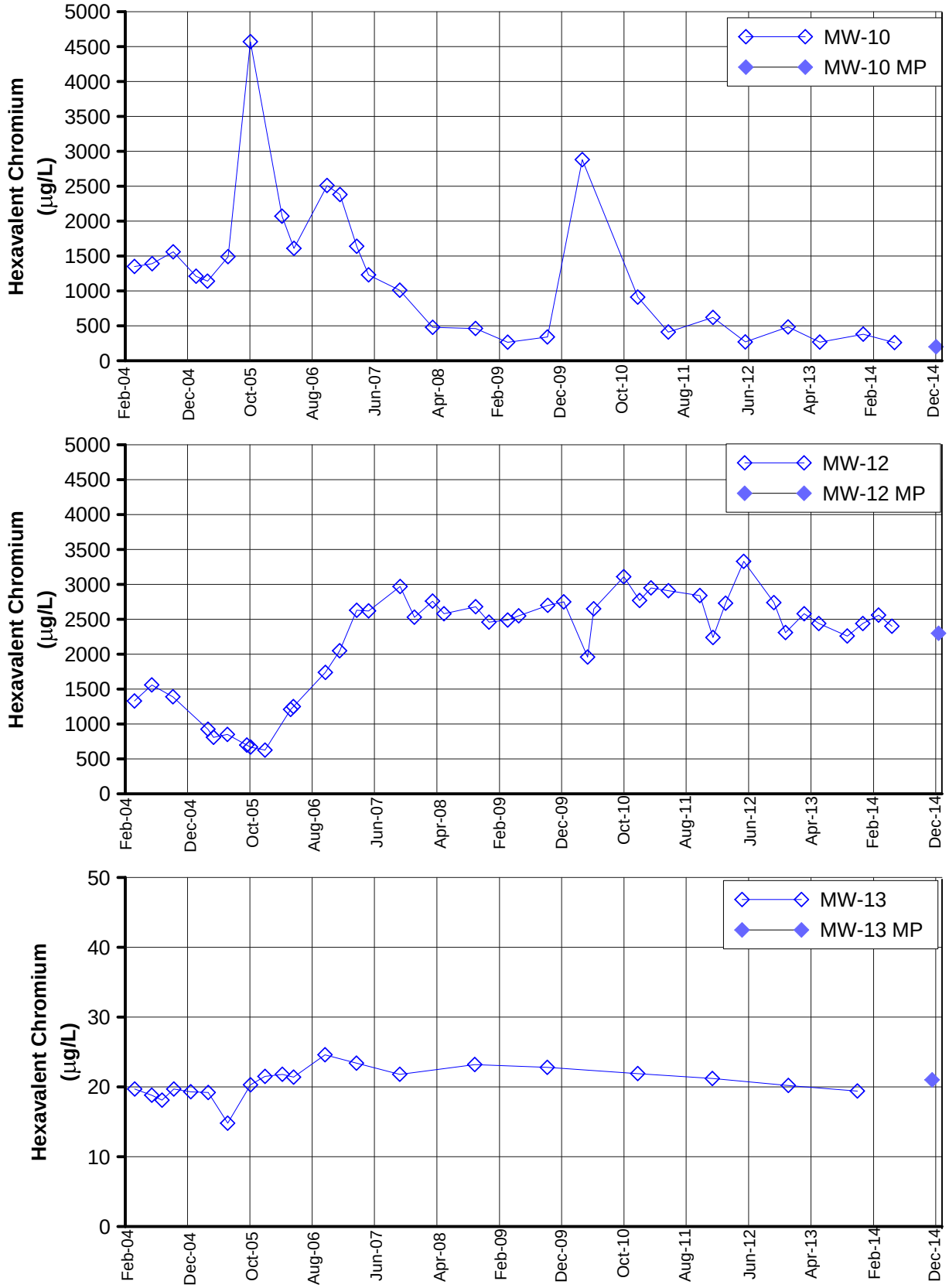
Sample ID	**N014382-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**97625**	
Client ID:	**ZZZZZZ**	Batch ID:	**48462**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/20/2015**		SeqNo:	**1913437**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.767	1.0	10.00	0.04990	97.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Appendix C
Chromium, Molybdenum, Nitrate, and Selenium Trend Graphs

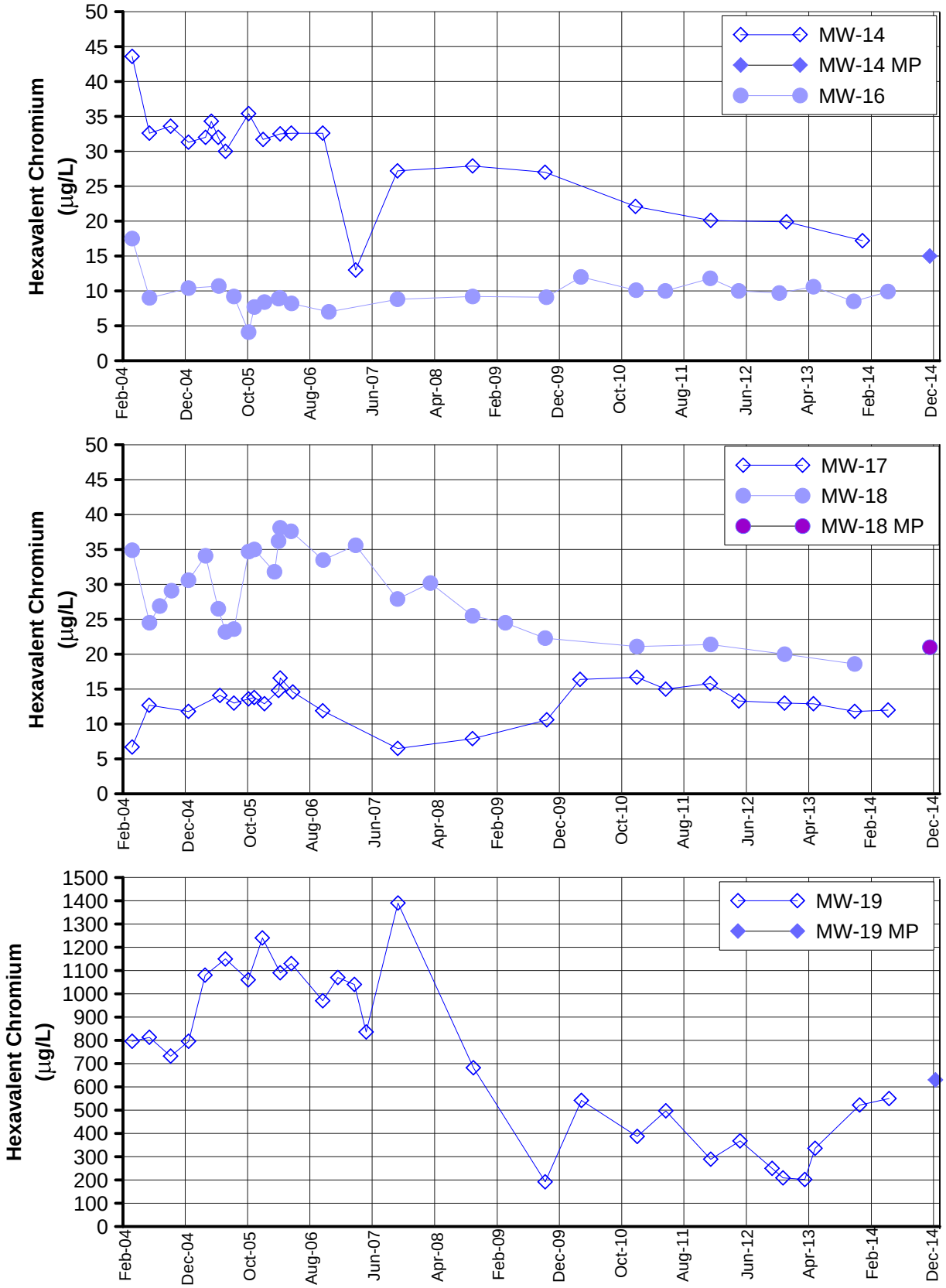


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-1
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-2
HEXAVALENT CHROMIUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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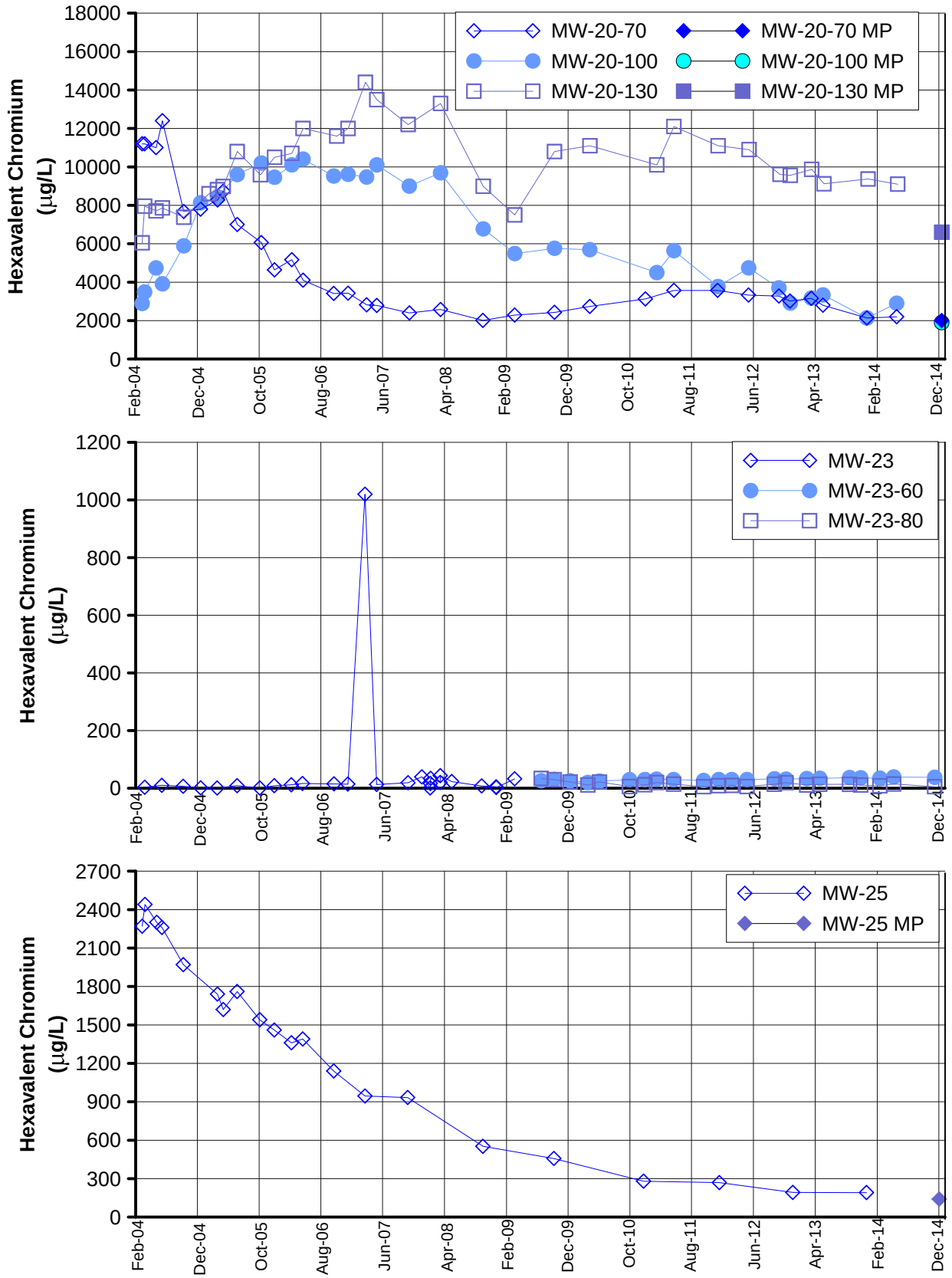

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-3
HEXAVALENT CHROMIUM
IN MW-20 AND MW-23 CLUSTERS AND MW-25
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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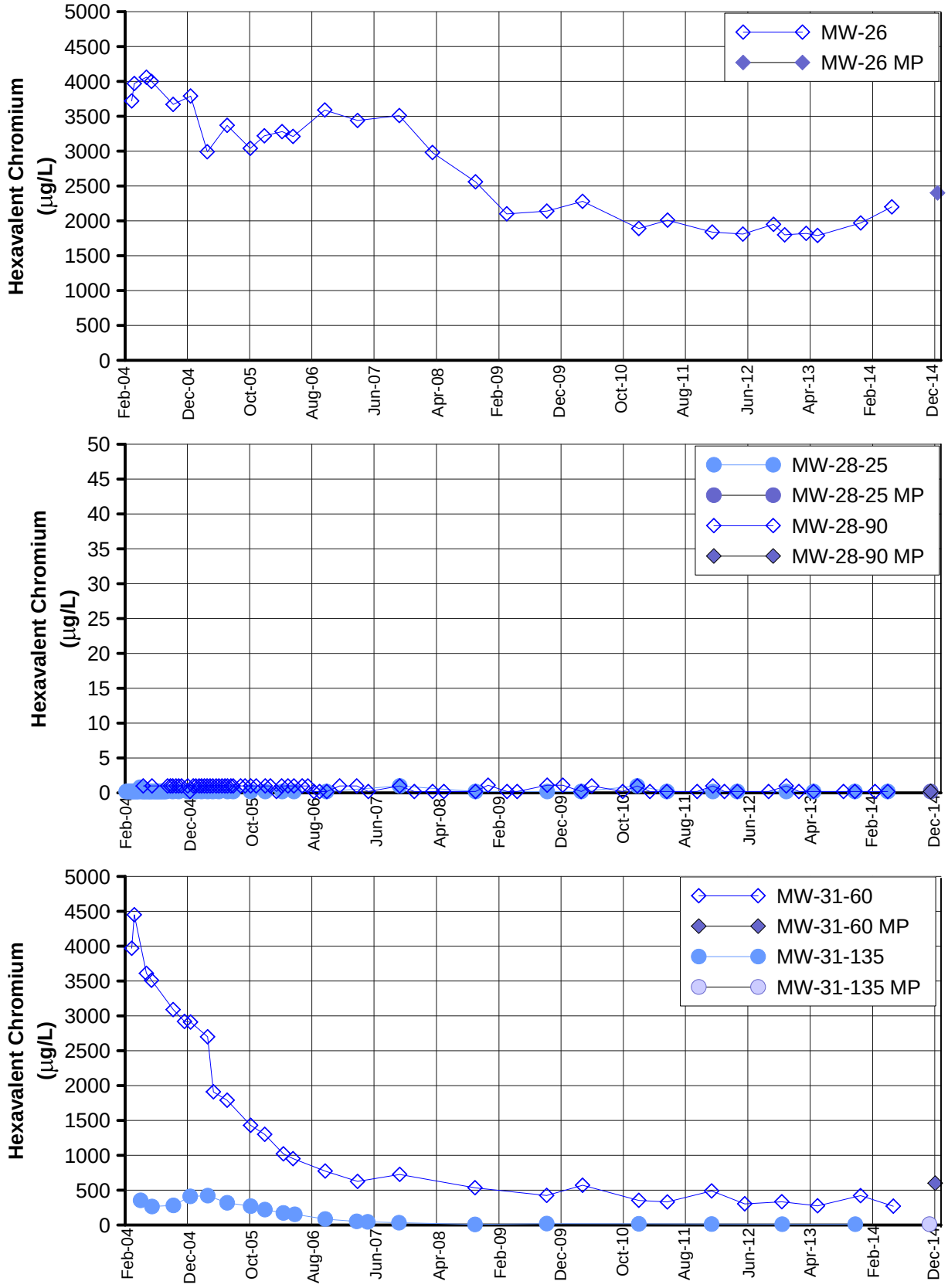

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-90 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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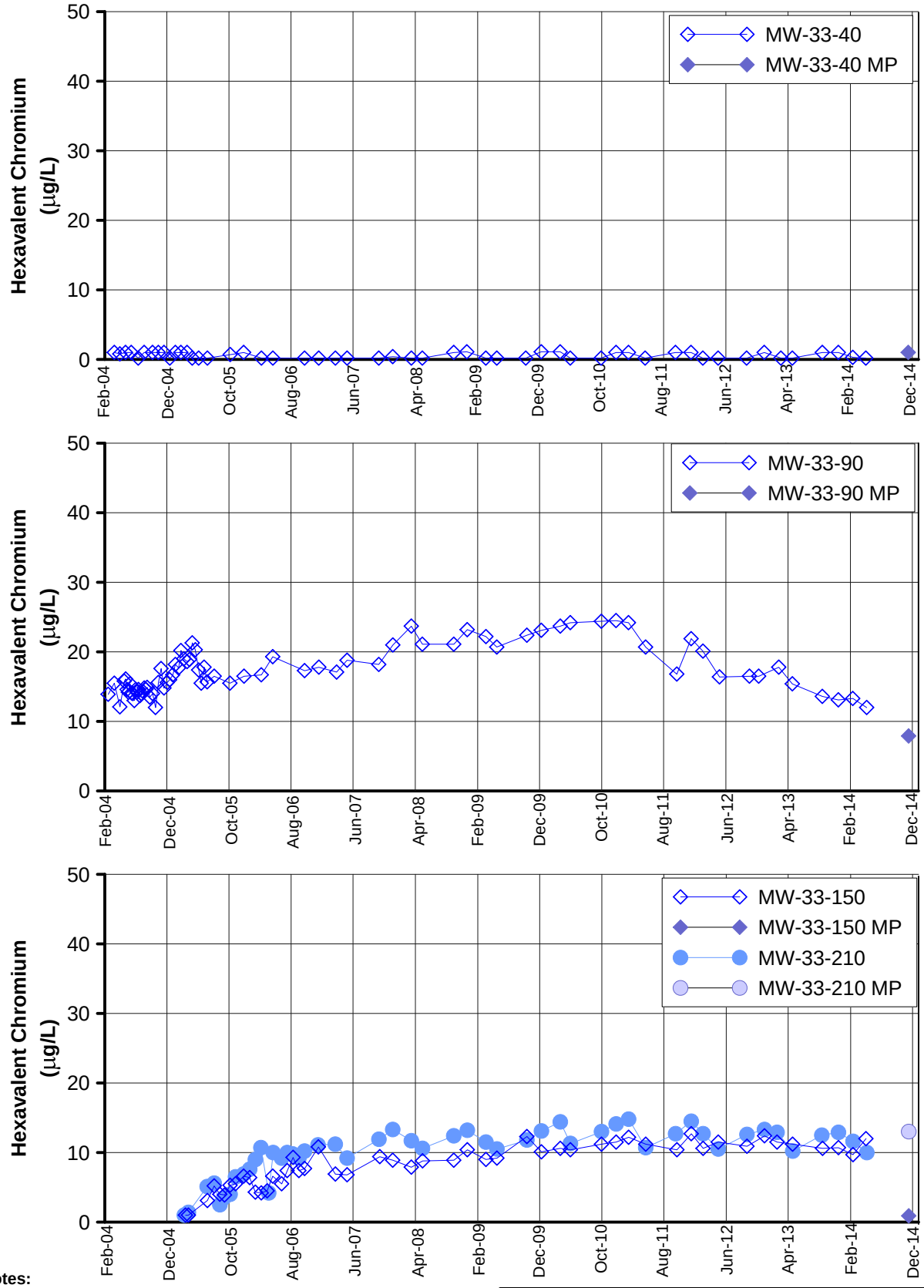

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-33-40 is 20 µg/L.
3) The trigger level for MW-33-90 is 25 µg/L.
4) The trigger level for MW-33-150 is 20 µg/L.
5) The trigger level for MW-33-210 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-5
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
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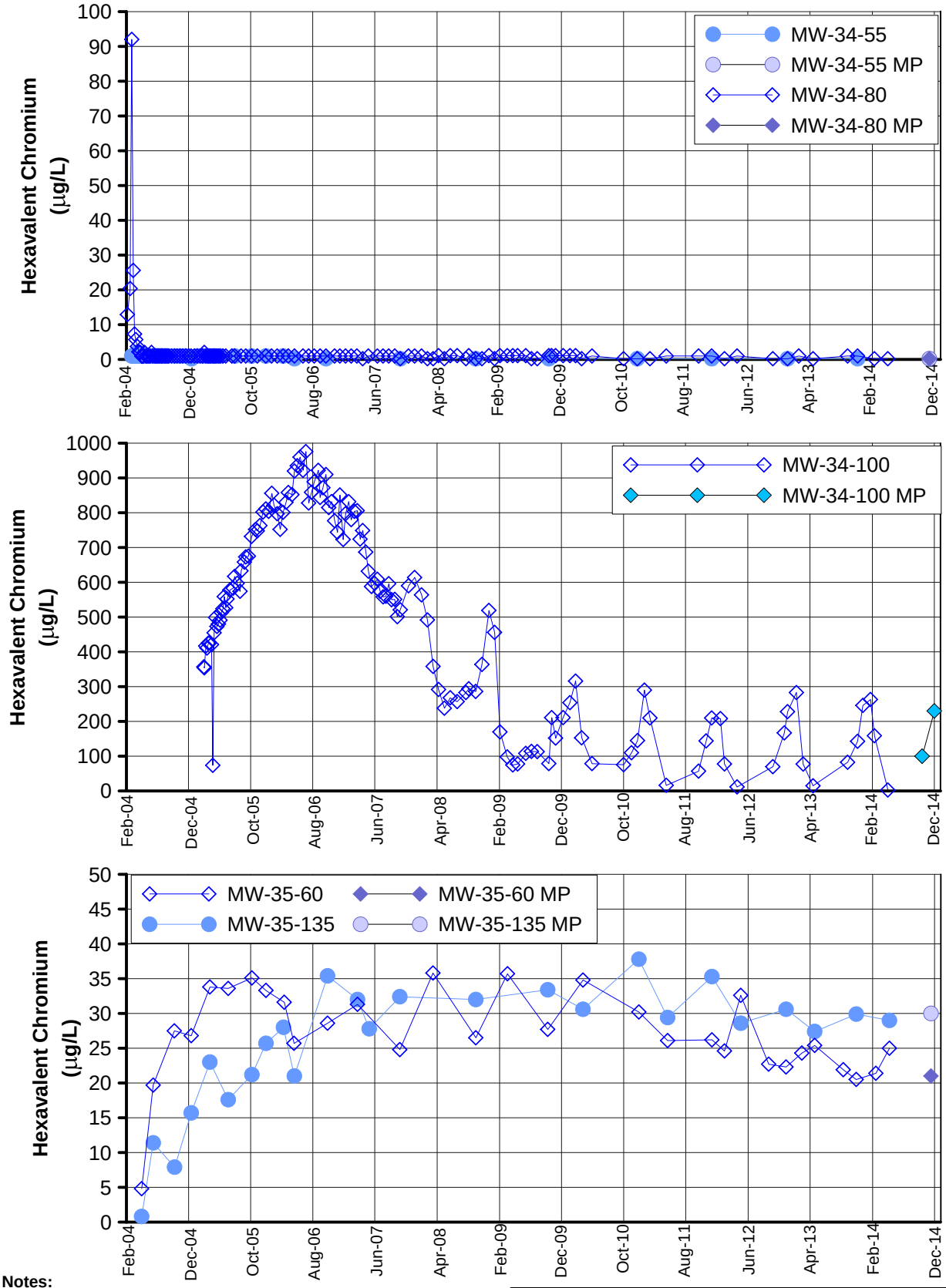

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-34-80 is 20 µg/L.
3) The trigger level for MW-34-100 is 750 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-6
HEXAVALENT CHROMIUM
IN MW-34 AND MW-35 CLUSTERS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
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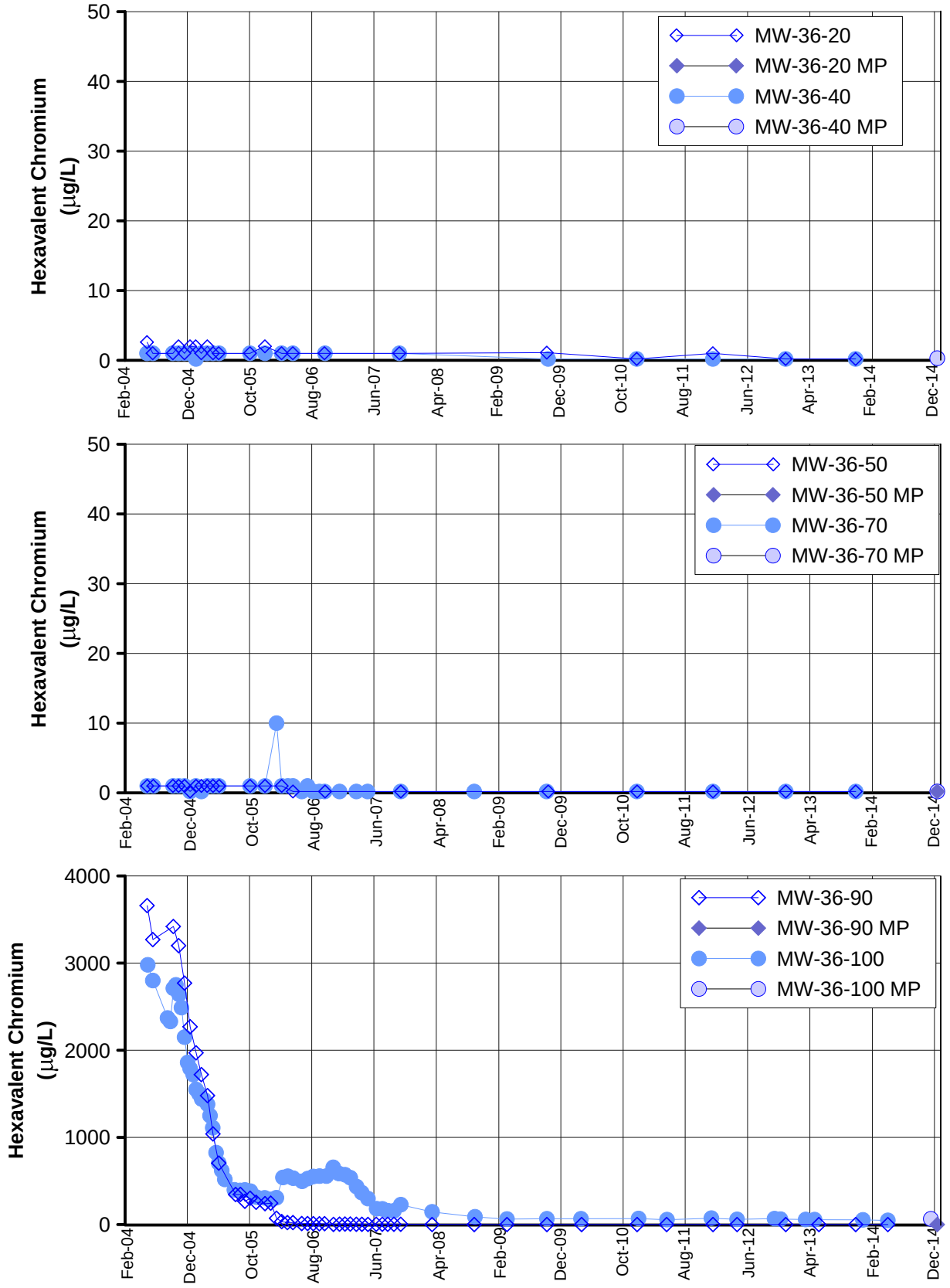

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-70 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-7
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
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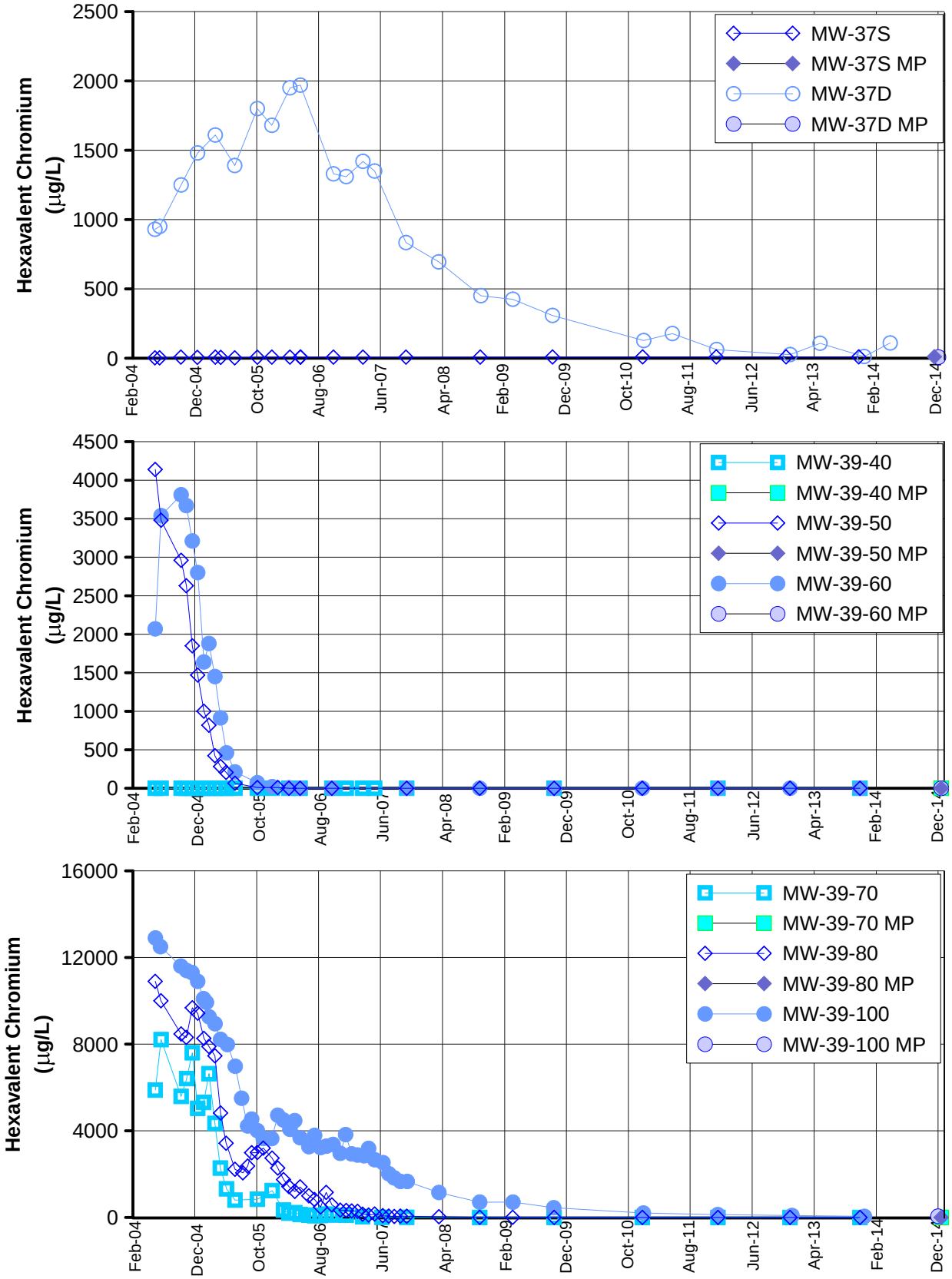

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-40 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-8
HEXAVALENT CHROMIUM
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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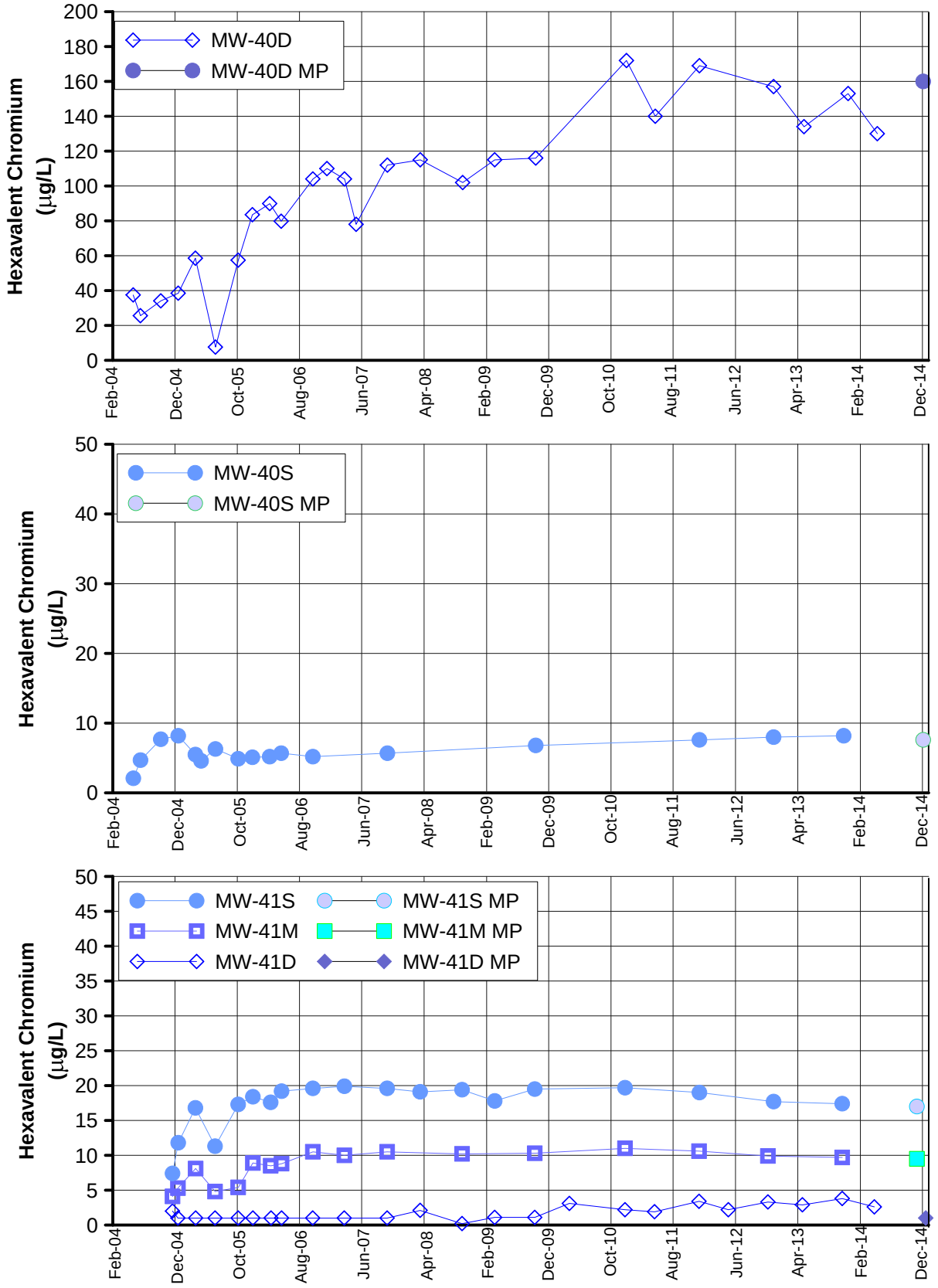

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
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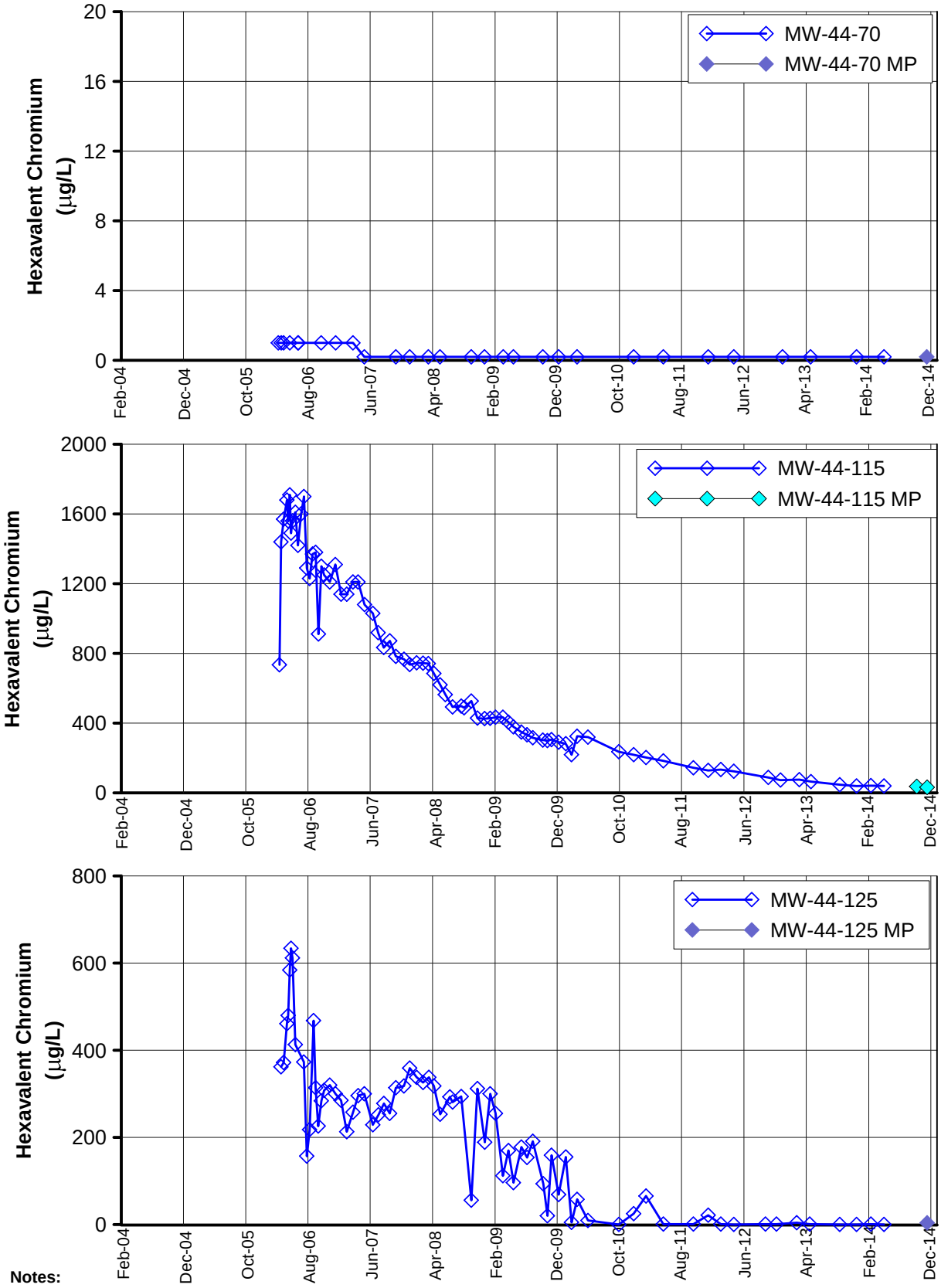

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-44-70 is 20 µg/L.
3) The trigger level for MW-44-115 is 1,200 µg/L.
4) The trigger level for MW-44-125 is 475 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-10
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
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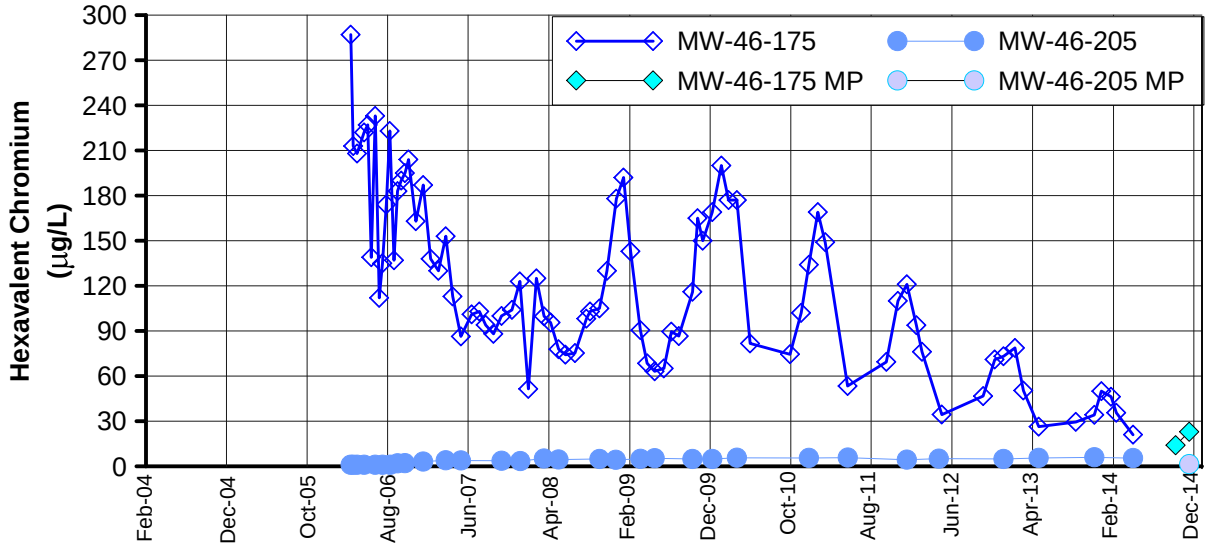

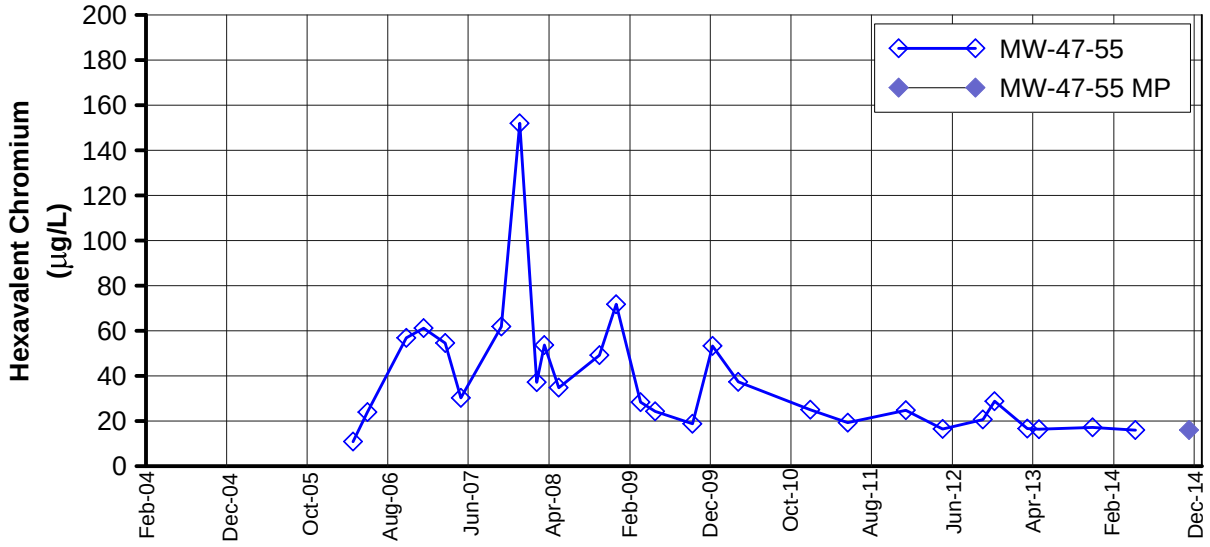

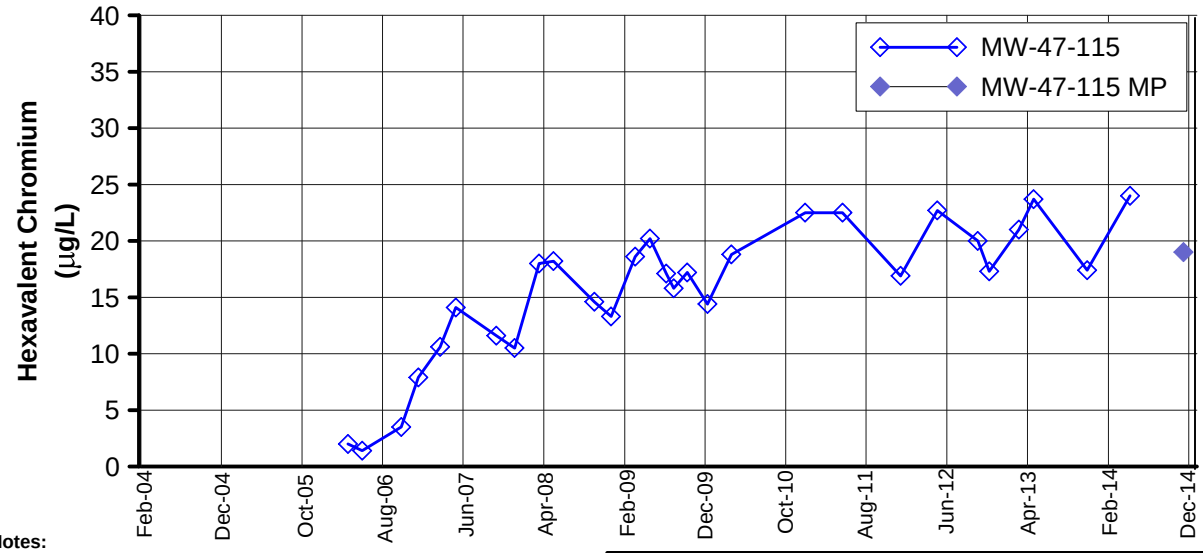

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-46-175 is 225 µg/L.
3) The trigger level for MW-46-205 is 20 µg/L.
4) The trigger level for MW-47-55 is 475 µg/L.
5) The trigger level for MW-47-115 is 31 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-11
HEXAVALENT CHROMIUM
IN MW-46 AND MW-47 CLUSTERS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
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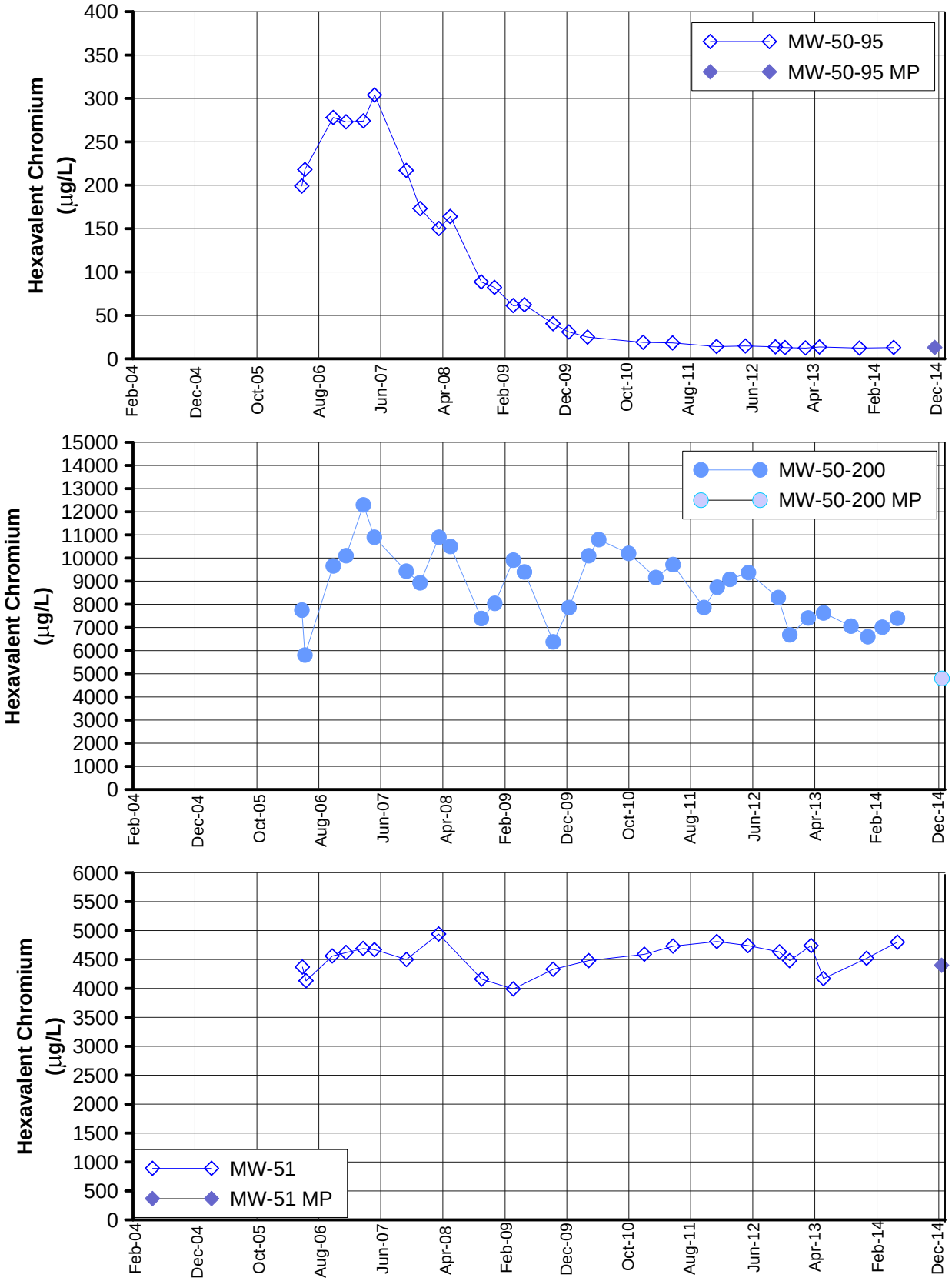

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-12
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
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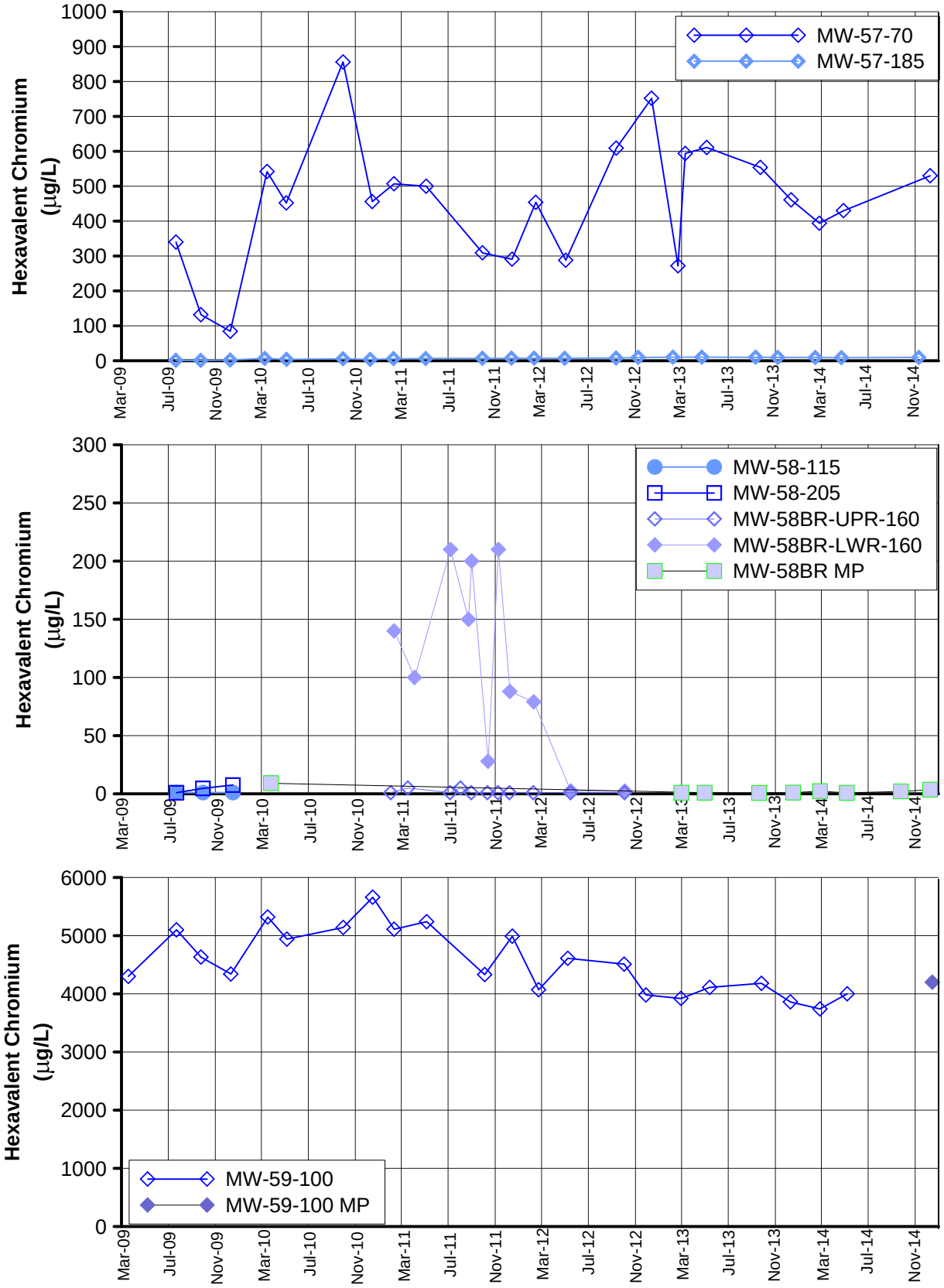

Note:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-13
HEXAVALENT CHROMIUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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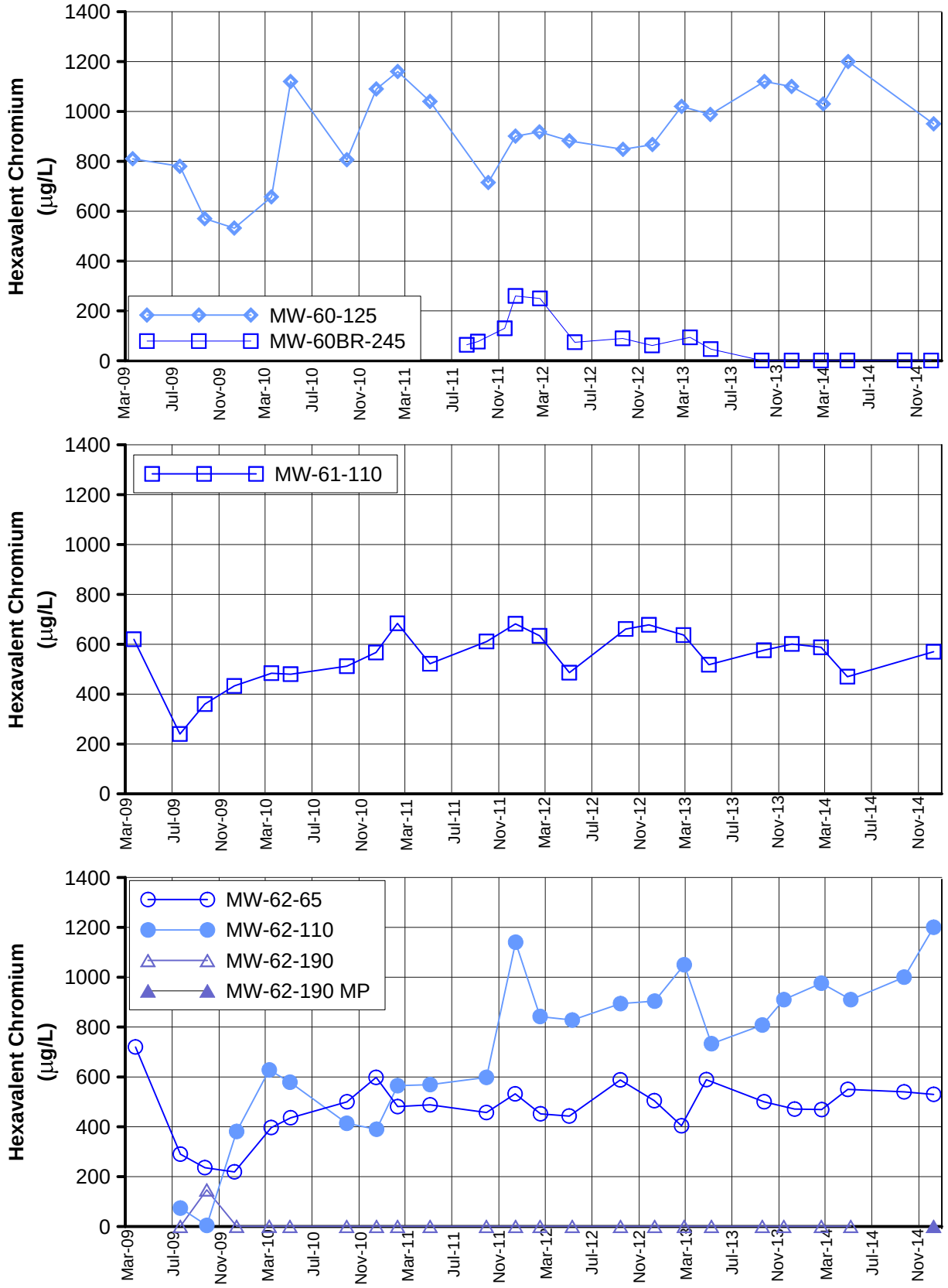

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-14
HEXAVALENT CHROMIUM IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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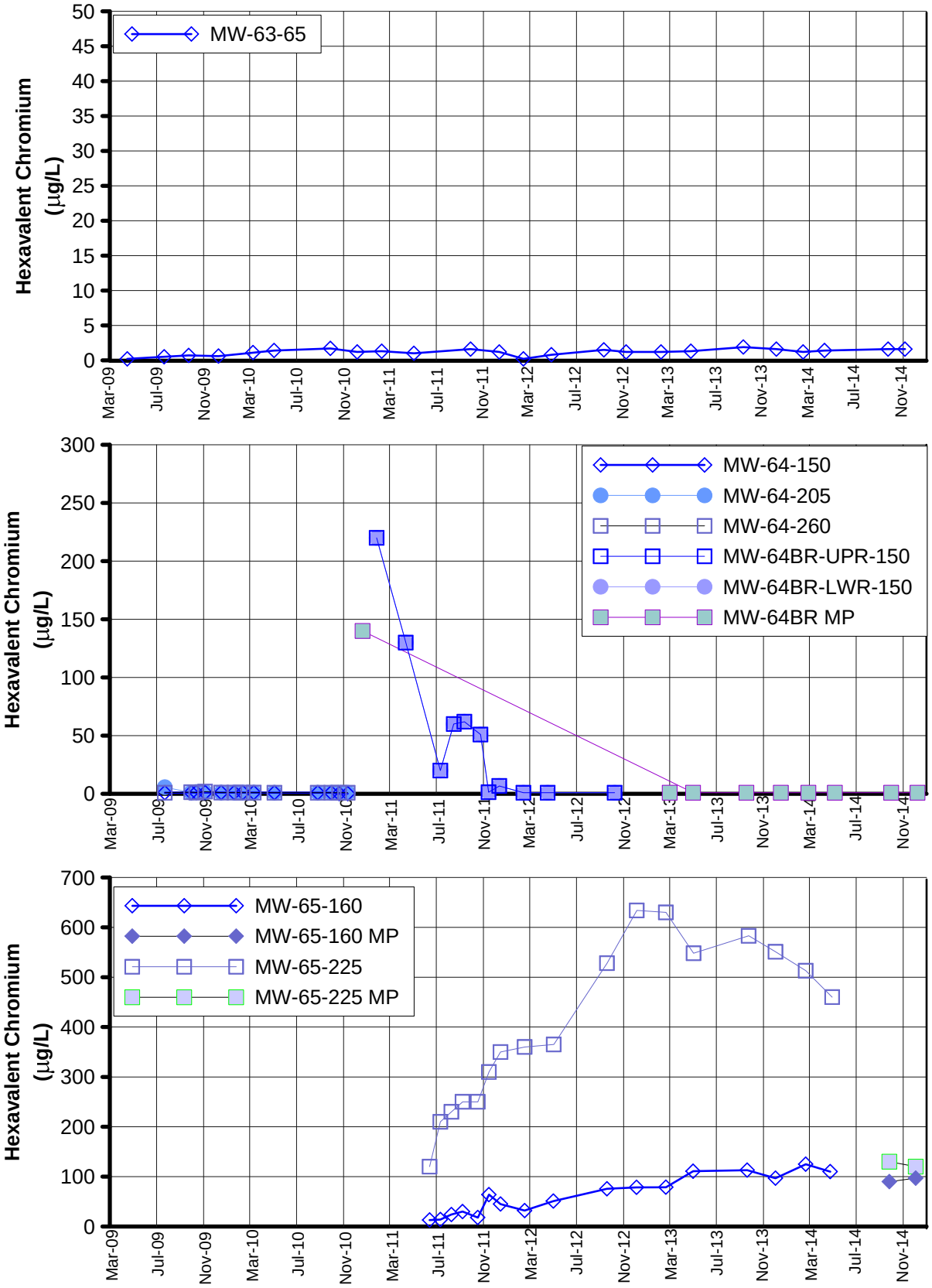

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-15
HEXAVALENT CHROMIUM
IN MW-63-65, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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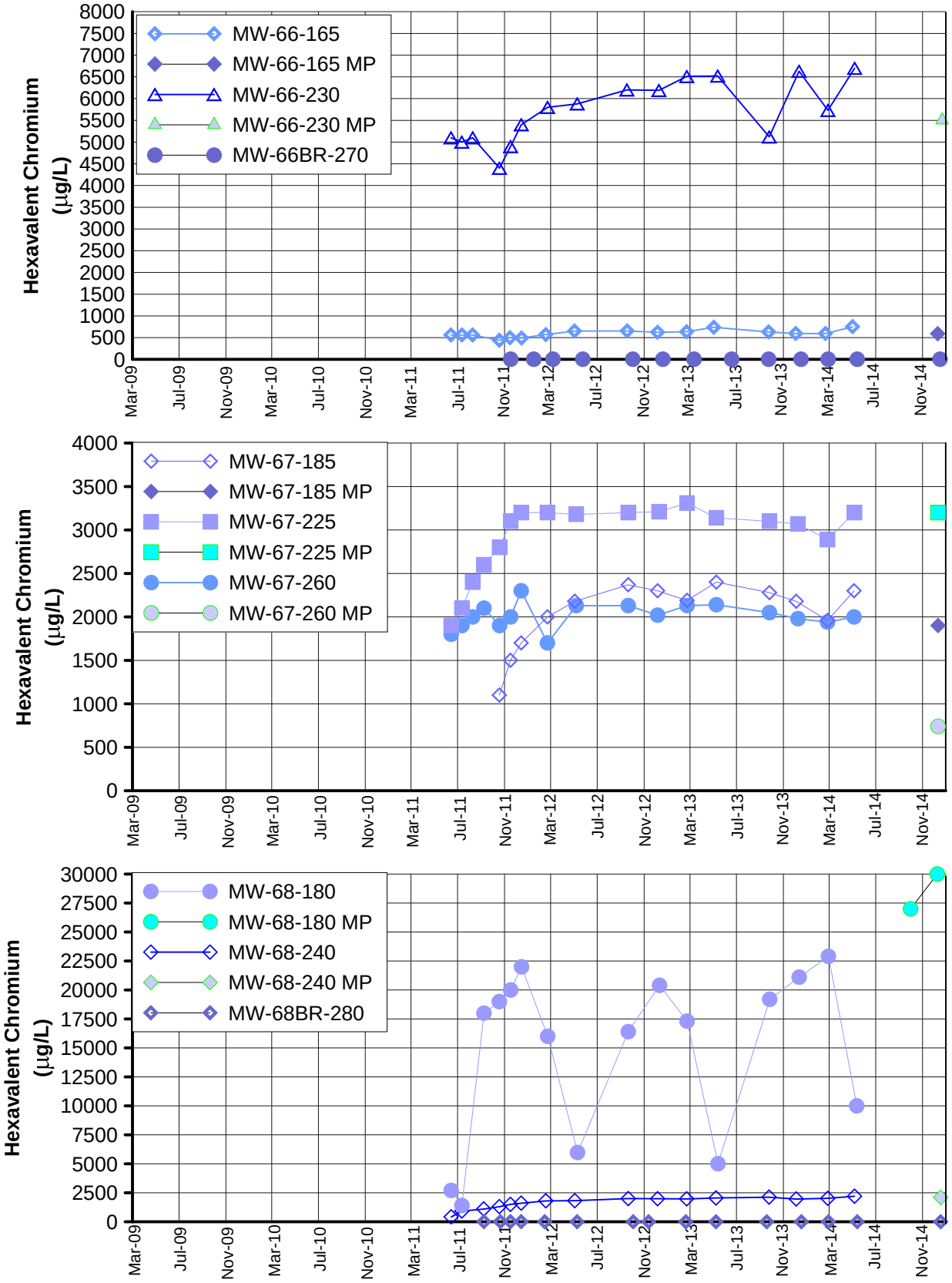

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-16
HEXAVALENT CHROMIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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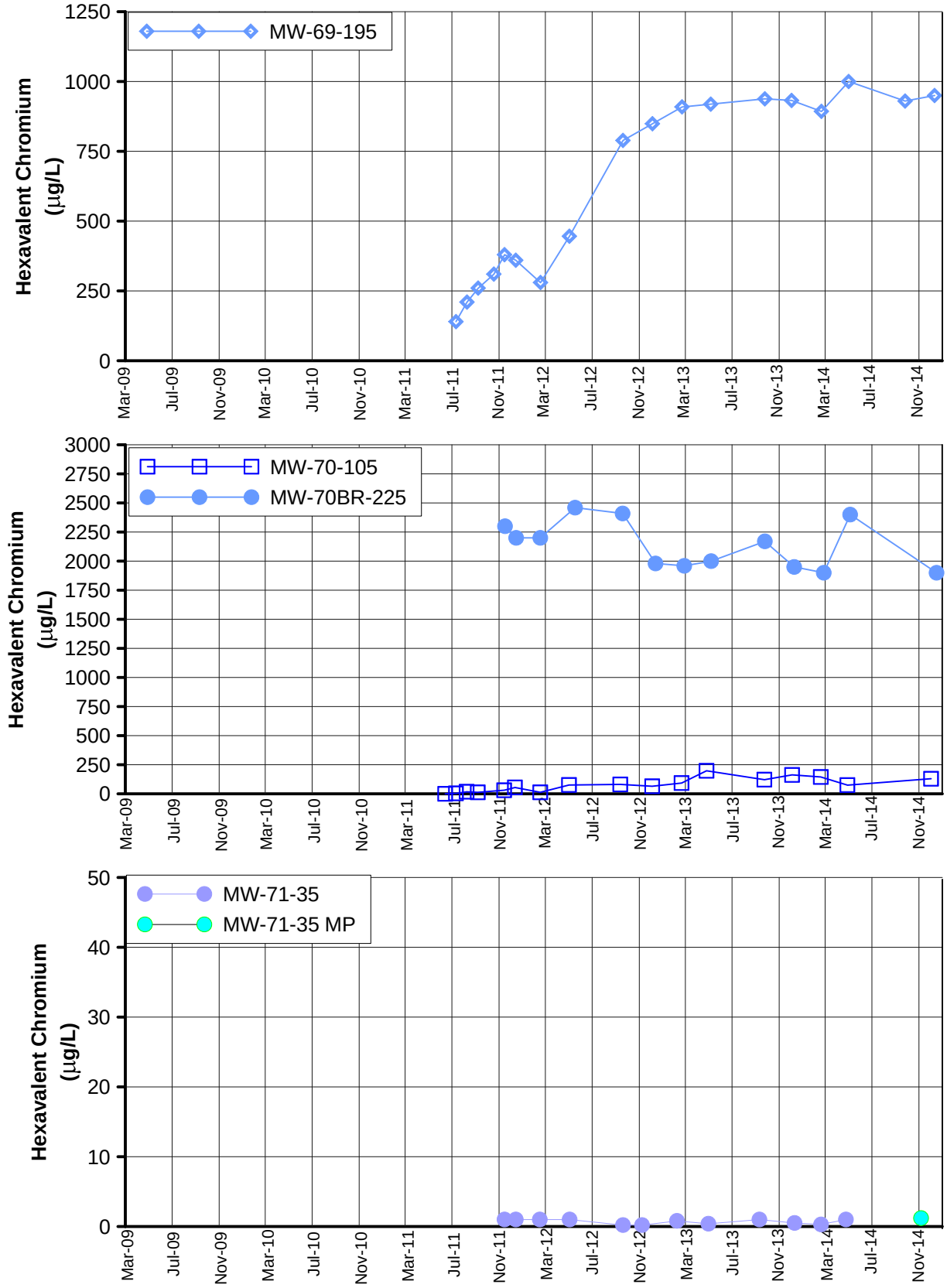

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-17
HEXAVALENT CHROMIUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-35
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

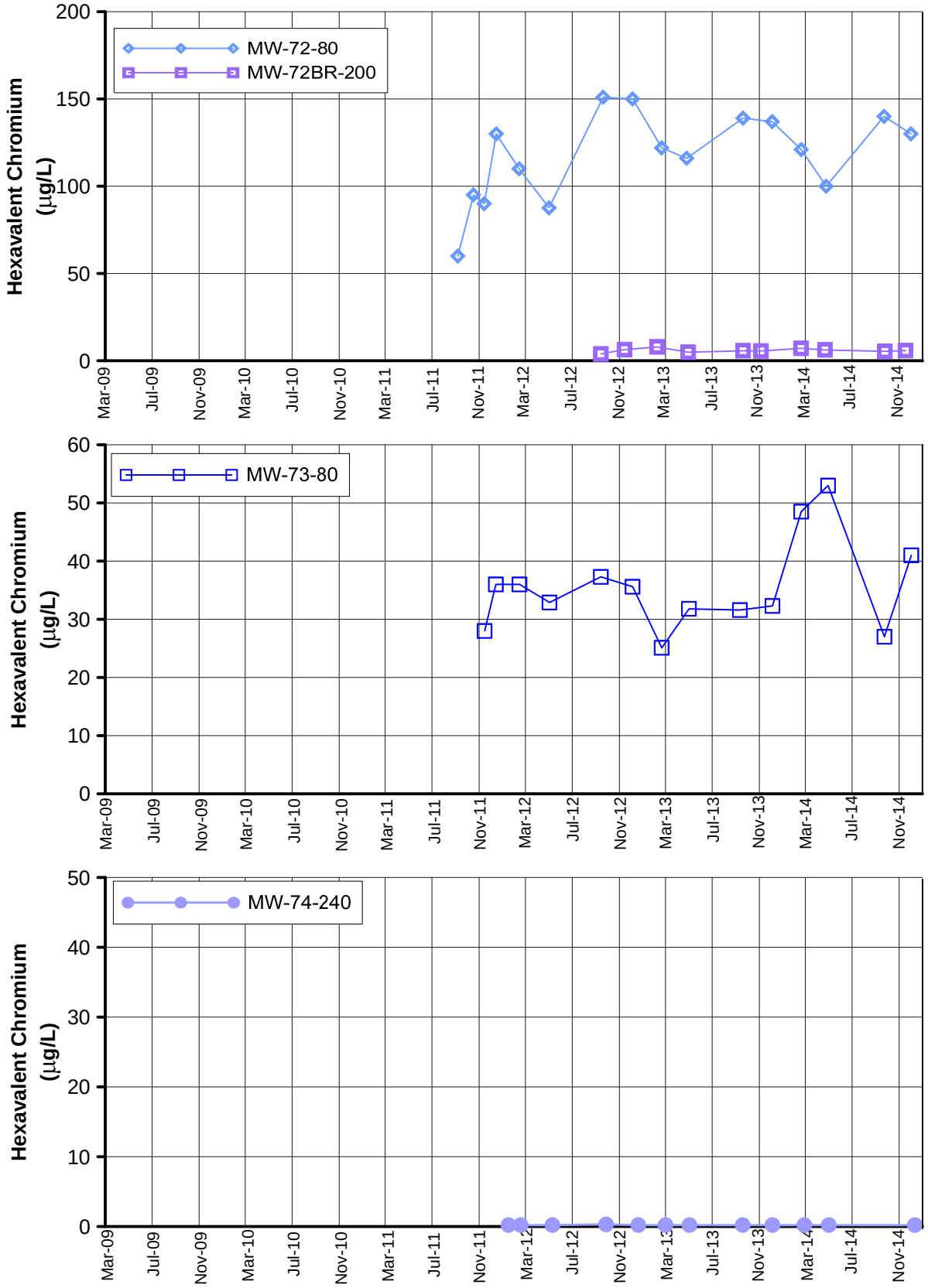

FIGURE C-18
HEXAVALENT CHROMIUM
IN MW-72 CLUSTER, MW-73-80, AND MW-74-240
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

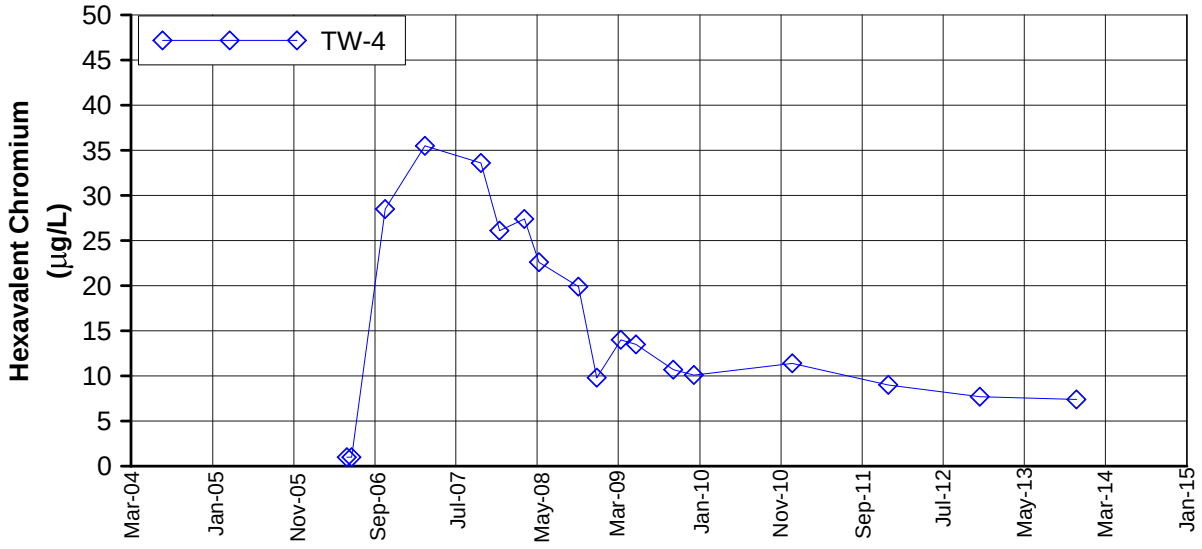

FIGURE C-19
HEXAVALENT CHROMIUM
IN TW-4
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
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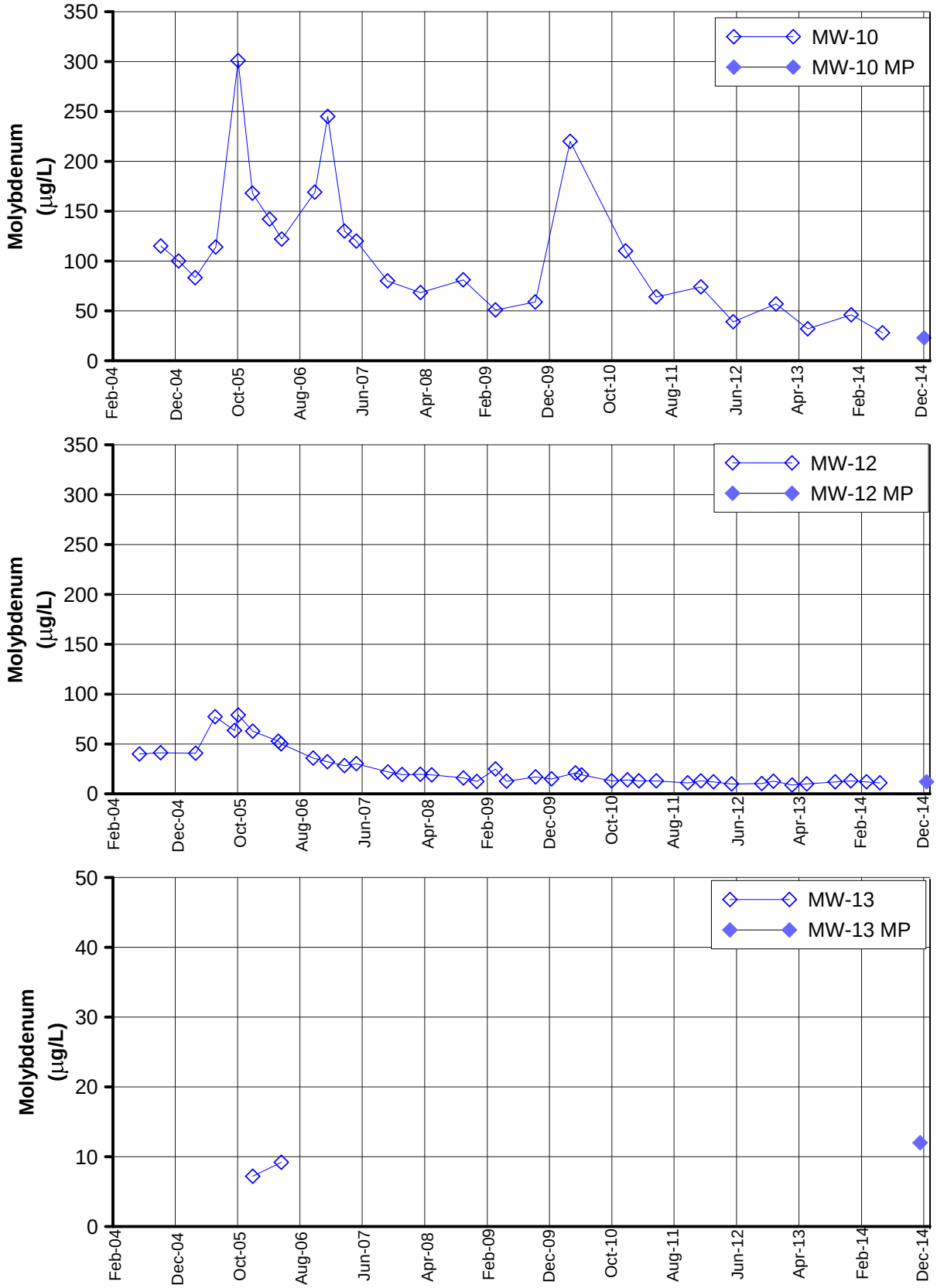
CH2MHILL

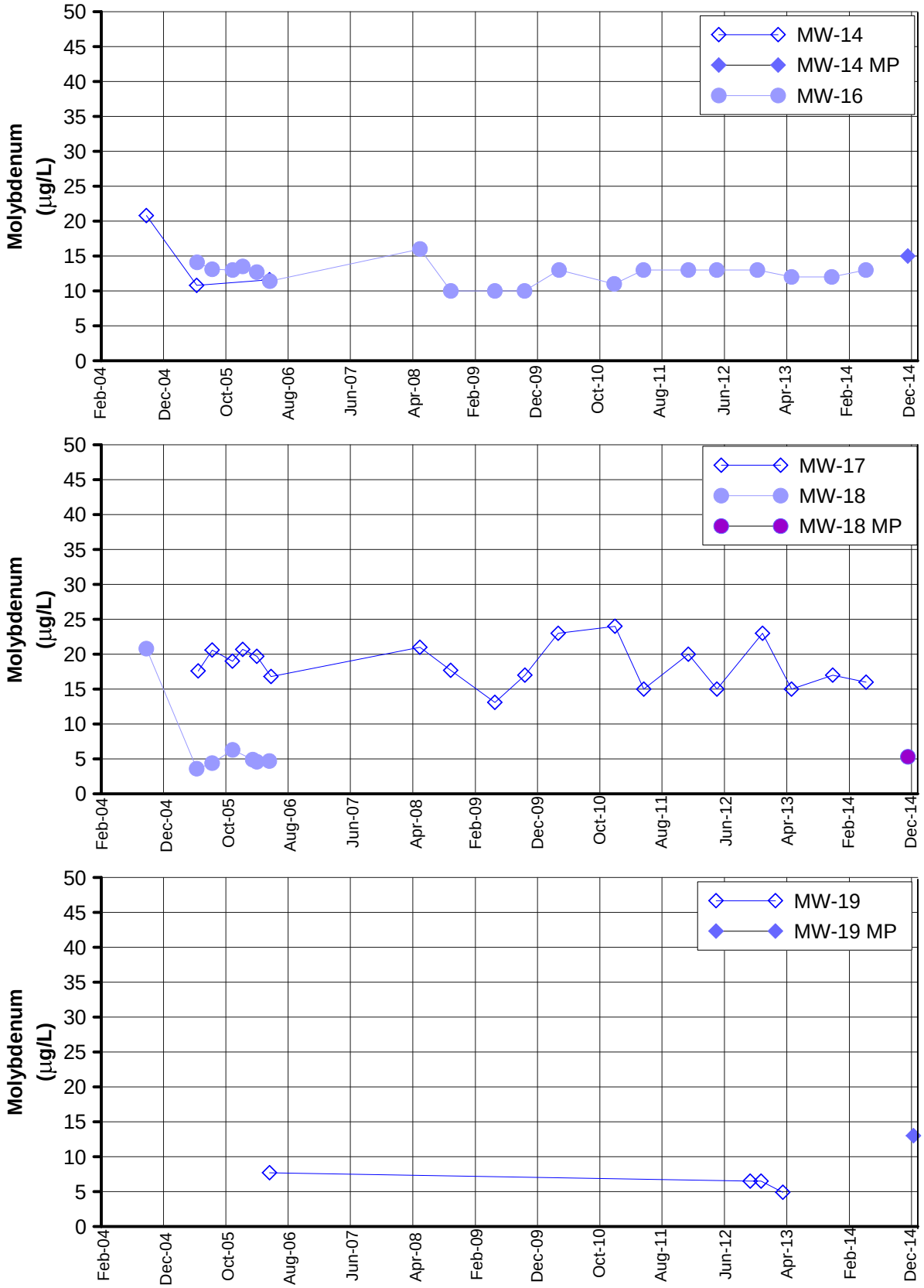


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-20
MOLYBDENUM
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

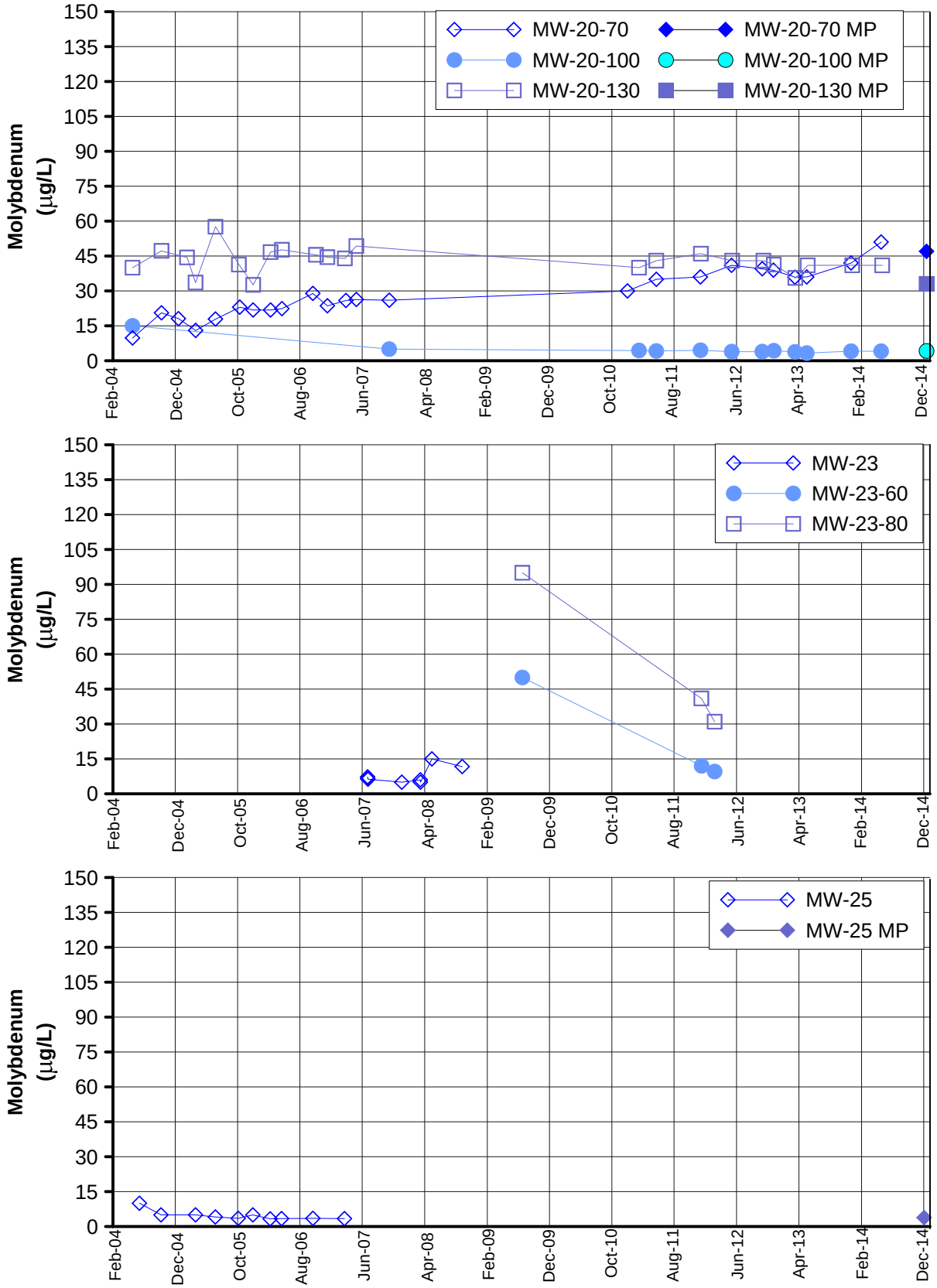


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-21
MOLYBDENUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

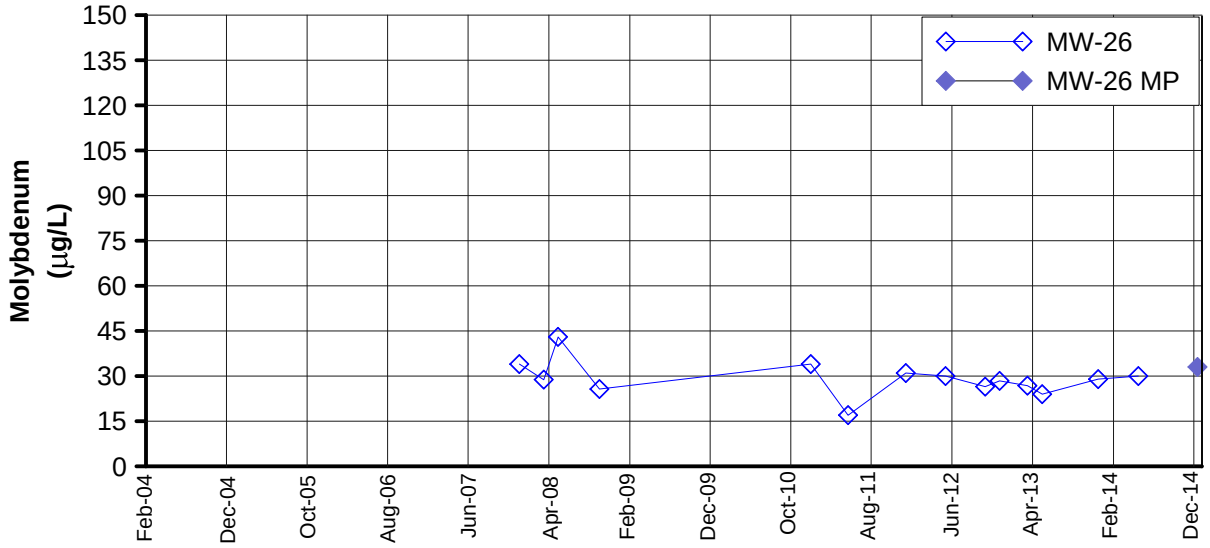


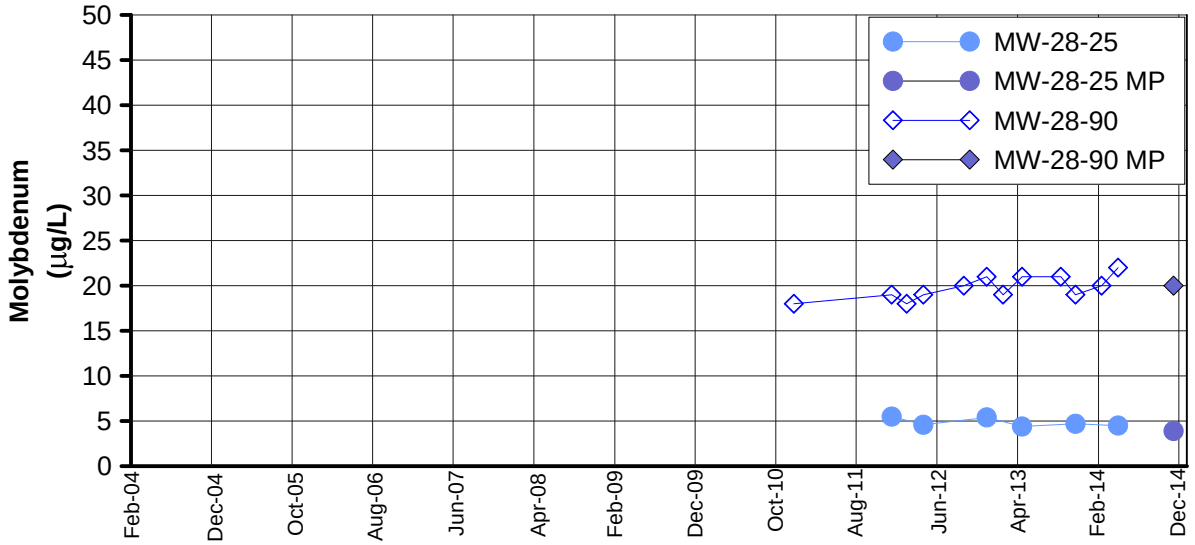
Notes:

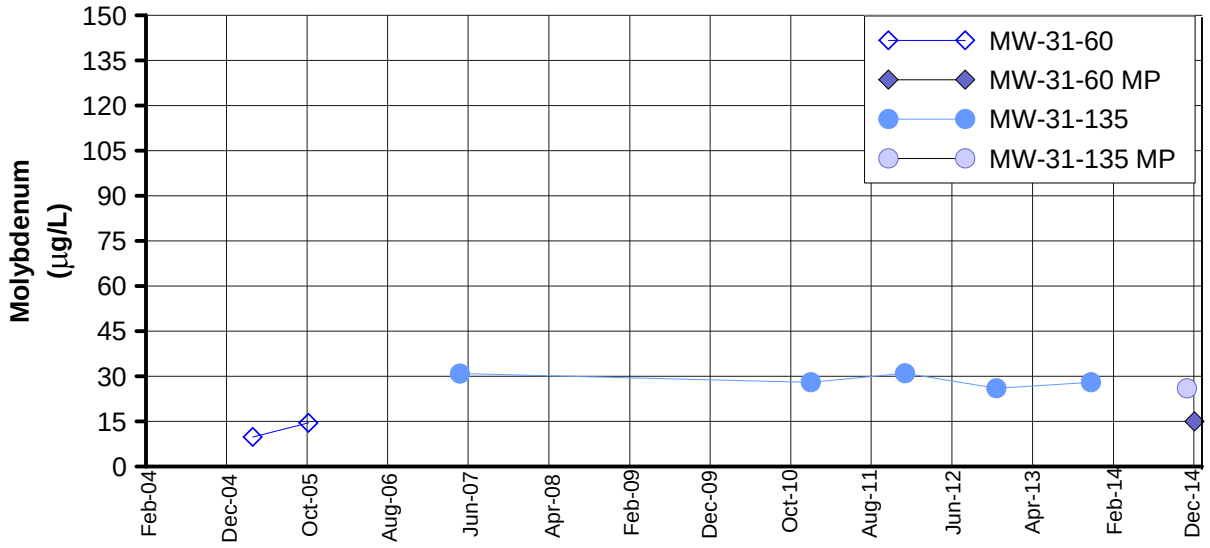
MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-22
MOLYBDENUM
IN MW-20, MW-23, AND MW-25 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





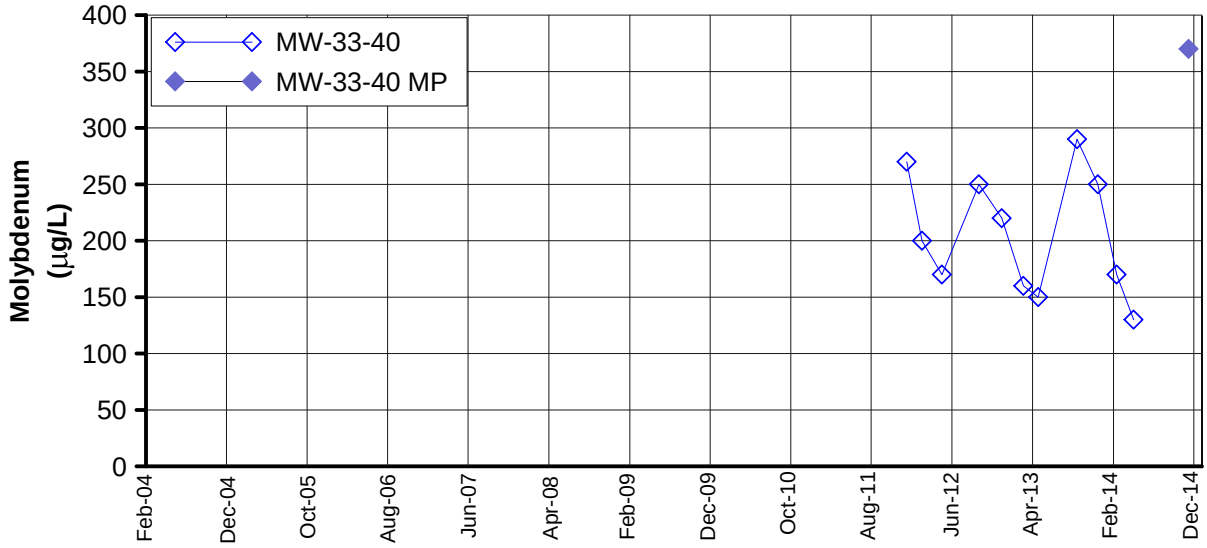


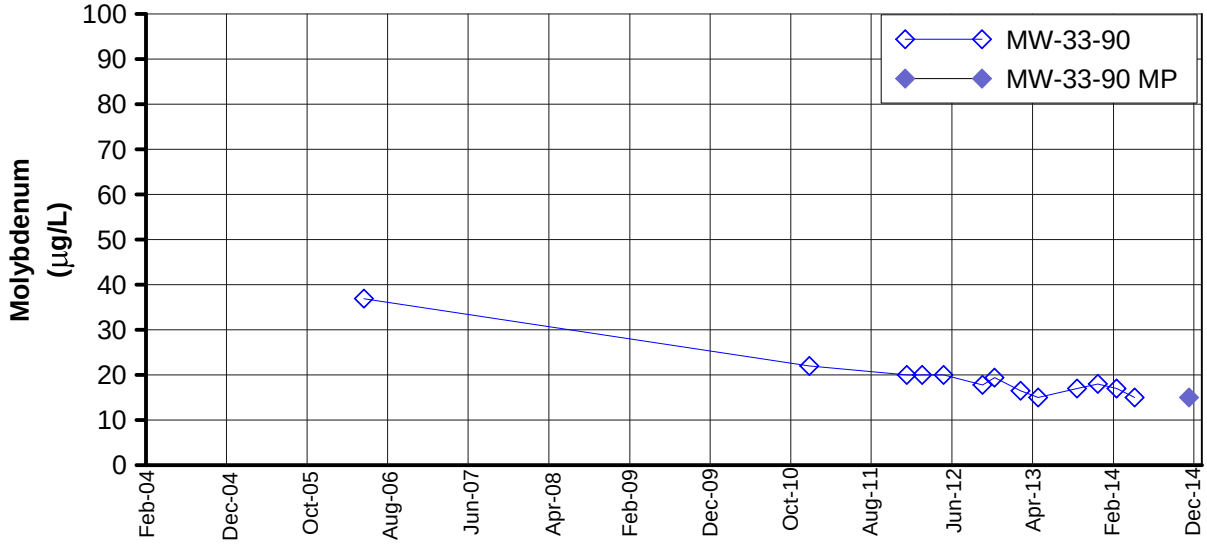
Notes:

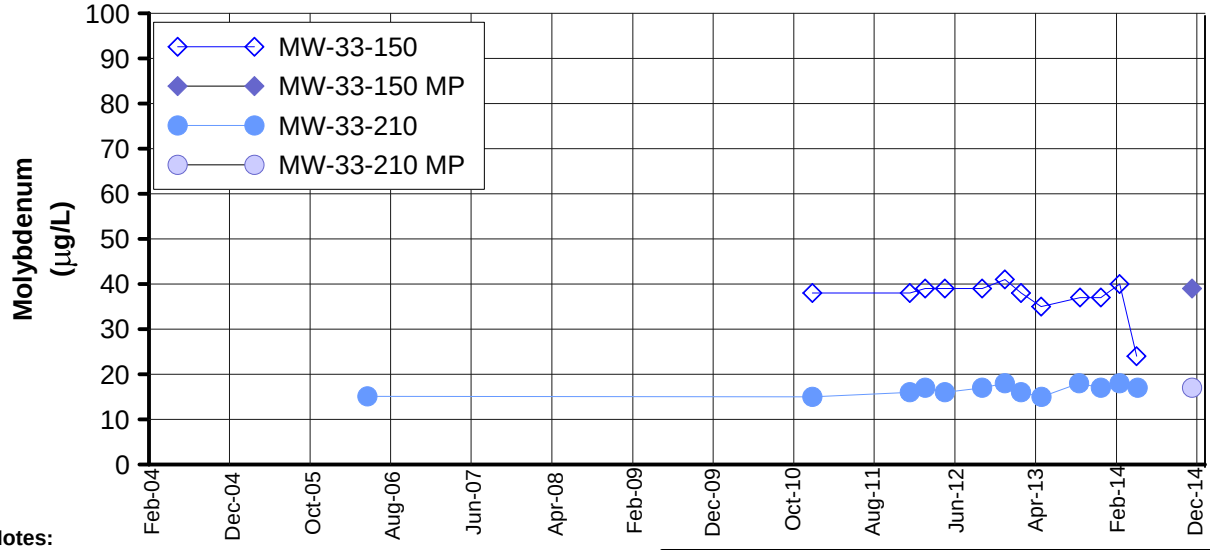
MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-23
MOLYBDENUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





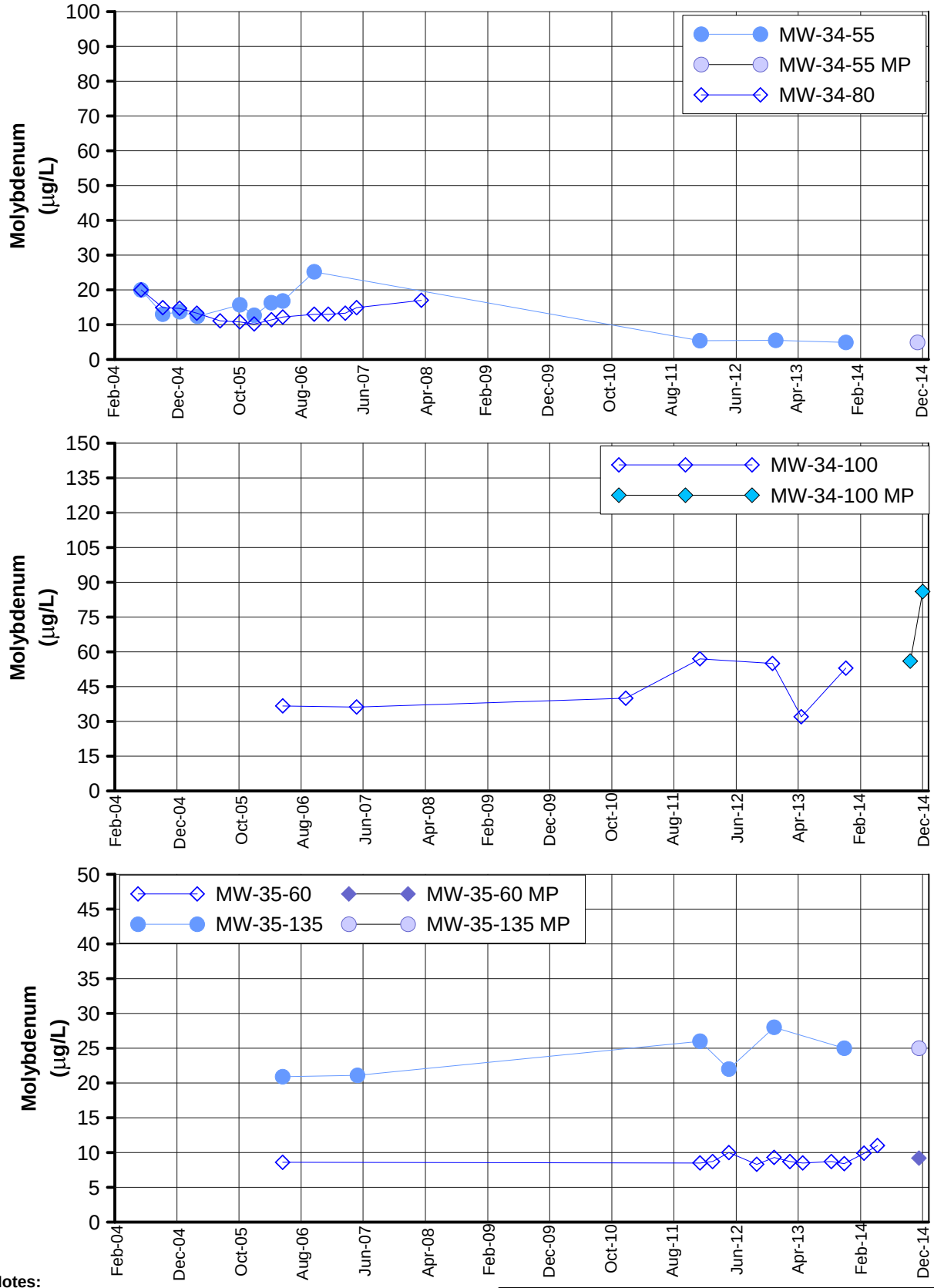


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-24
MOLYBDENUM
IN MW-33 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

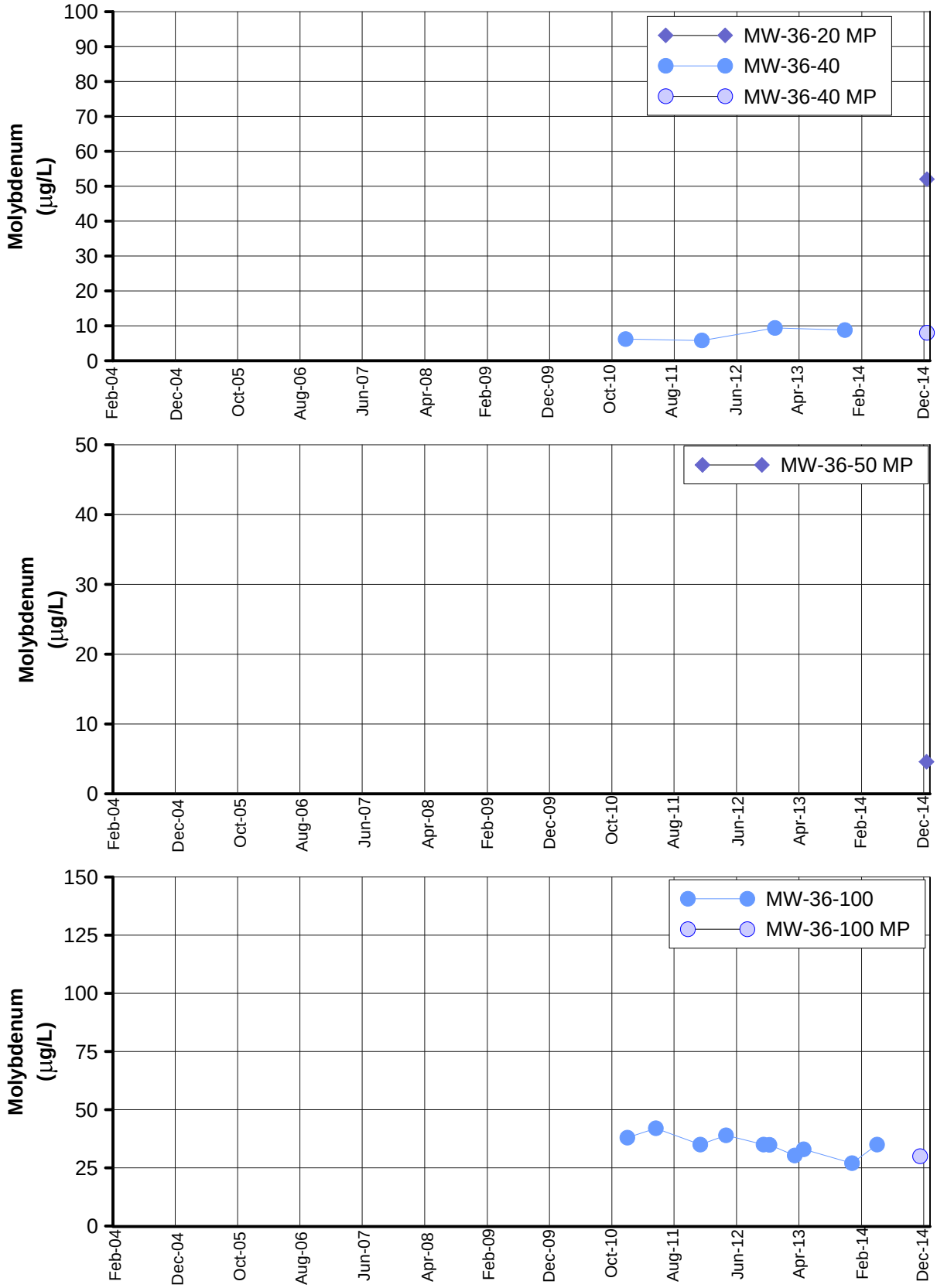


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-25
MOLYBDENUM
IN MW-34 AND MW-35 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

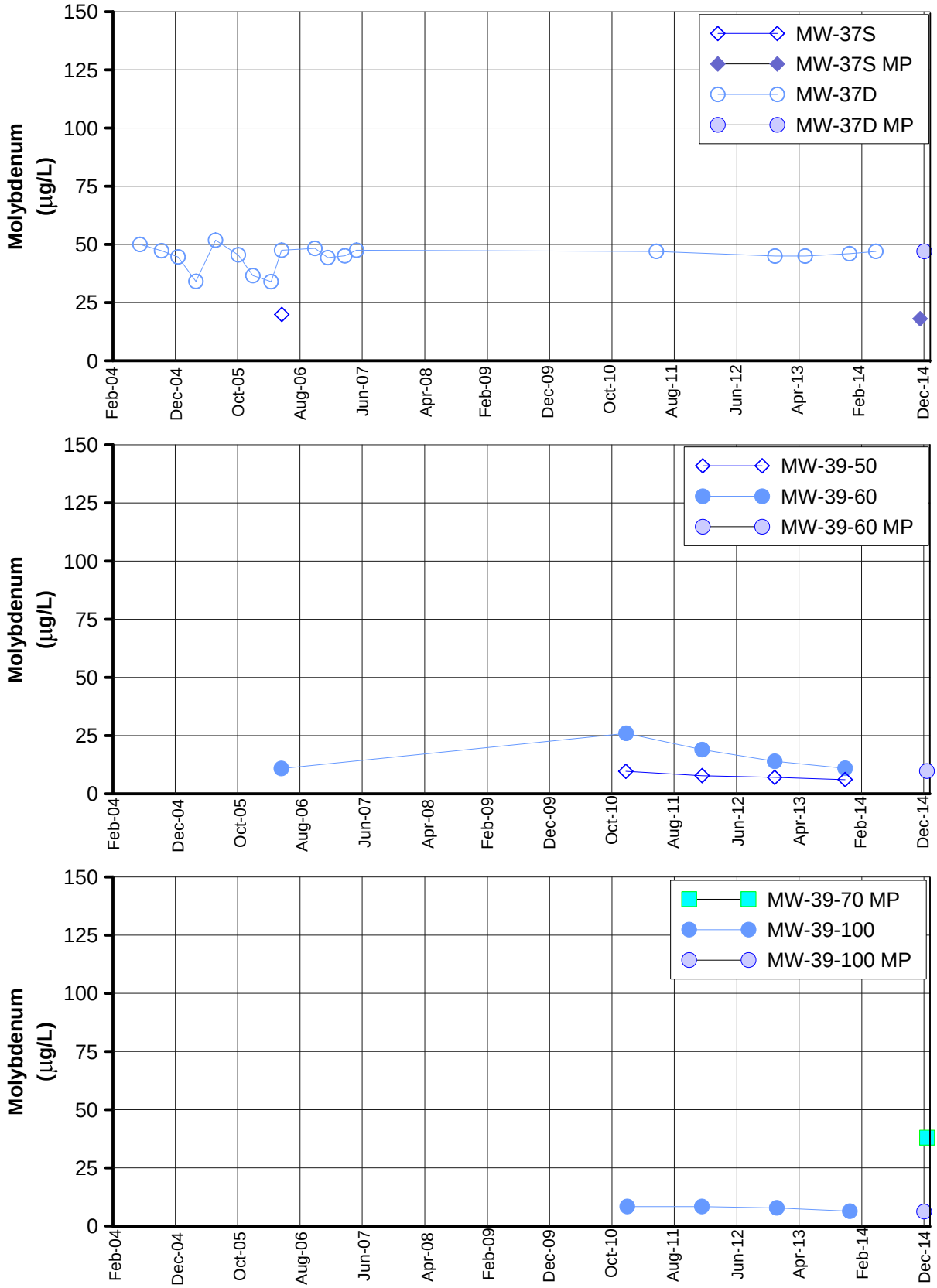


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-26
MOLYBDENUM
IN MW-36 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

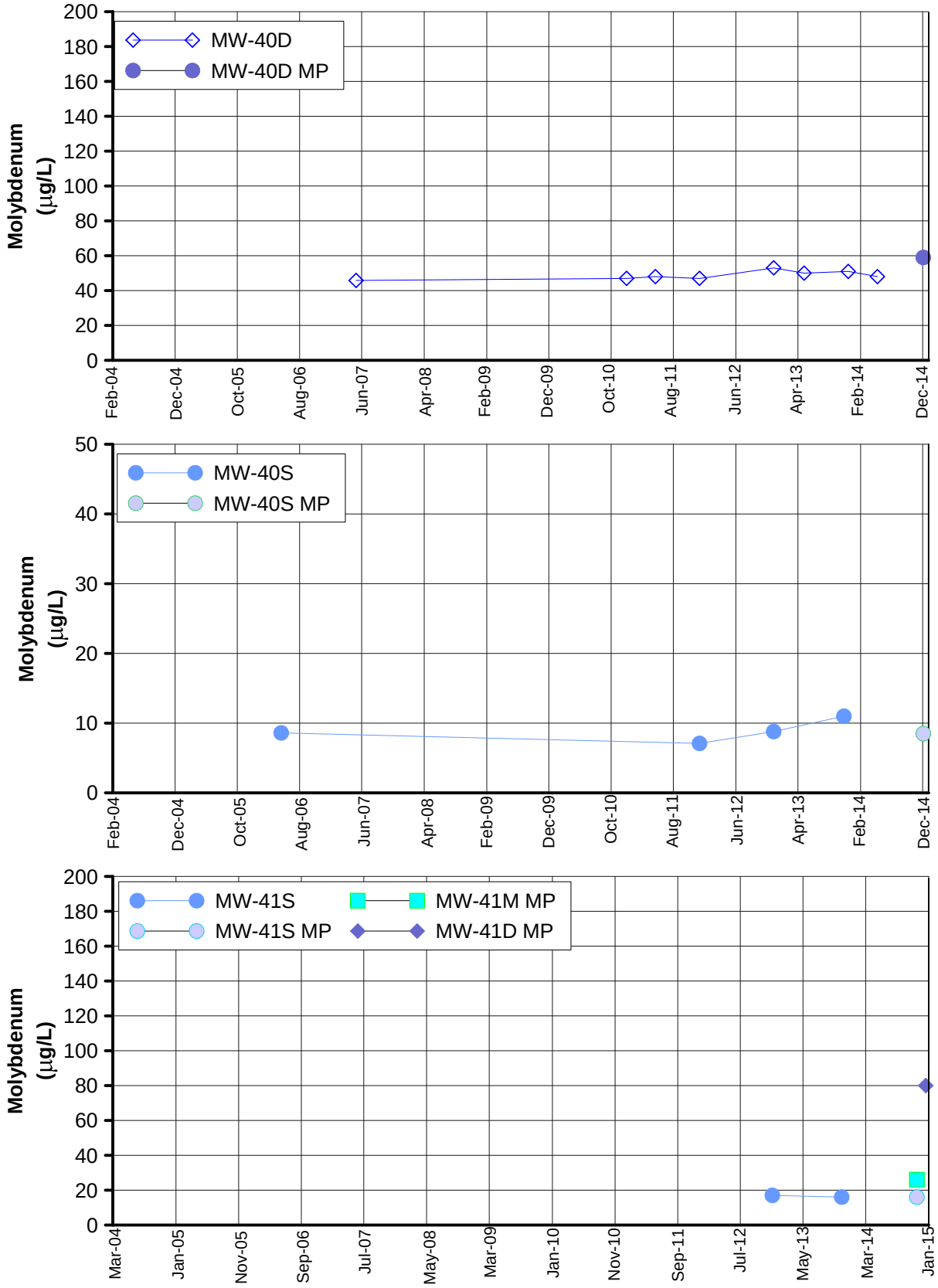


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-27
MOLYBDENUM
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

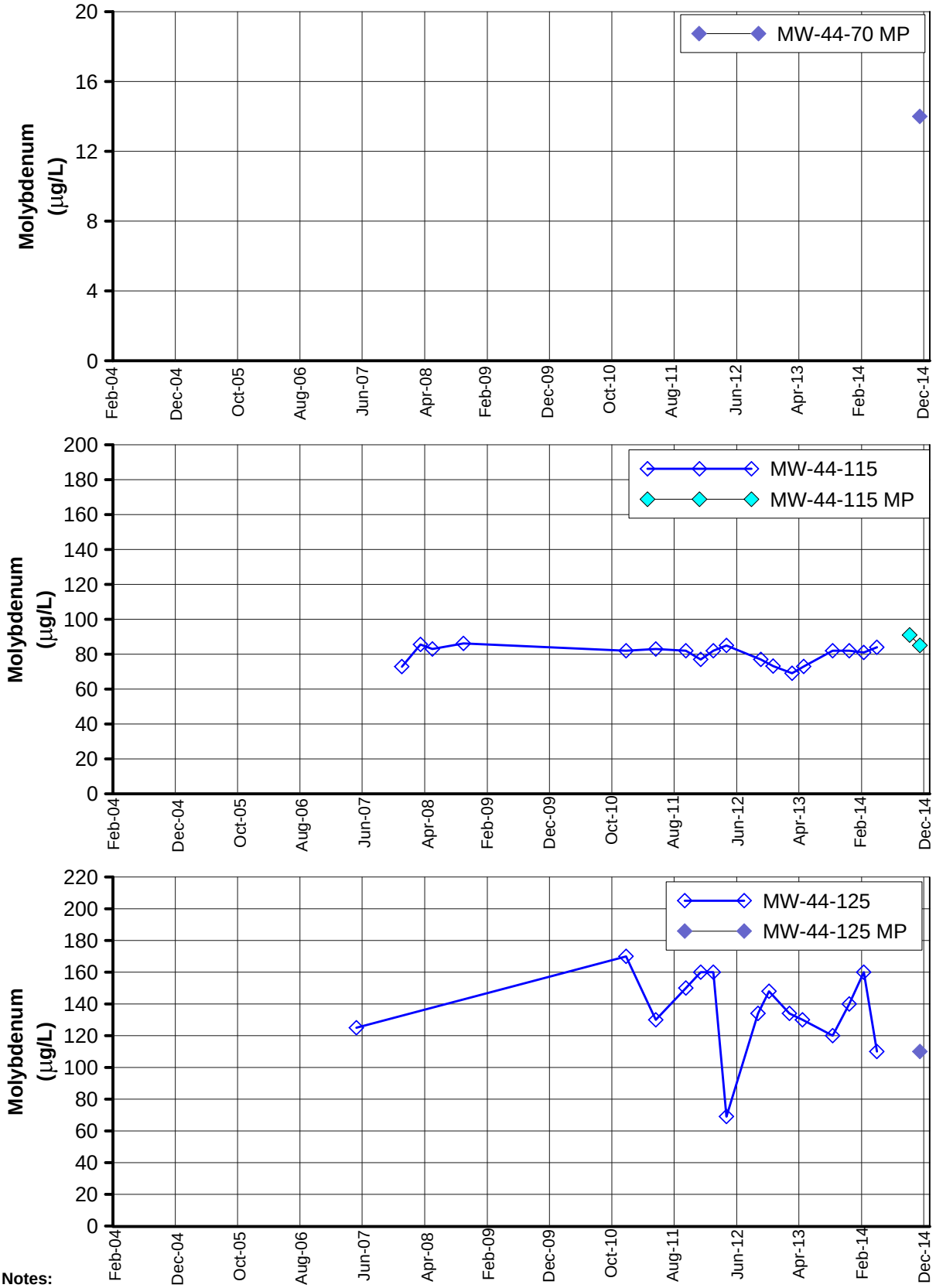


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-28
MOLYBDENUM
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



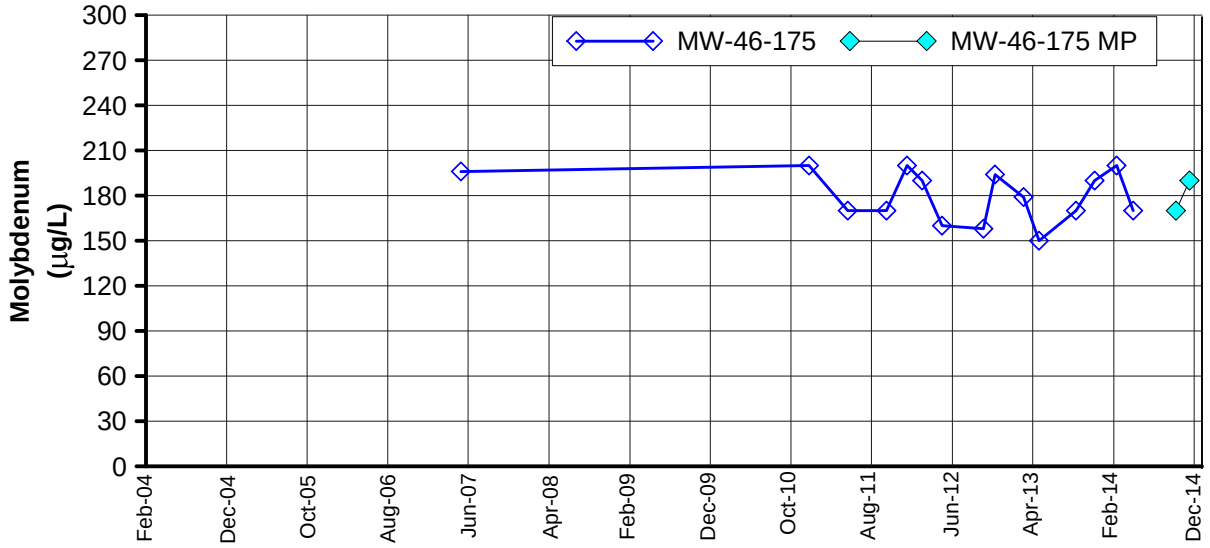
Notes:

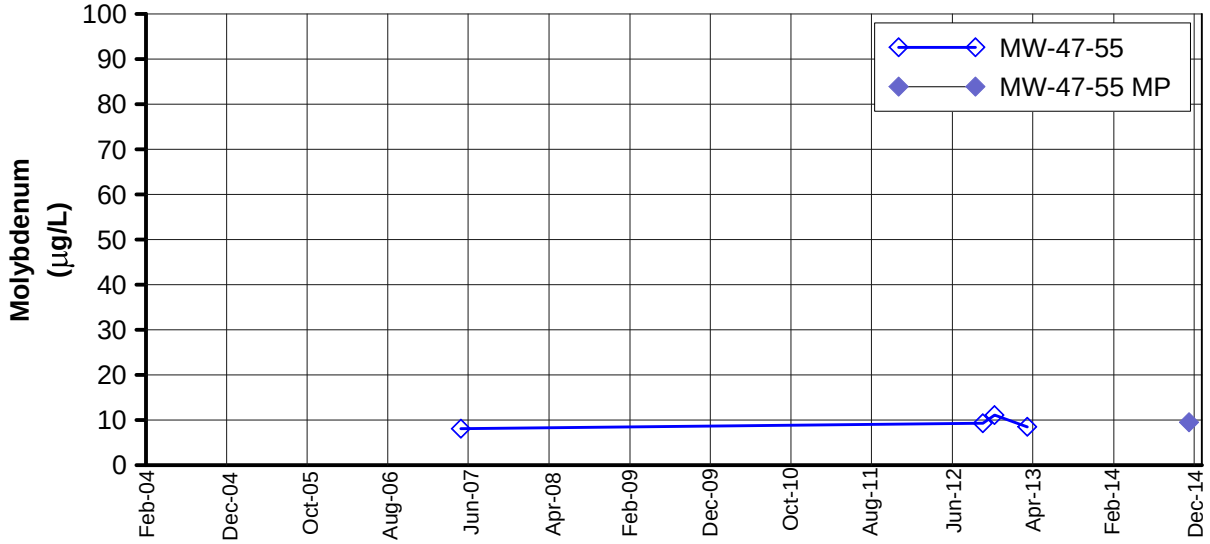
MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

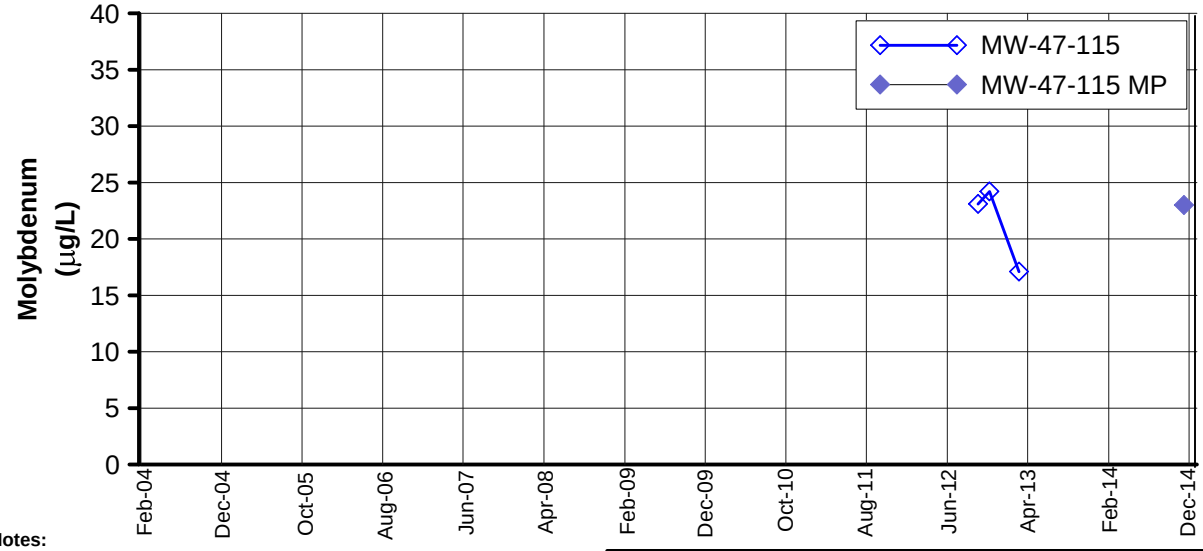
FIGURE C-29
MOLYBDENUM
IN MW-44 CLUSTER

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





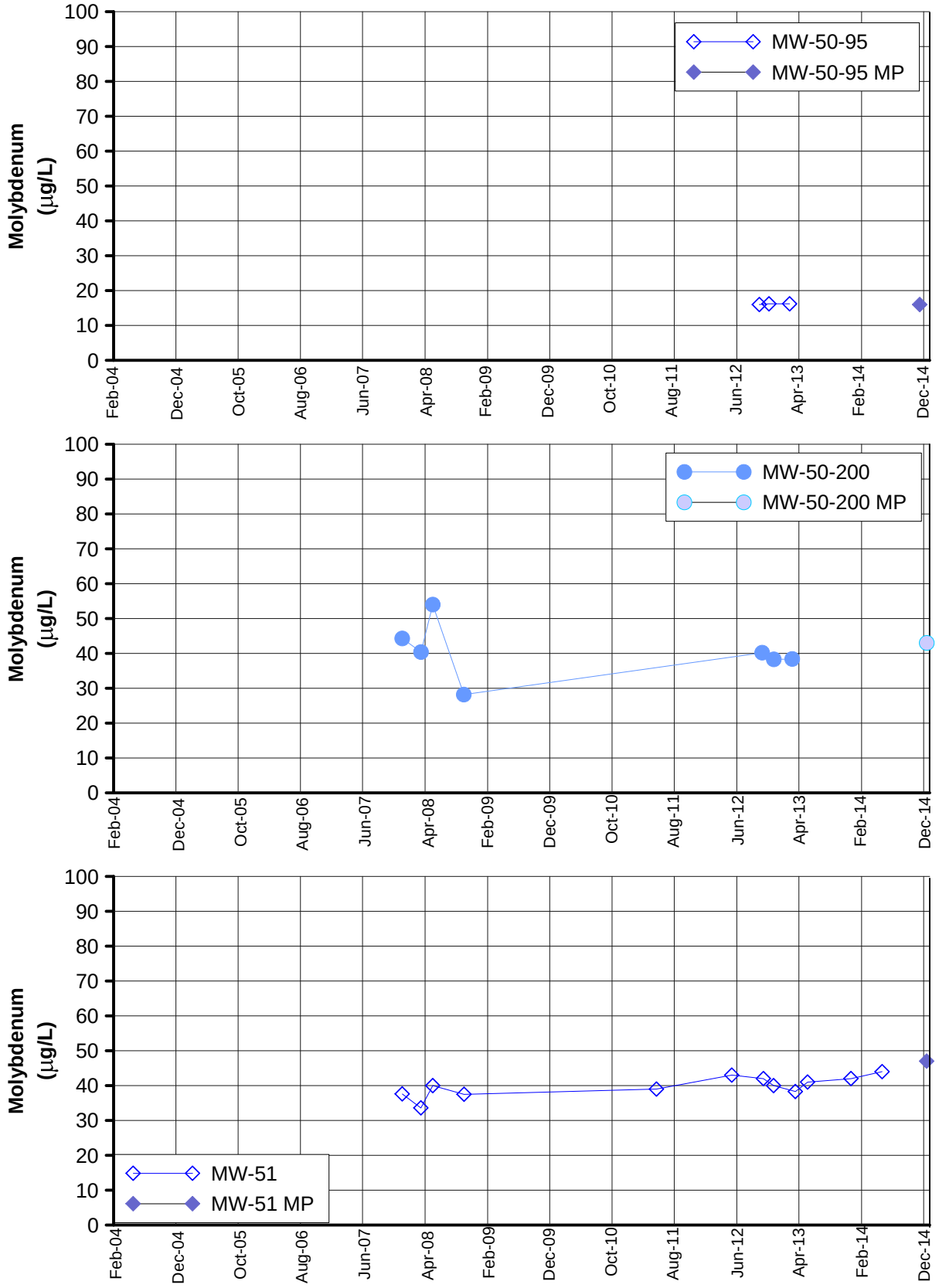


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-30
MOLYBDENUM
IN MW-46 AND MW-47 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

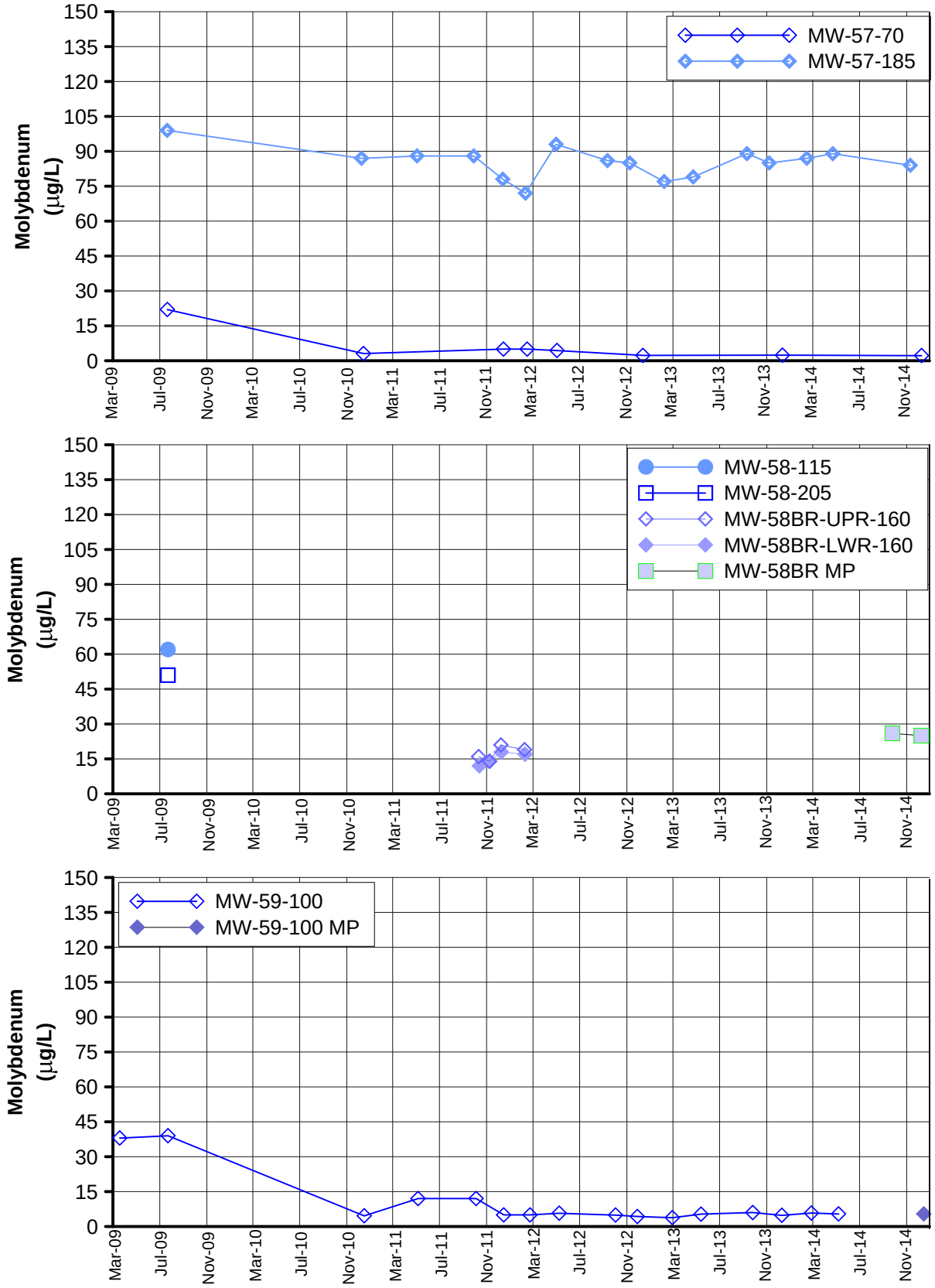


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-31
MOLYBDENUM
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

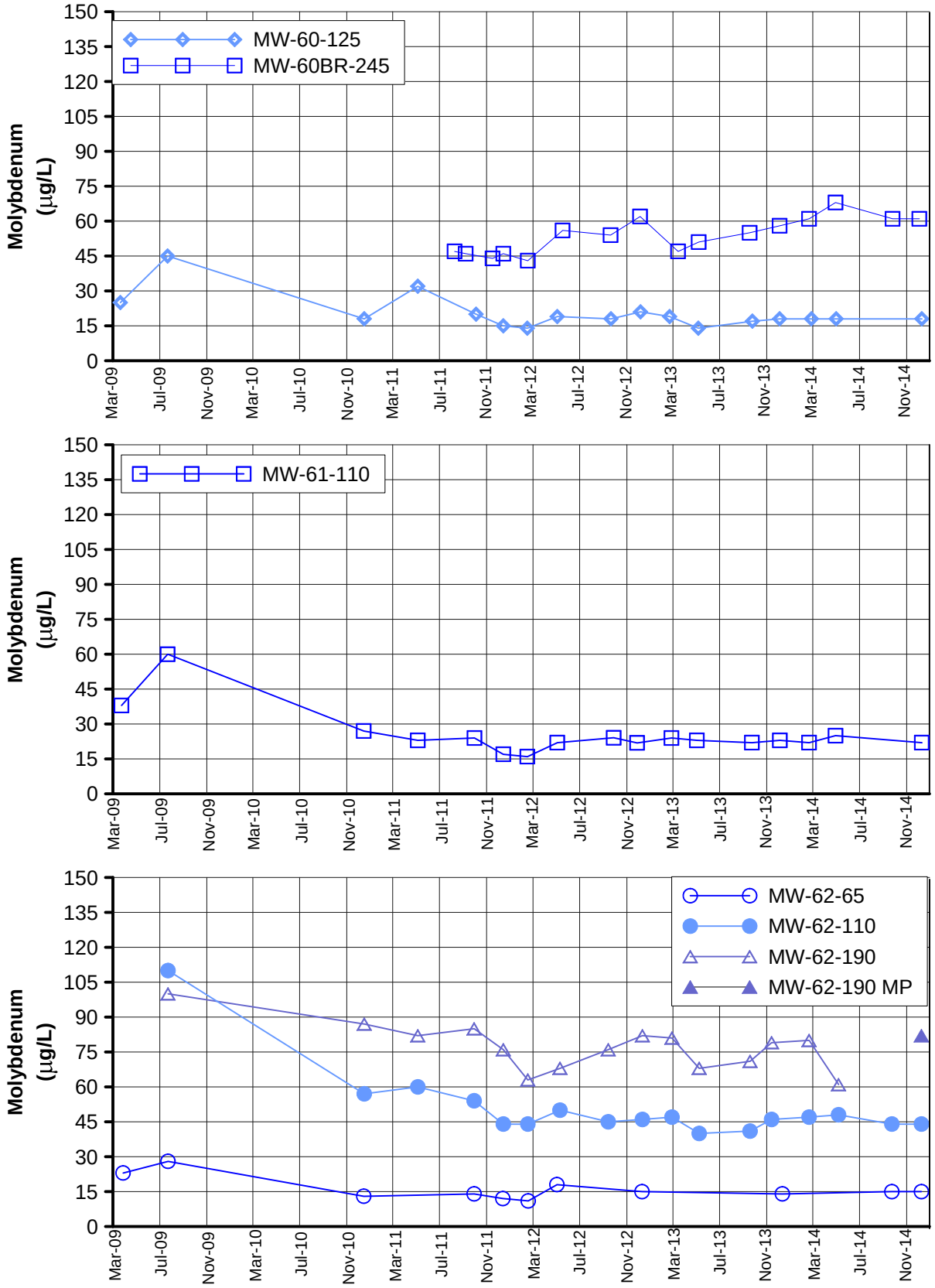


Note:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-32
MOLYBDENUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

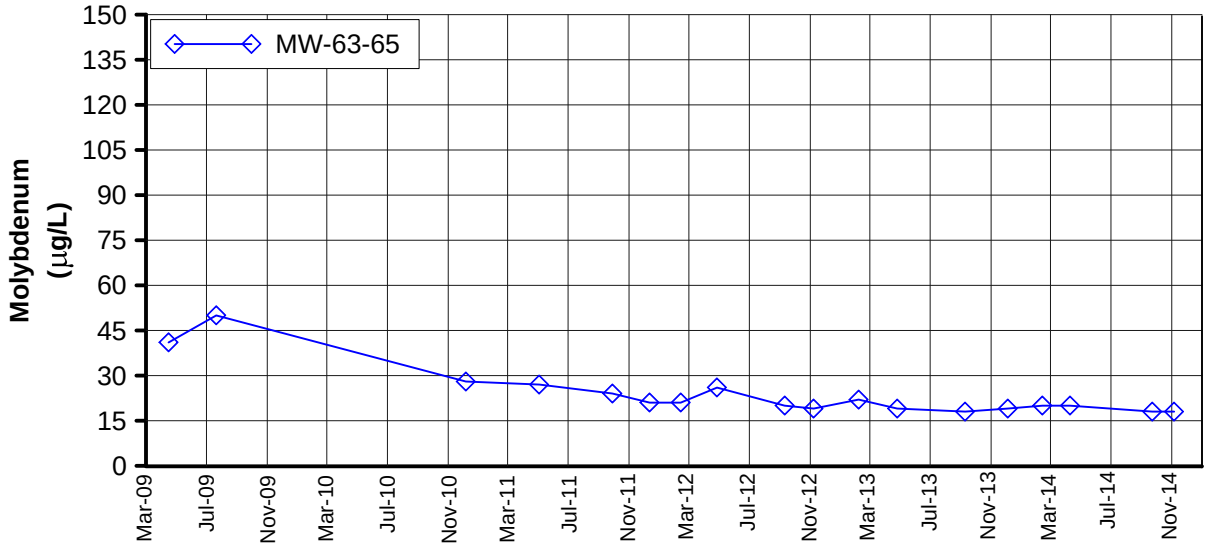


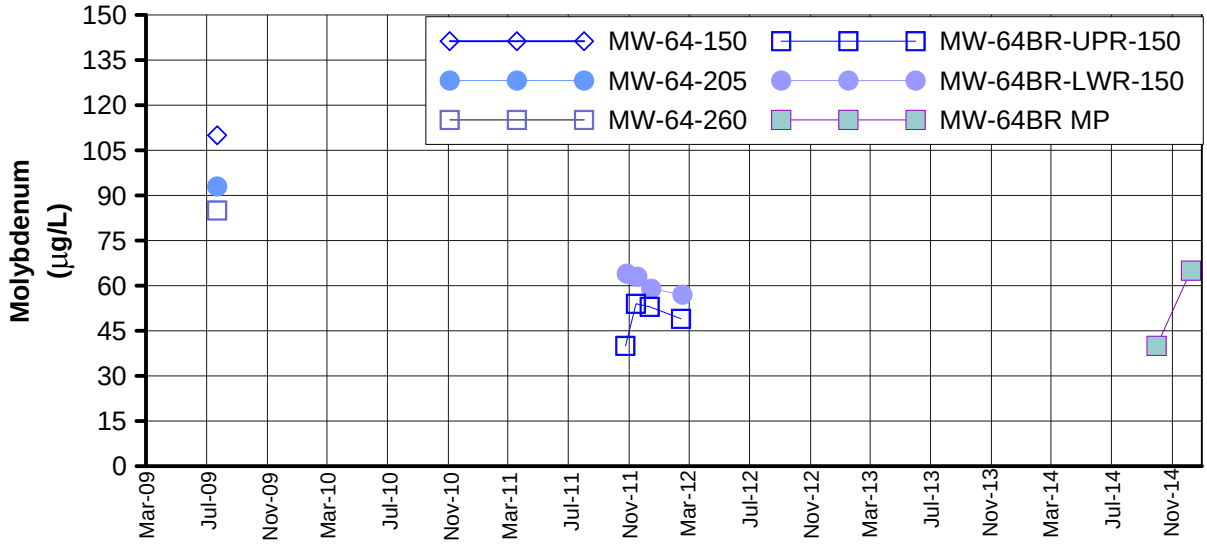
Notes:

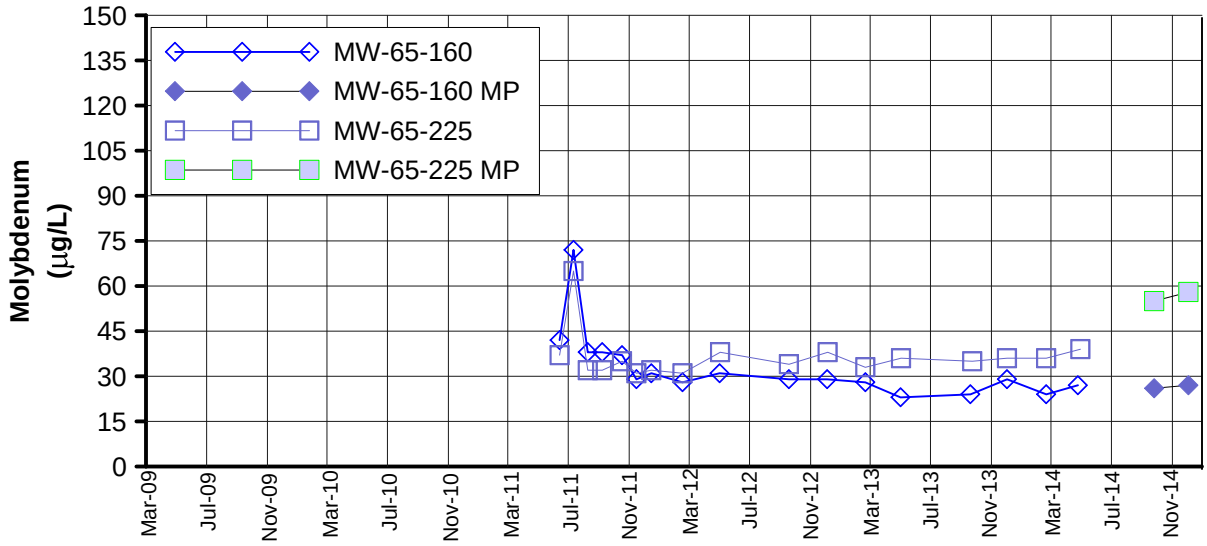
MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-33
MOLYBDENUM IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





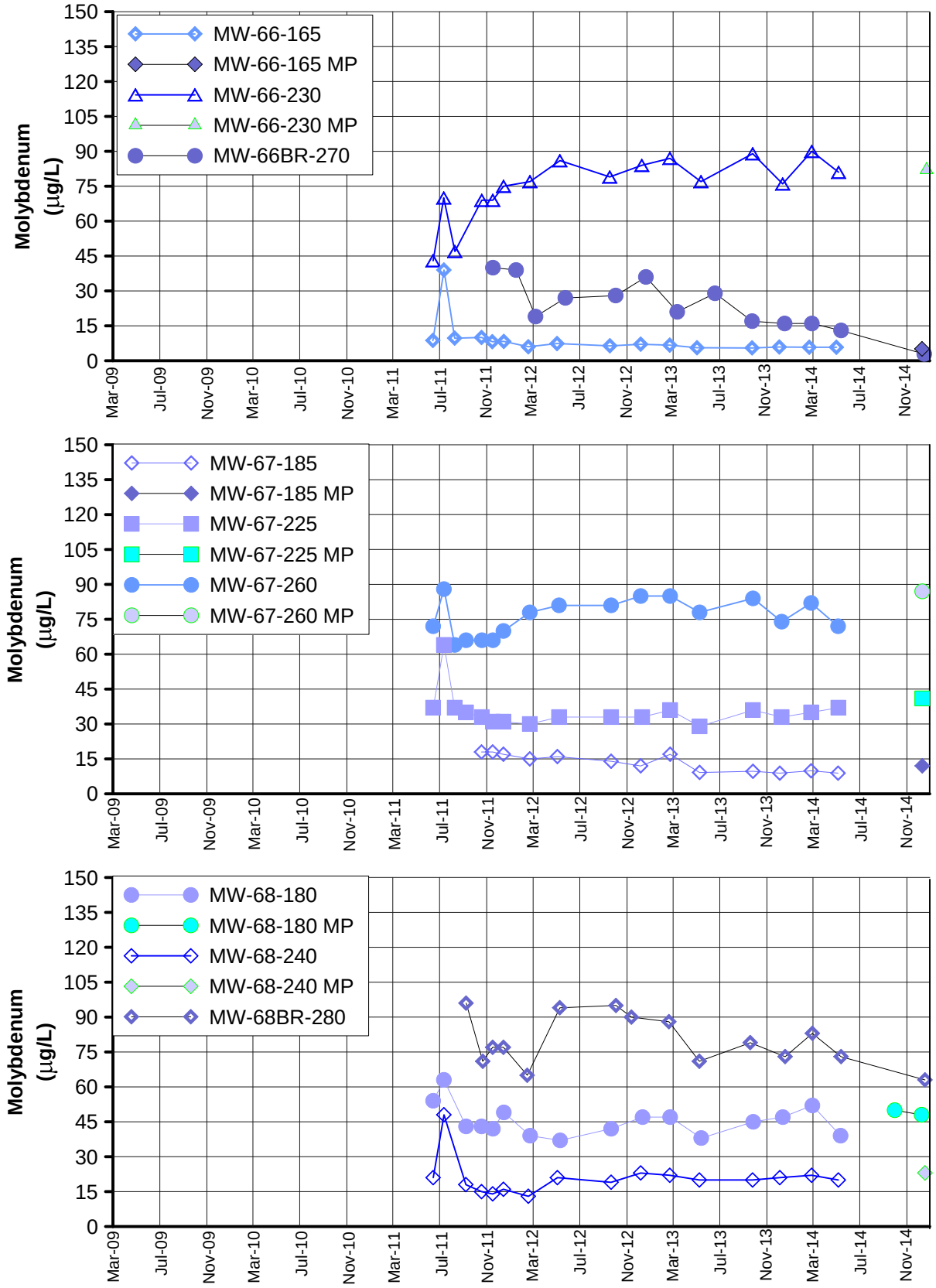


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-34
MOLYBDENUM
IN MW-63-65, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

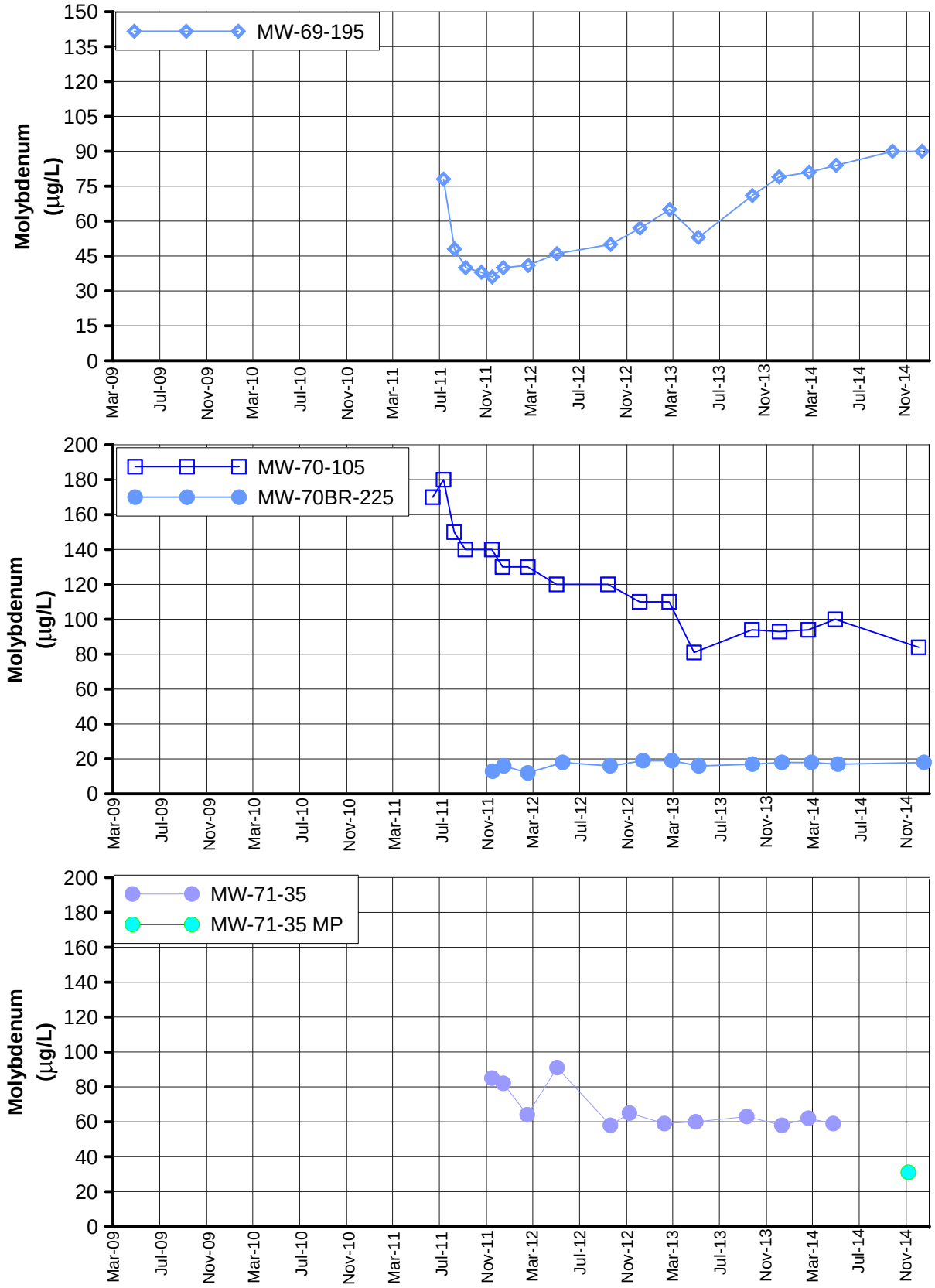


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-35
MOLYBDENUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-36
MOLYBDENUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-35
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

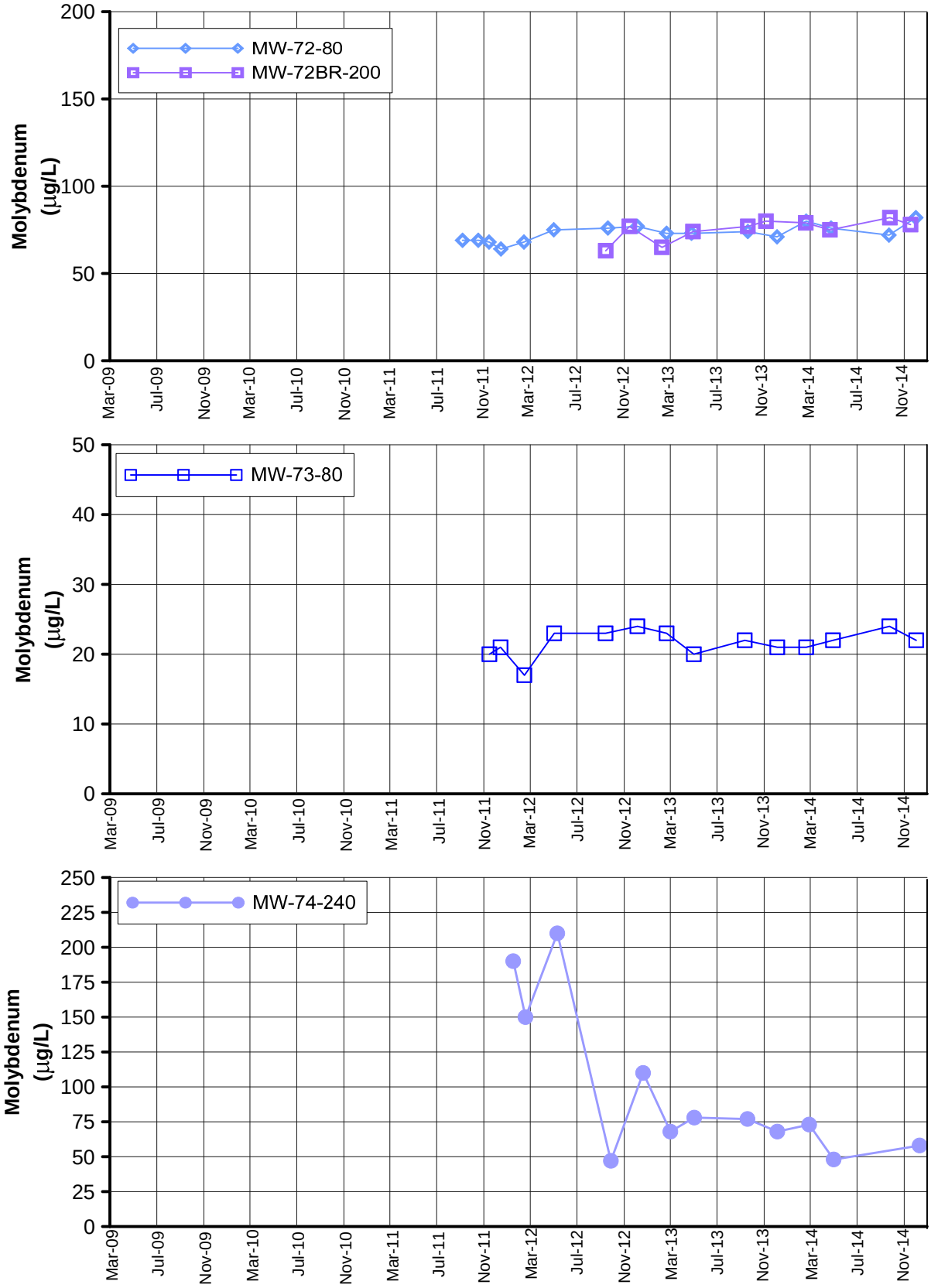
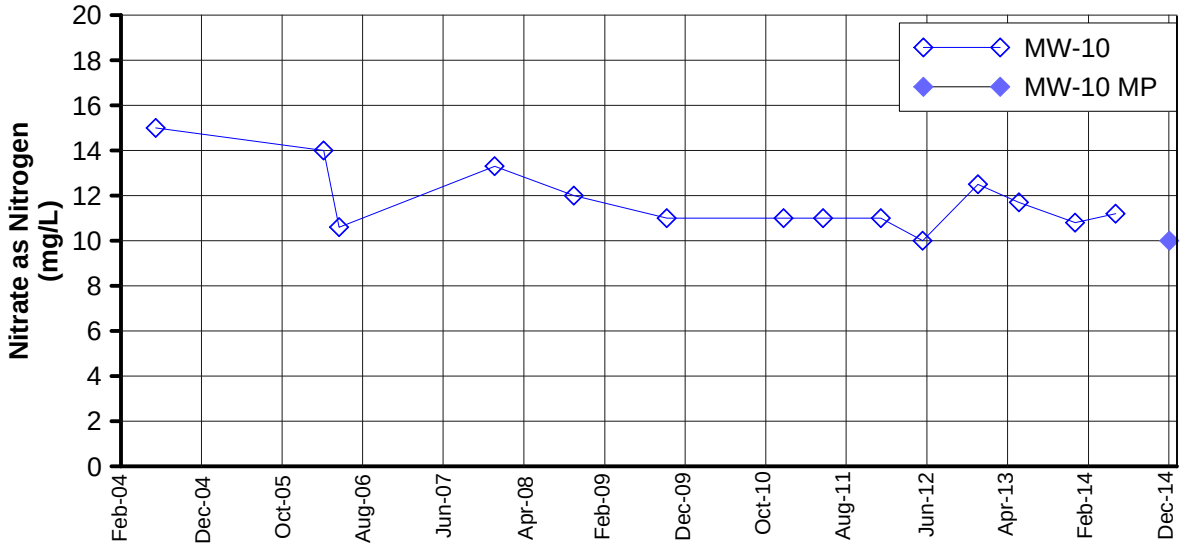
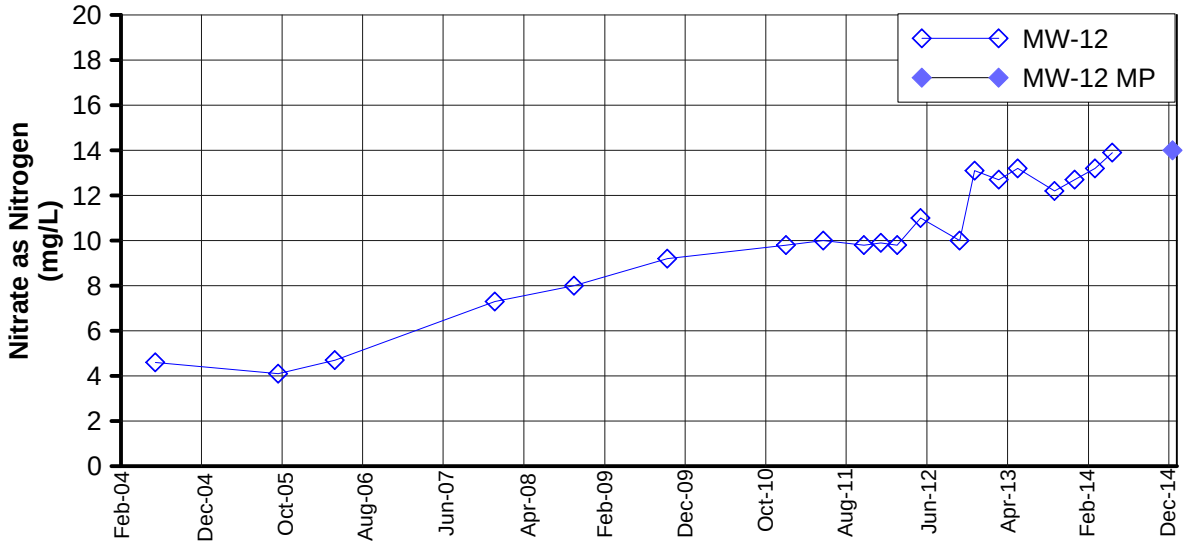
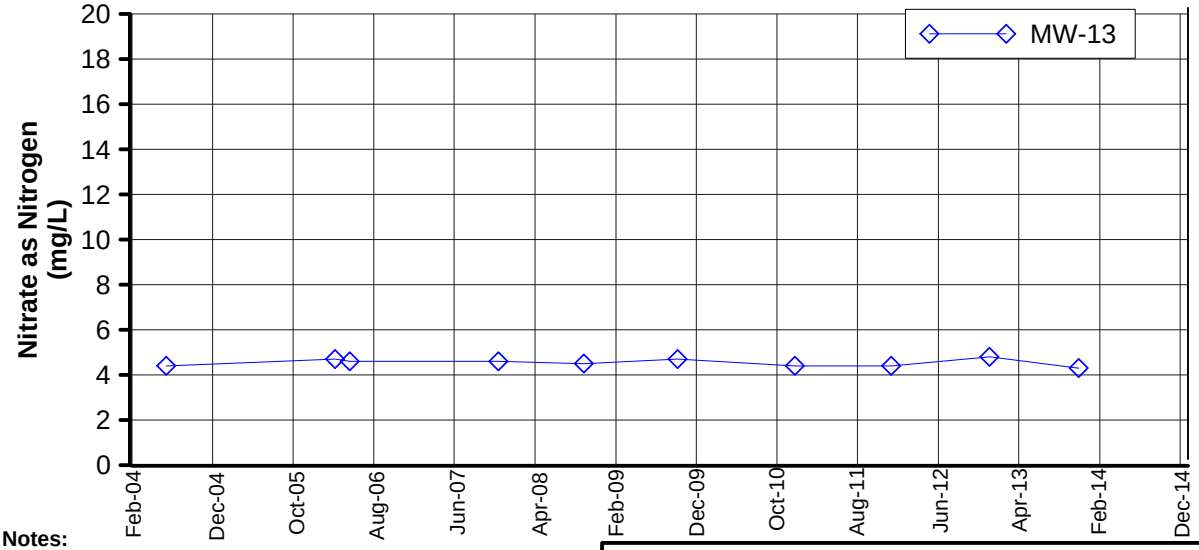


FIGURE C-37
MOLYBDENUM
IN MW-72 CLUSTER, MW-73-80, AND MW-74-240
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





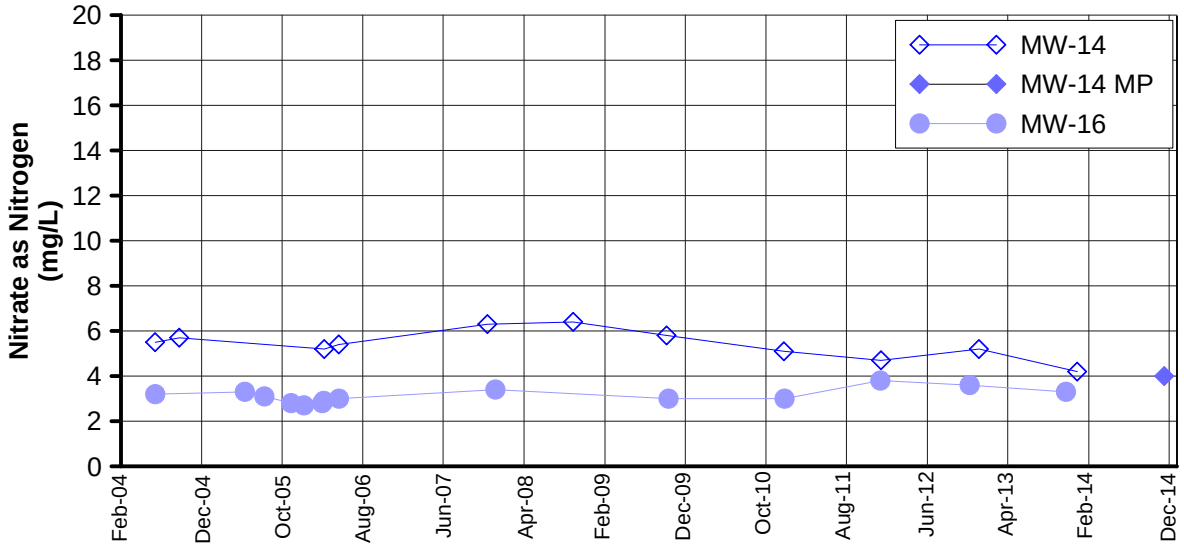


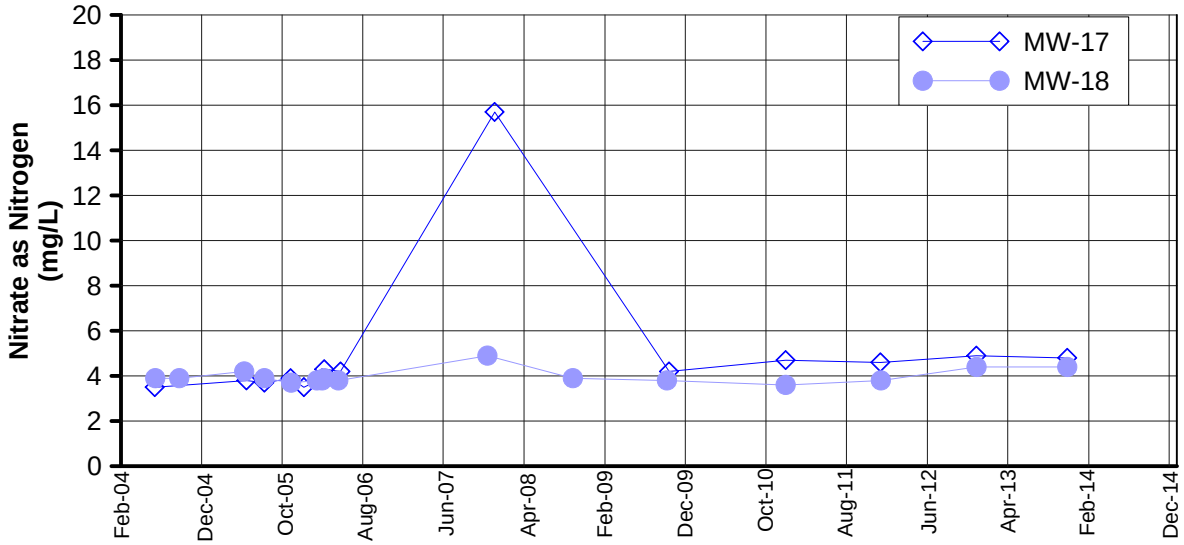
Notes:

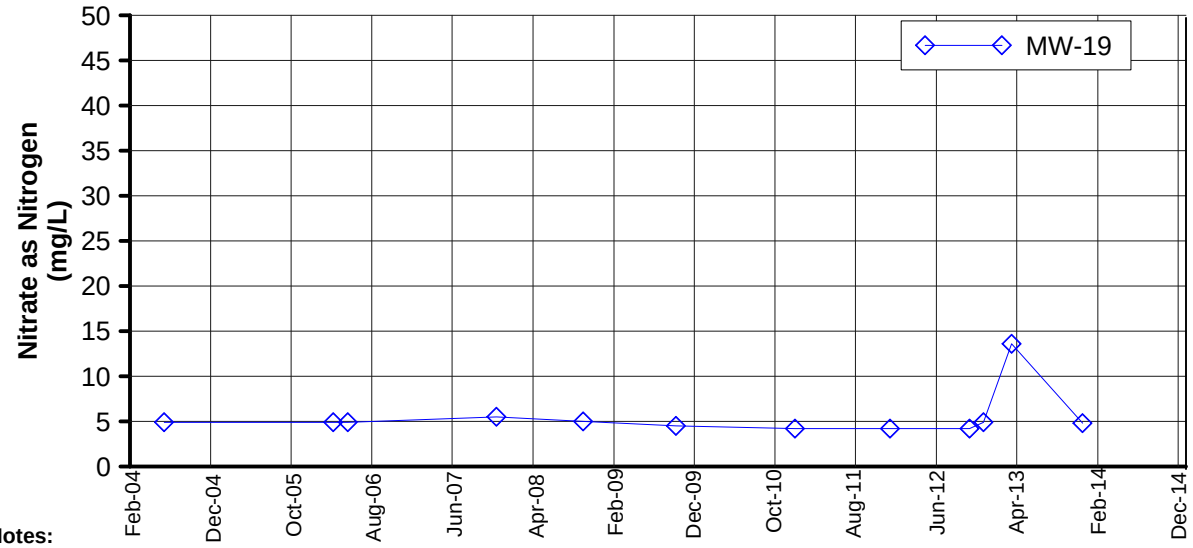
1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-38
NITRATE as NITROGEN
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





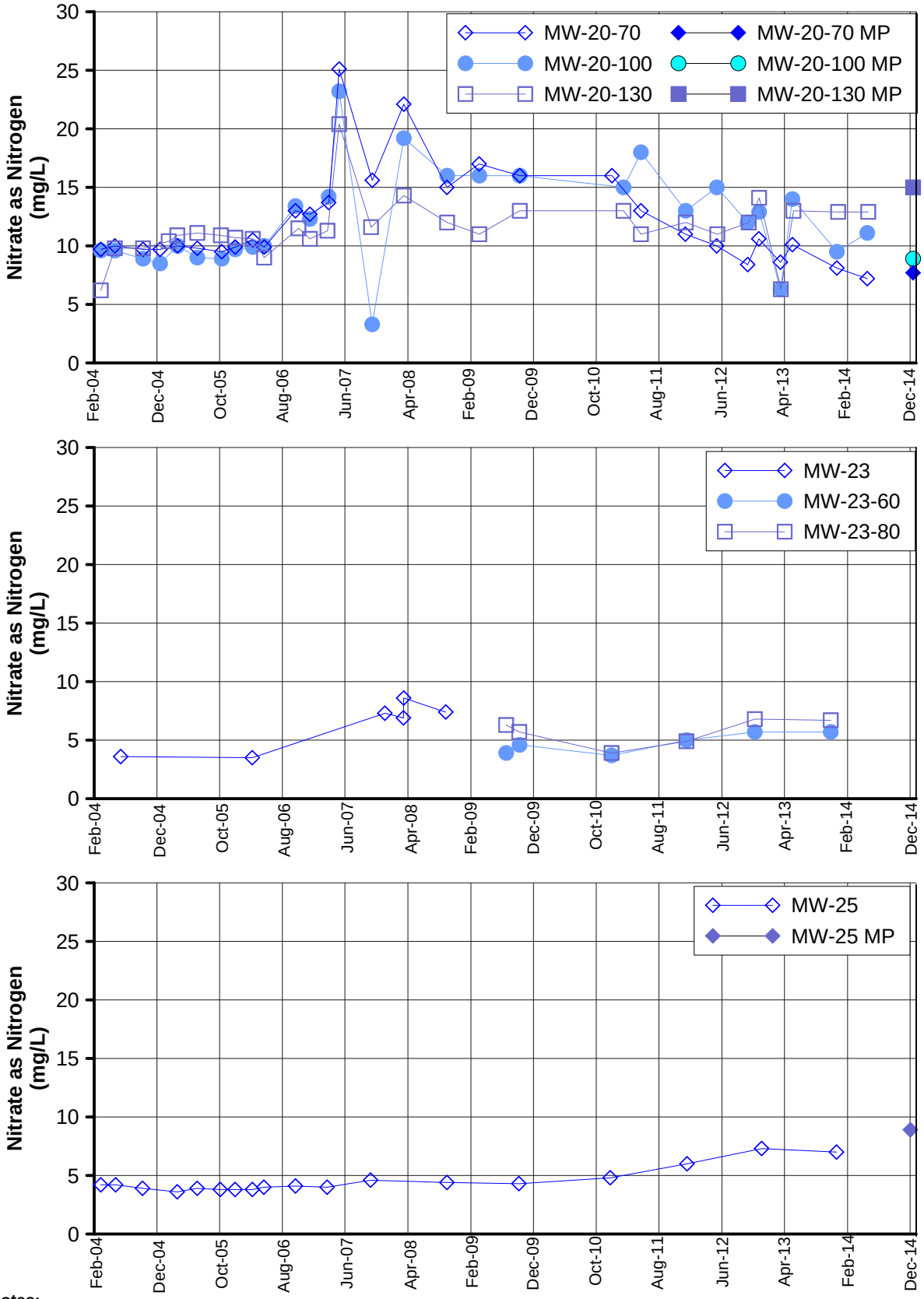


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-39
NITRATE as NITROGEN
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

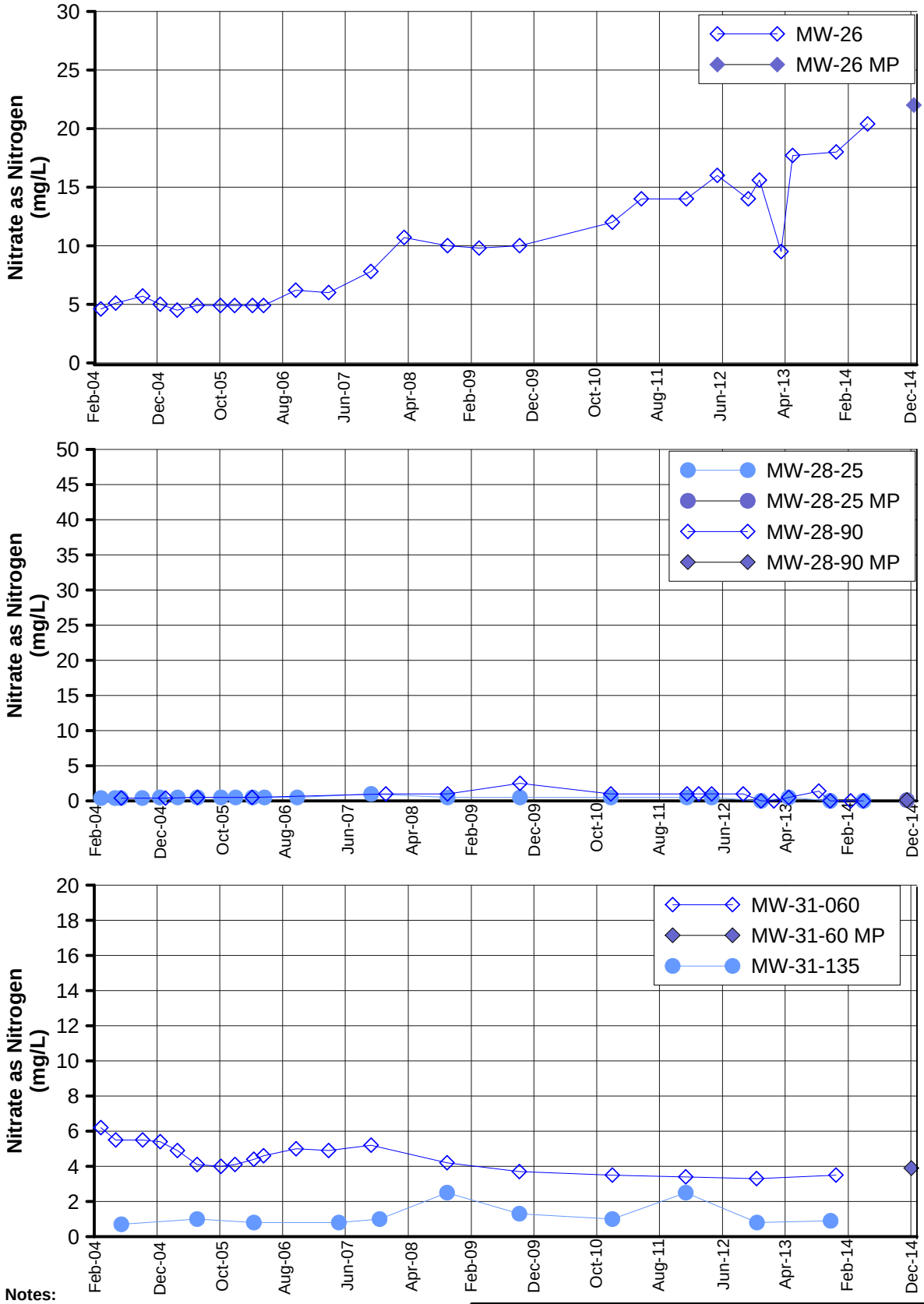


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-40
NITRATE as NITROGEN
IN MW-20, MW-23, AND MW-25 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

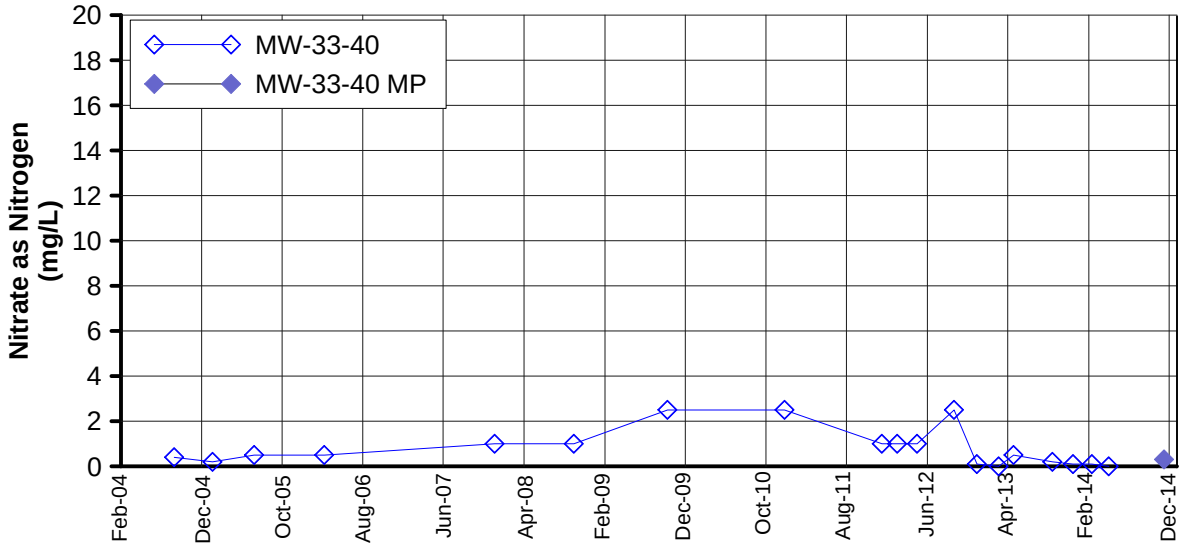


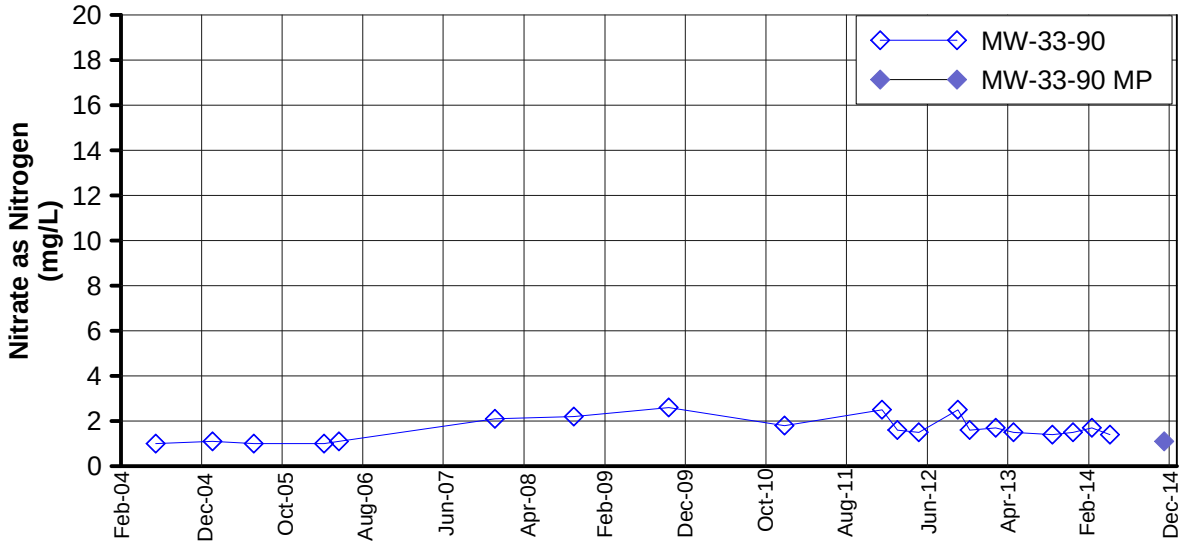
Notes:

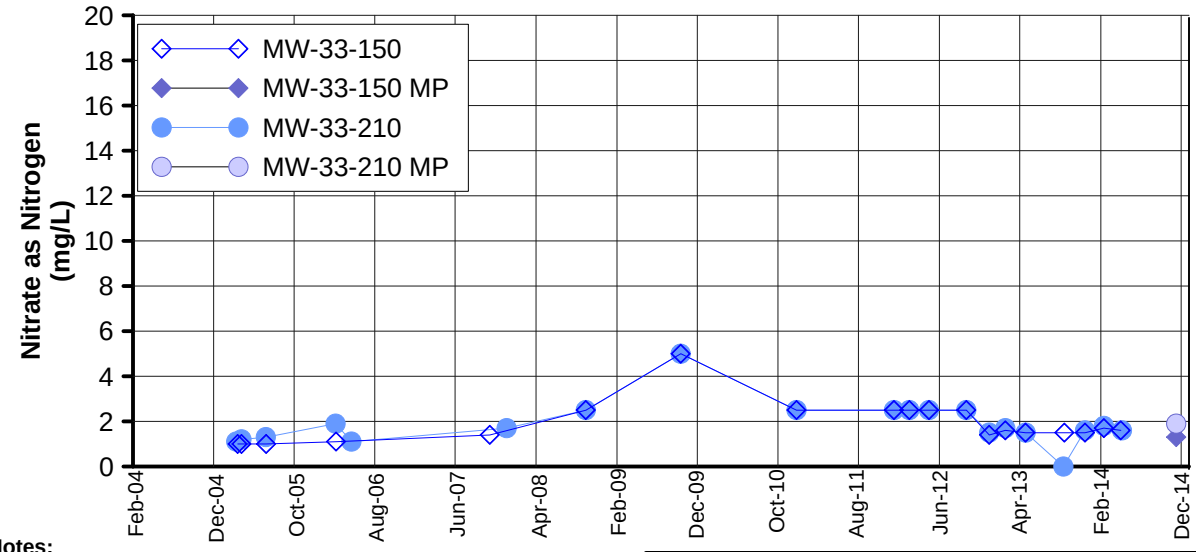
1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method

FIGURE C-41
NITRATE as NITROGEN
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL







Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-42
NITRATE as NITROGEN
IN MW-33 CLUSTER

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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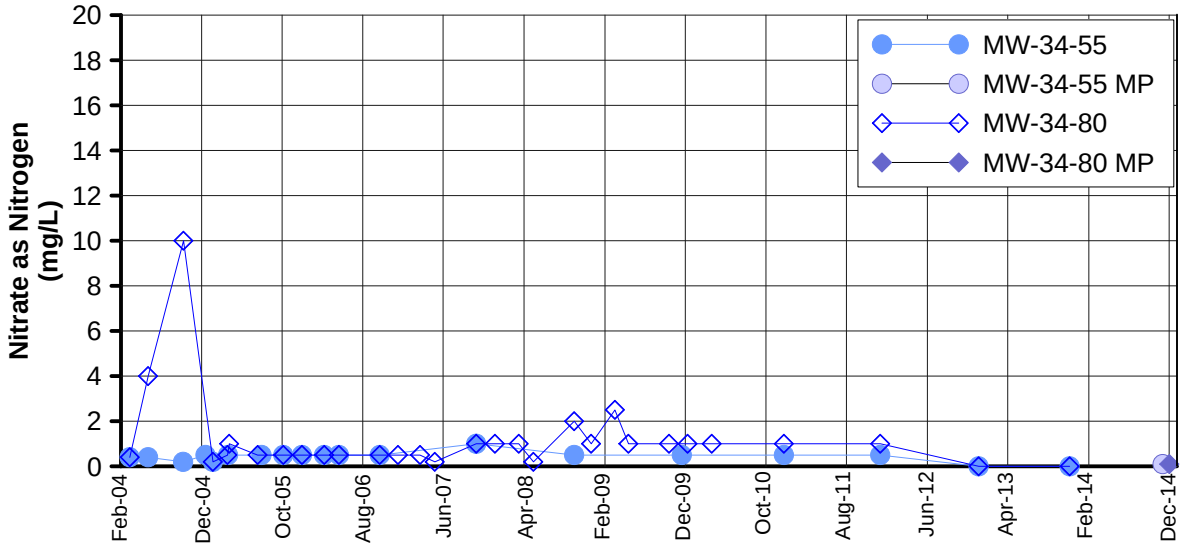
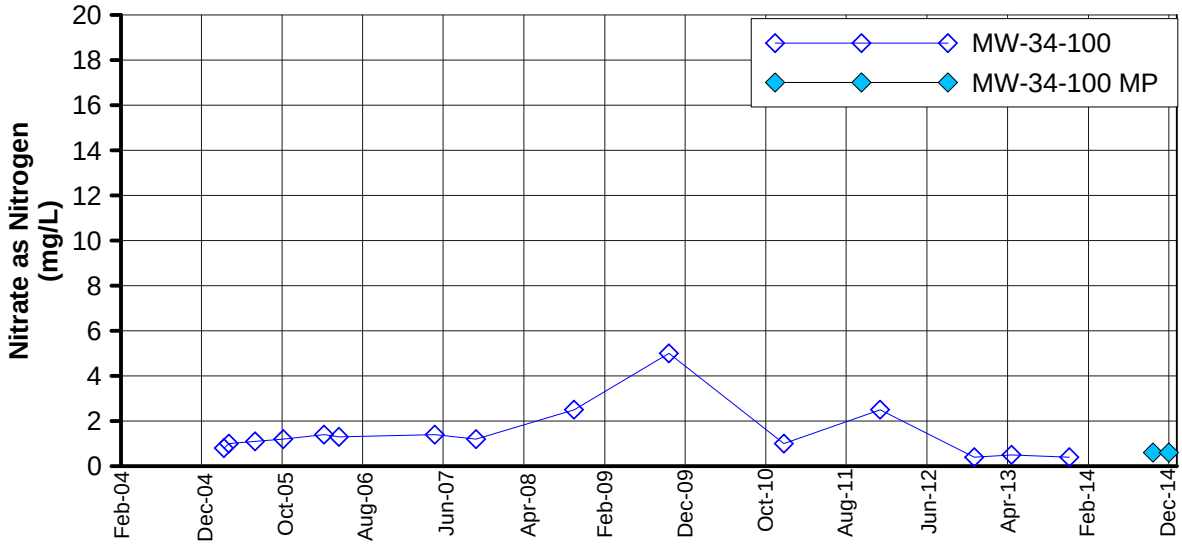
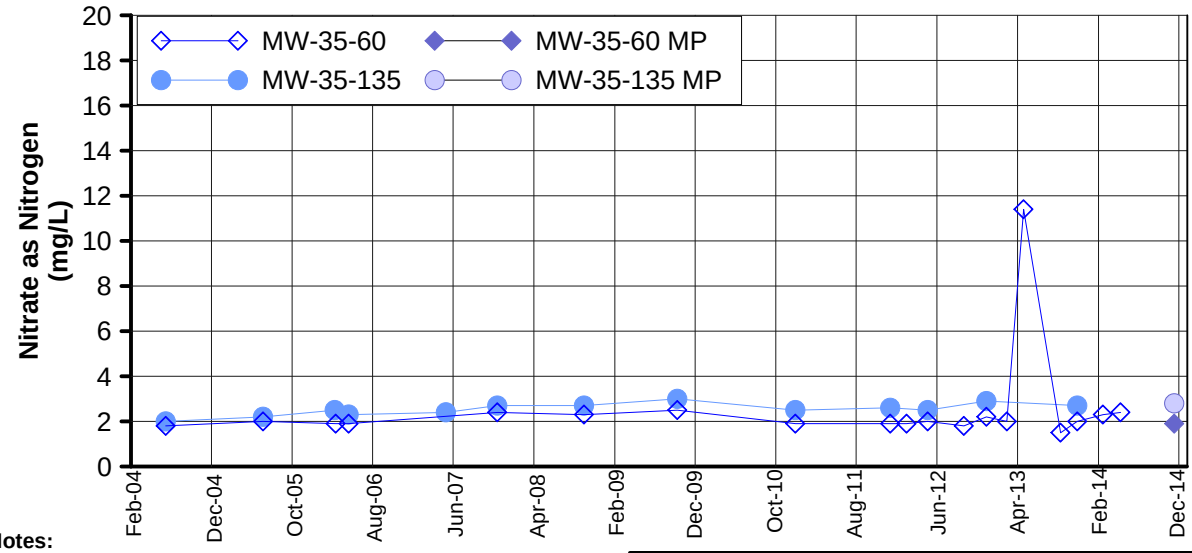




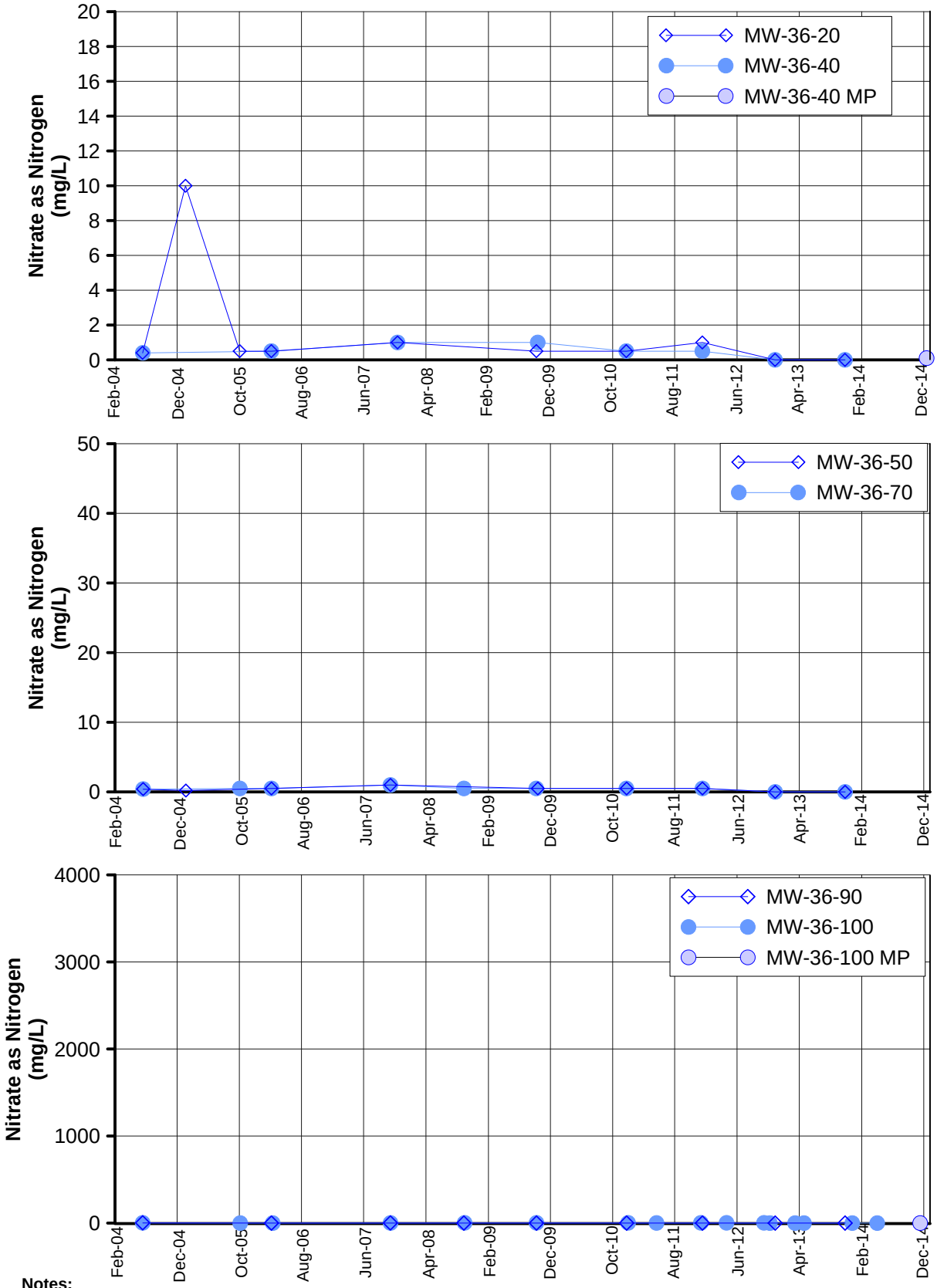


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-43
NITRATE as NITROGEN
IN MW-34 AND MW-35 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-44
NITRATE as NITROGEN
IN MW-36 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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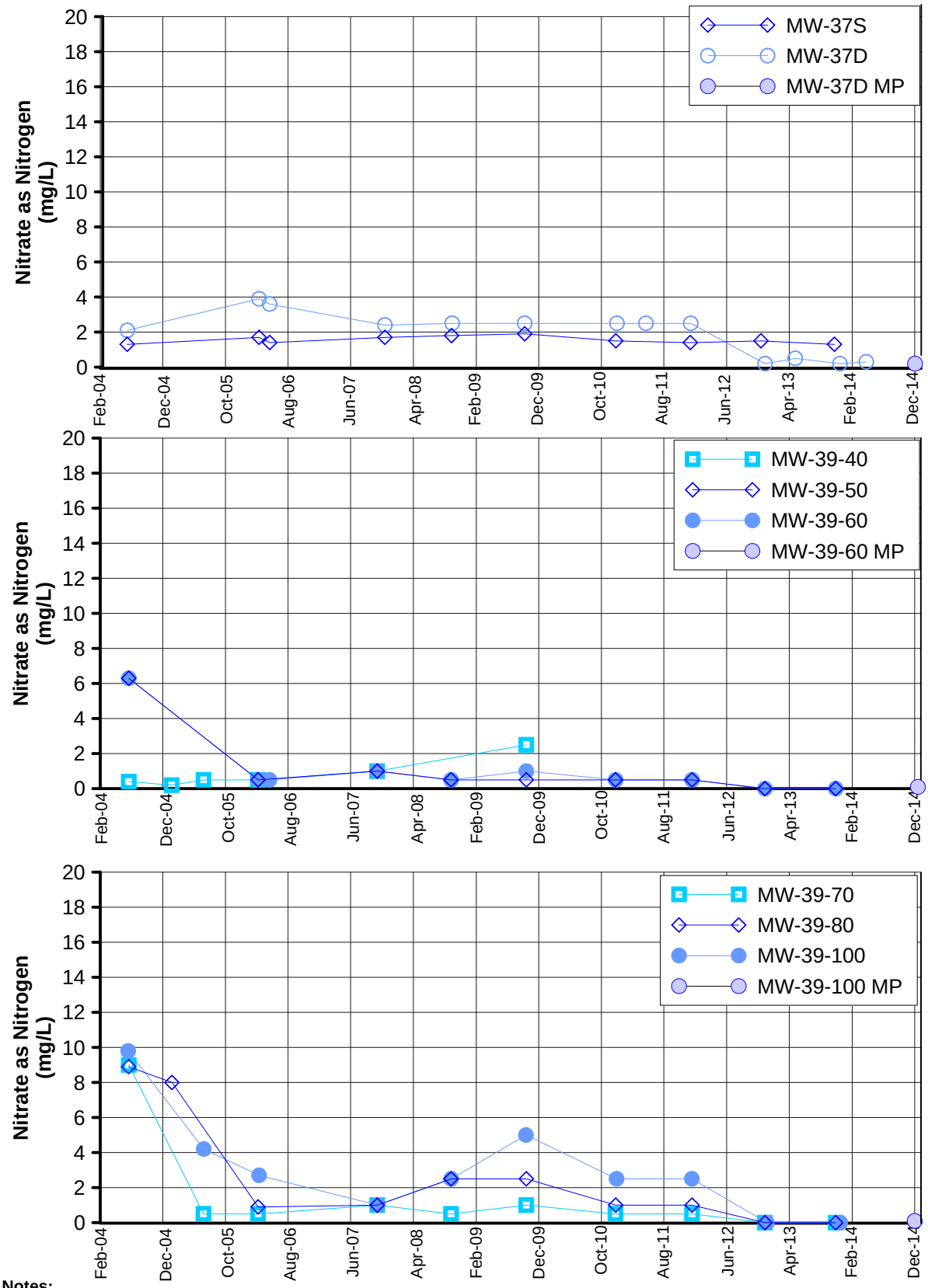
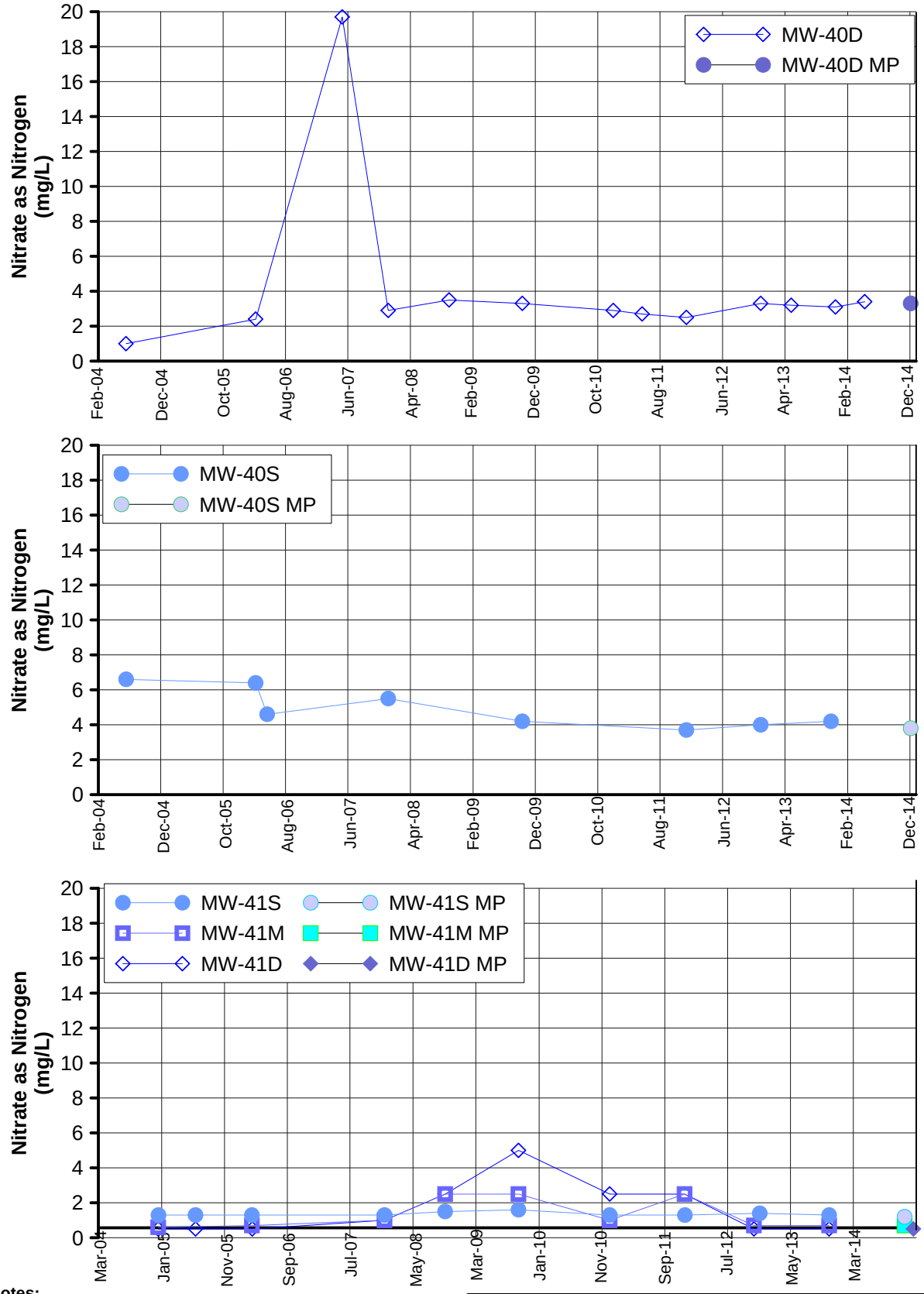


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-45
NITRATE as NITROGEN
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

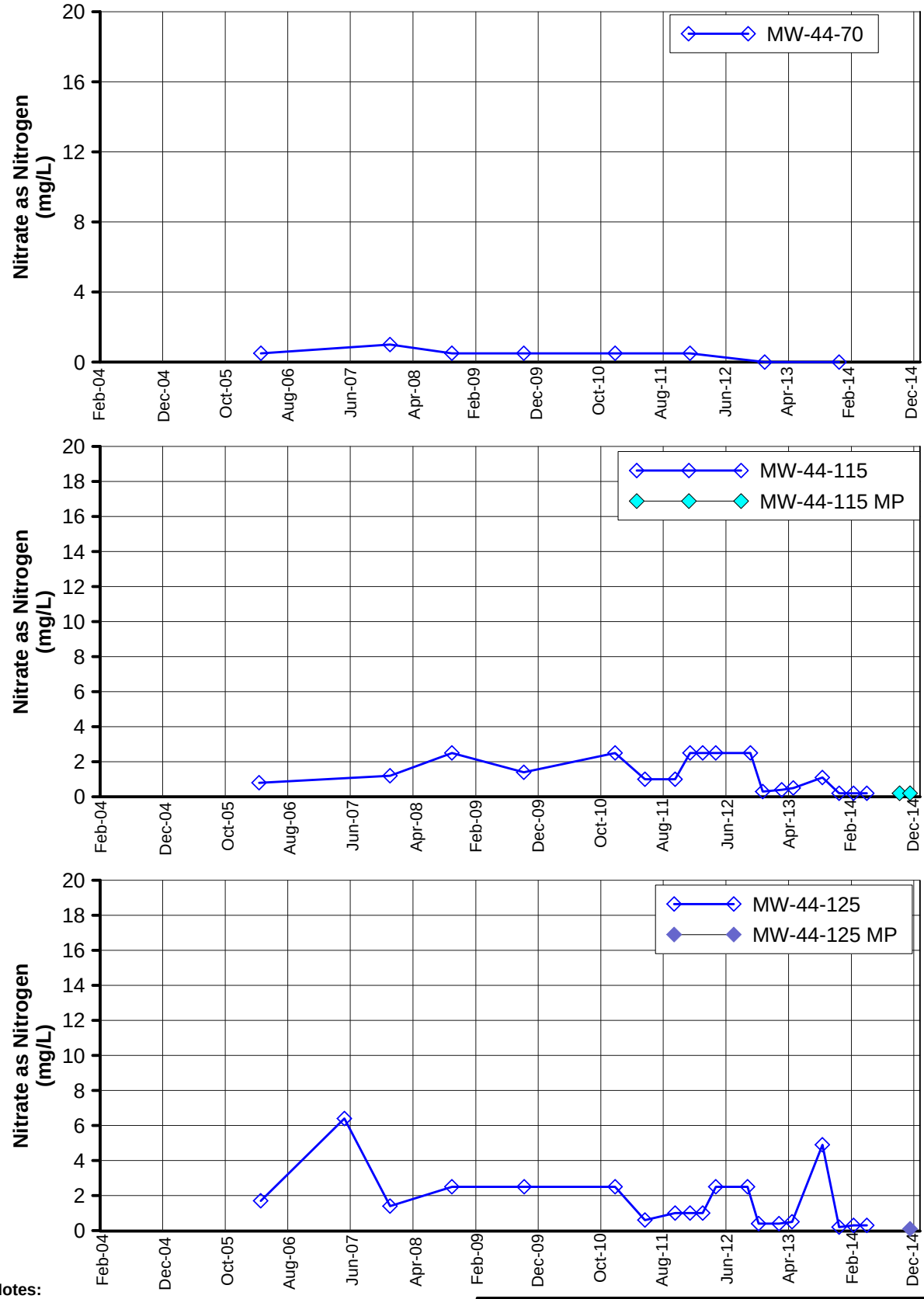


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-46
NITRATE as NITROGEN
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-47
NITRATE as NITROGEN
IN MW-44 CLUSTER

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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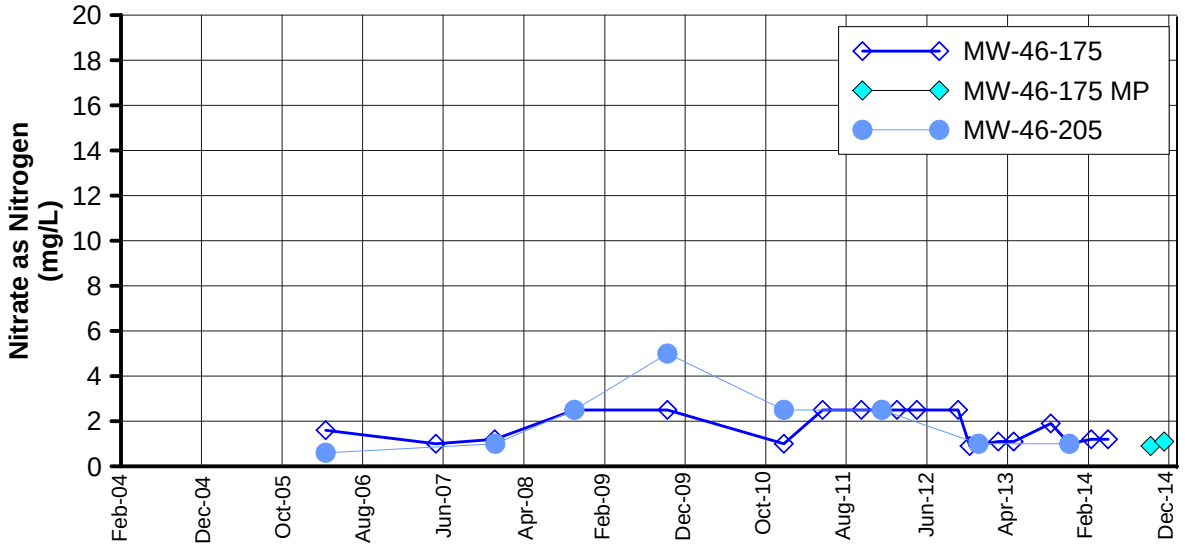

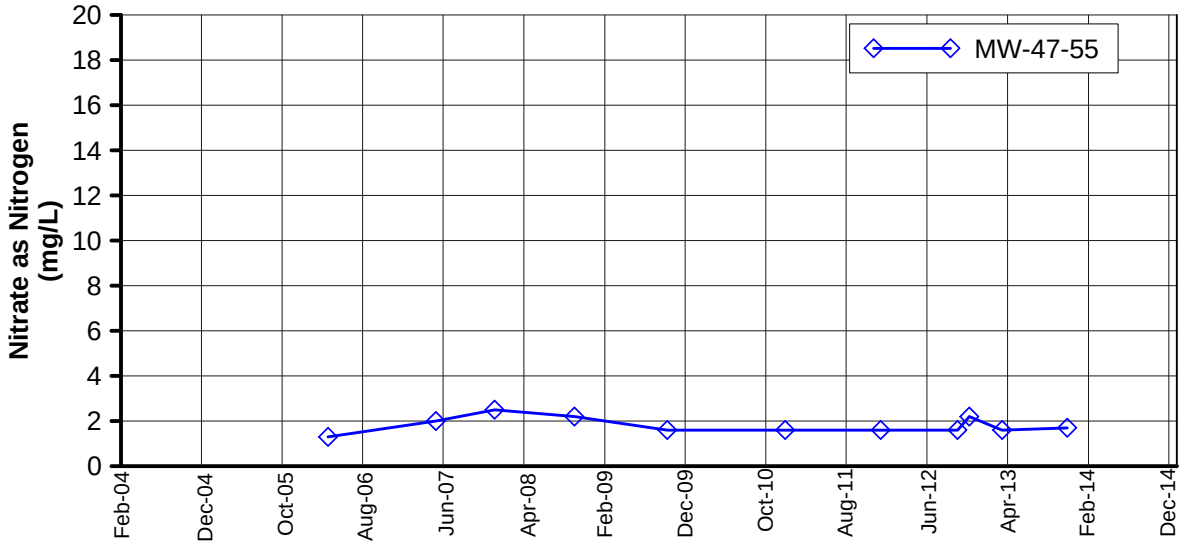

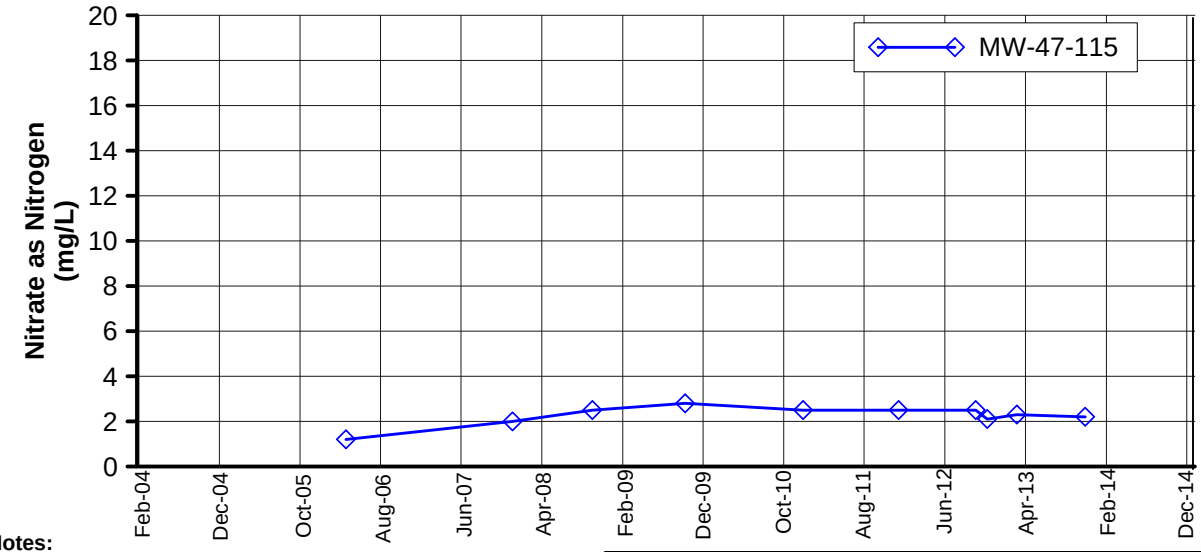

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-48
NITRATE as NITROGEN
IN MW-46 AND MW-47 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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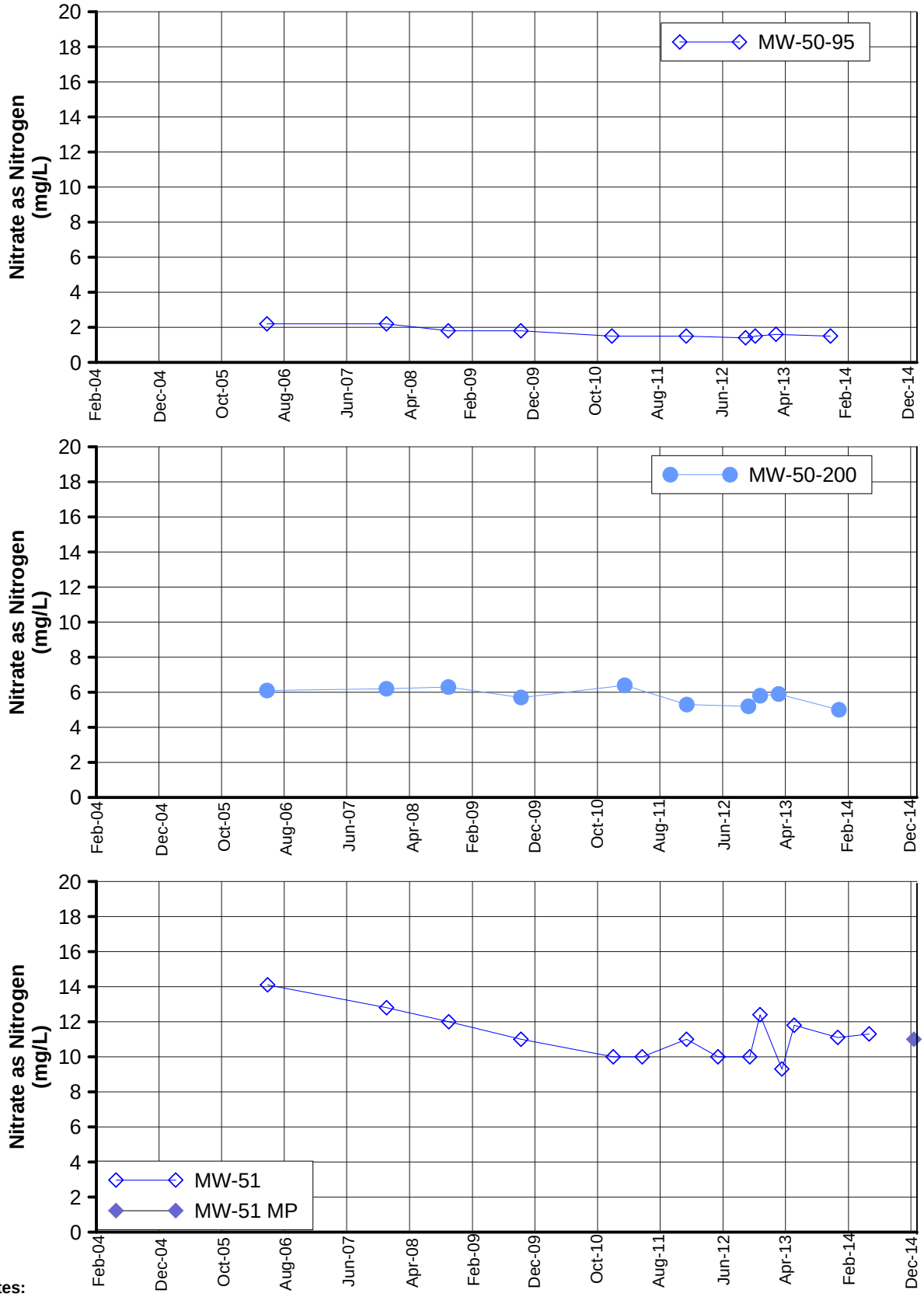

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-49
NITRATE as NITROGEN
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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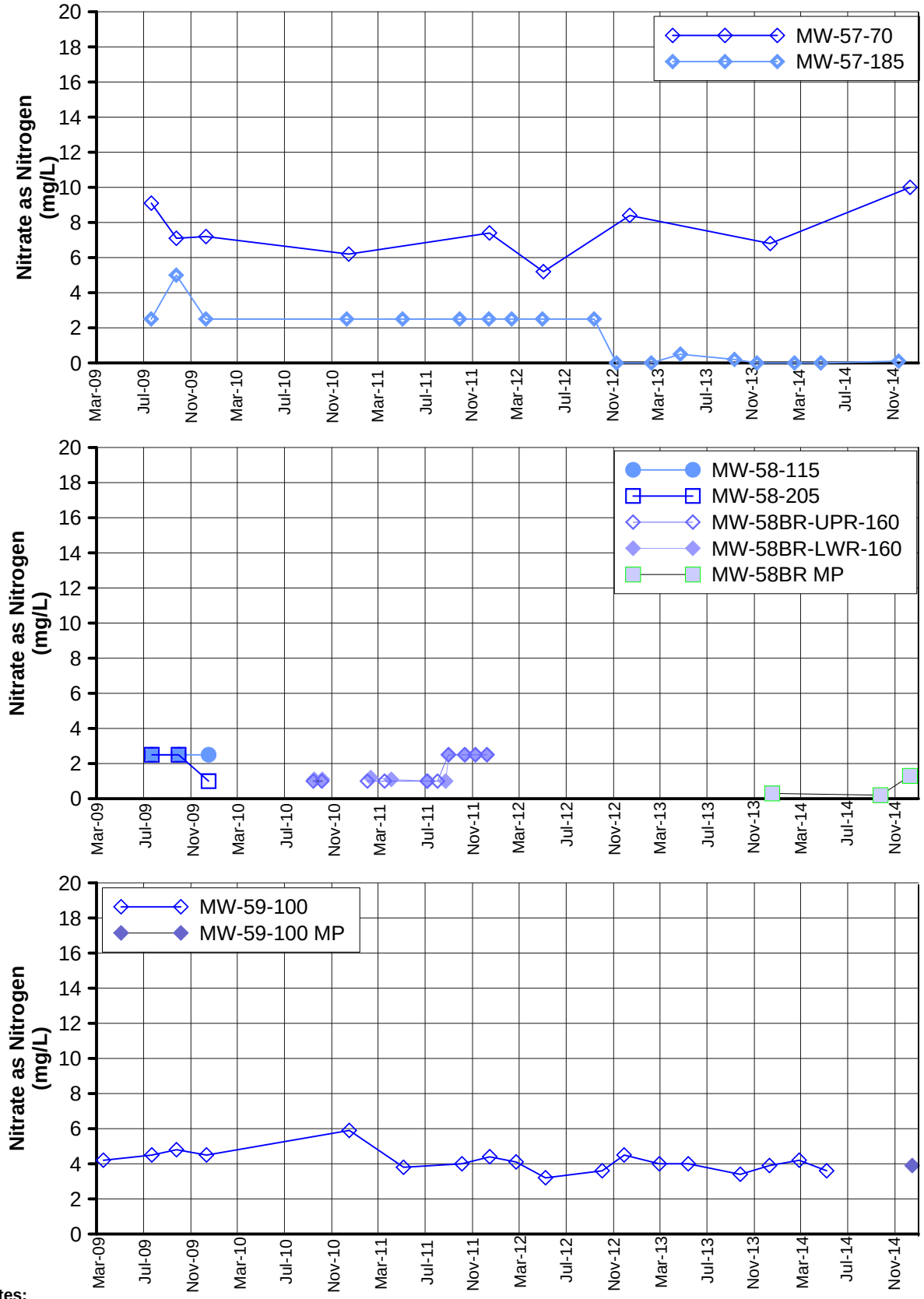

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-50
NITRATE as NITROGEN
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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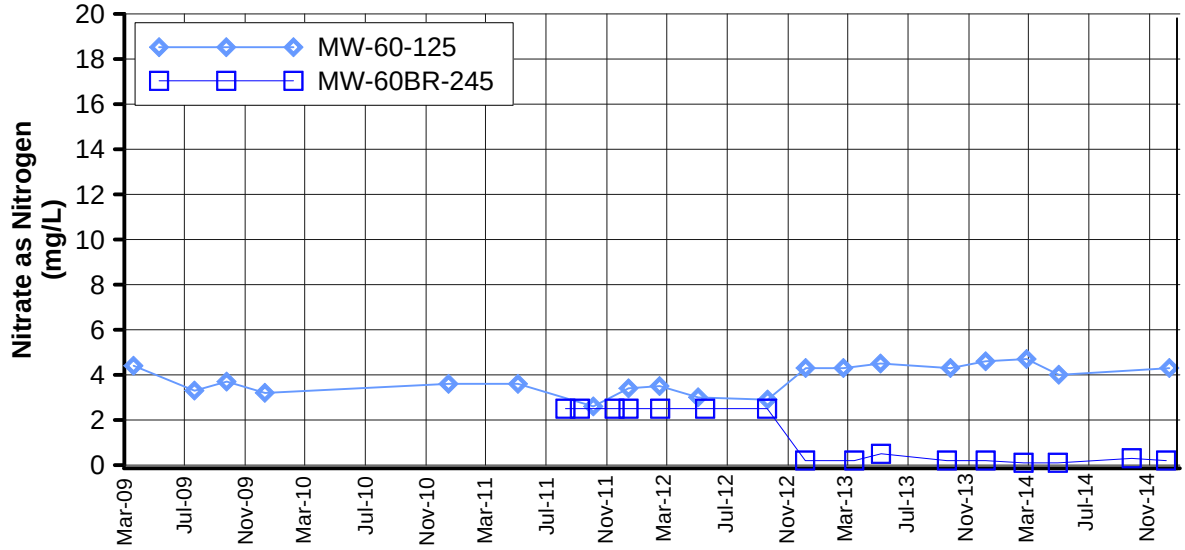

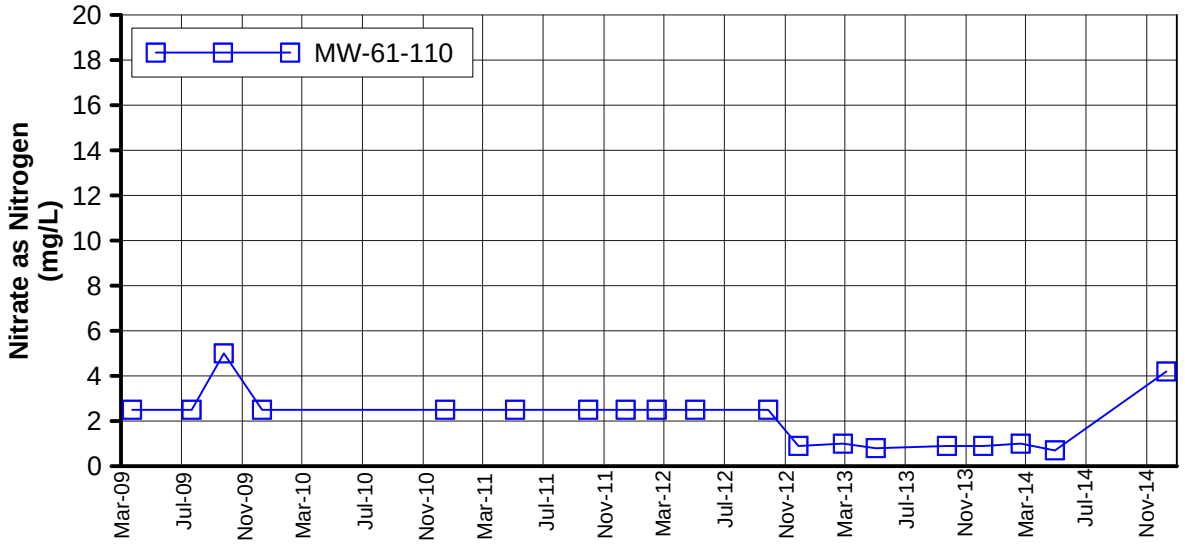

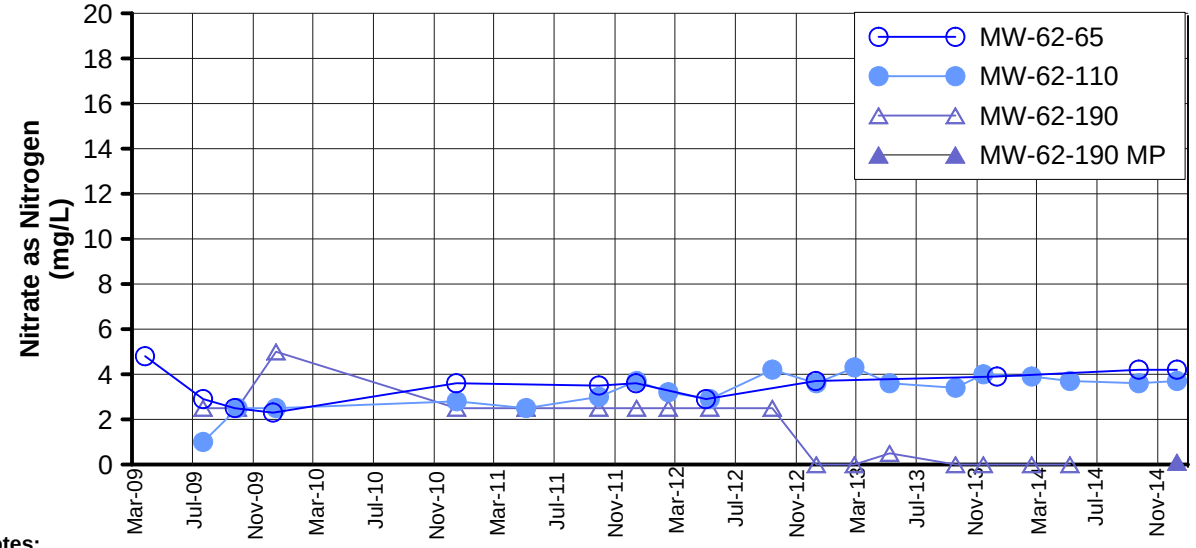

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-51
NITRATE as NITROGEN IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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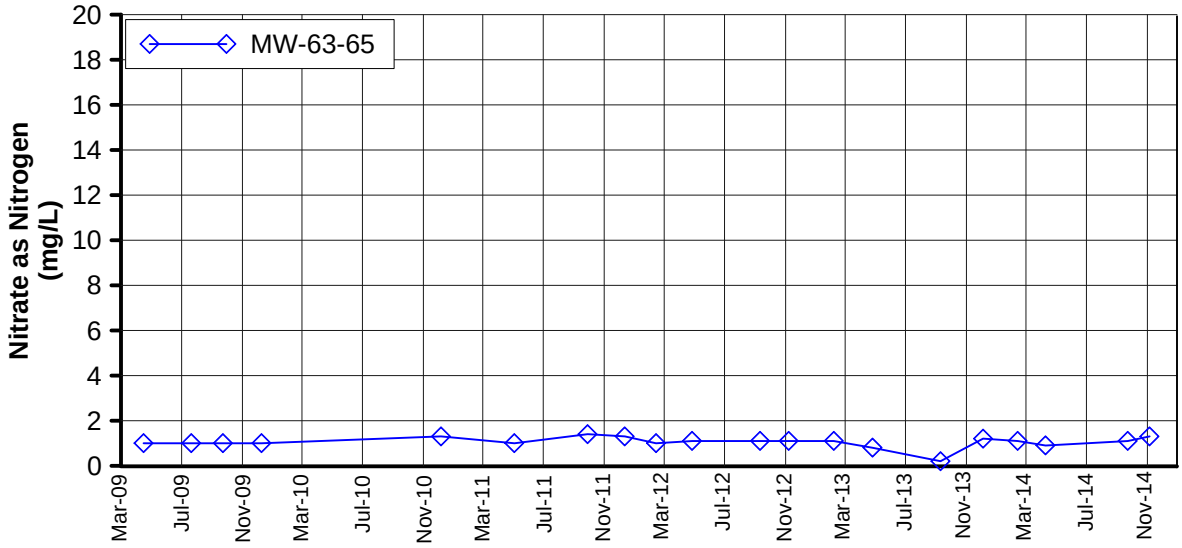

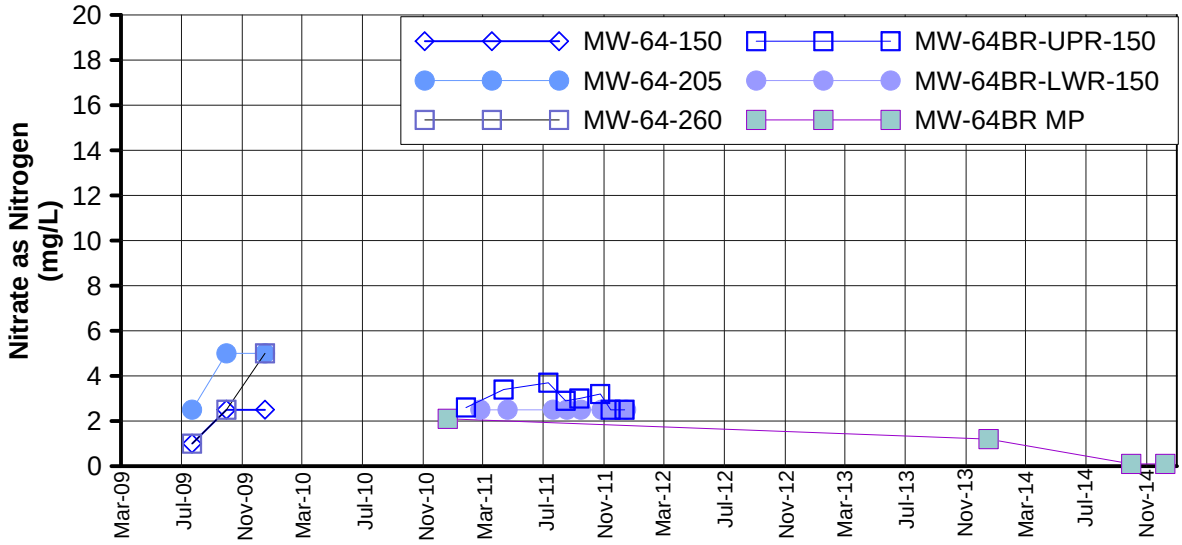

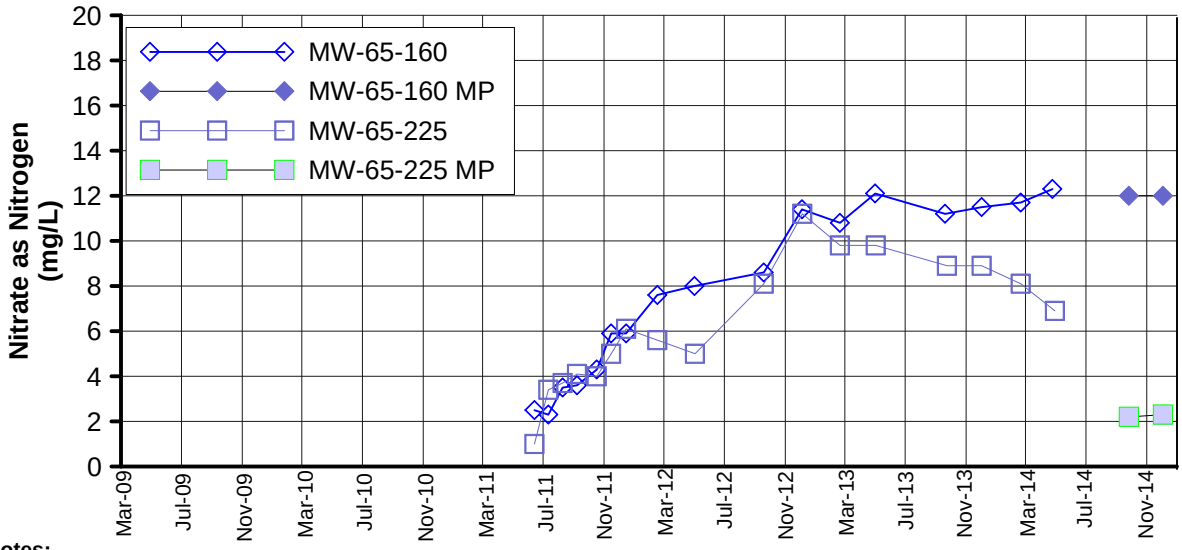

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-52
NITRATE as NITROGEN
IN MW-63-65, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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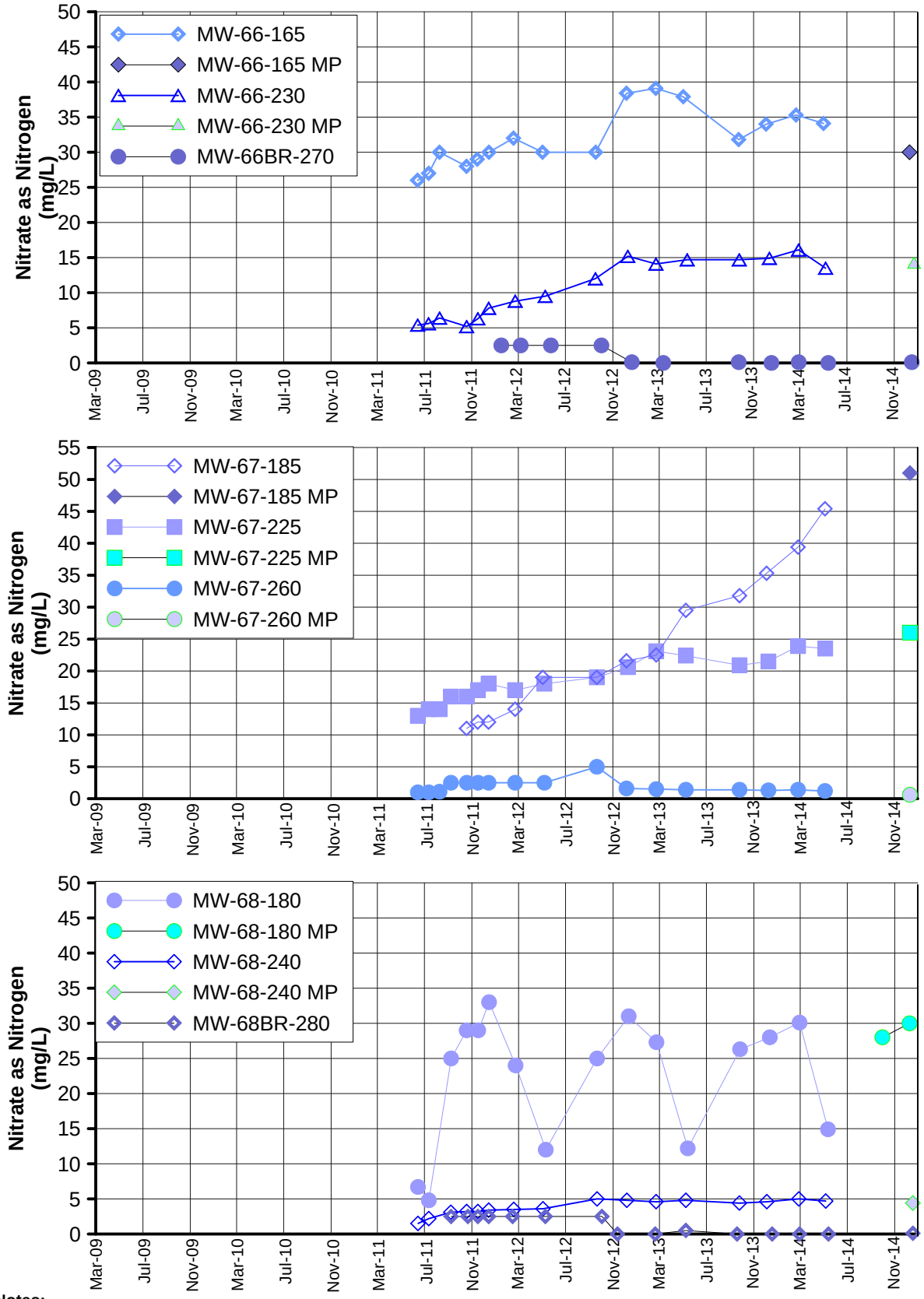

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-53
NITRATE as NITROGEN
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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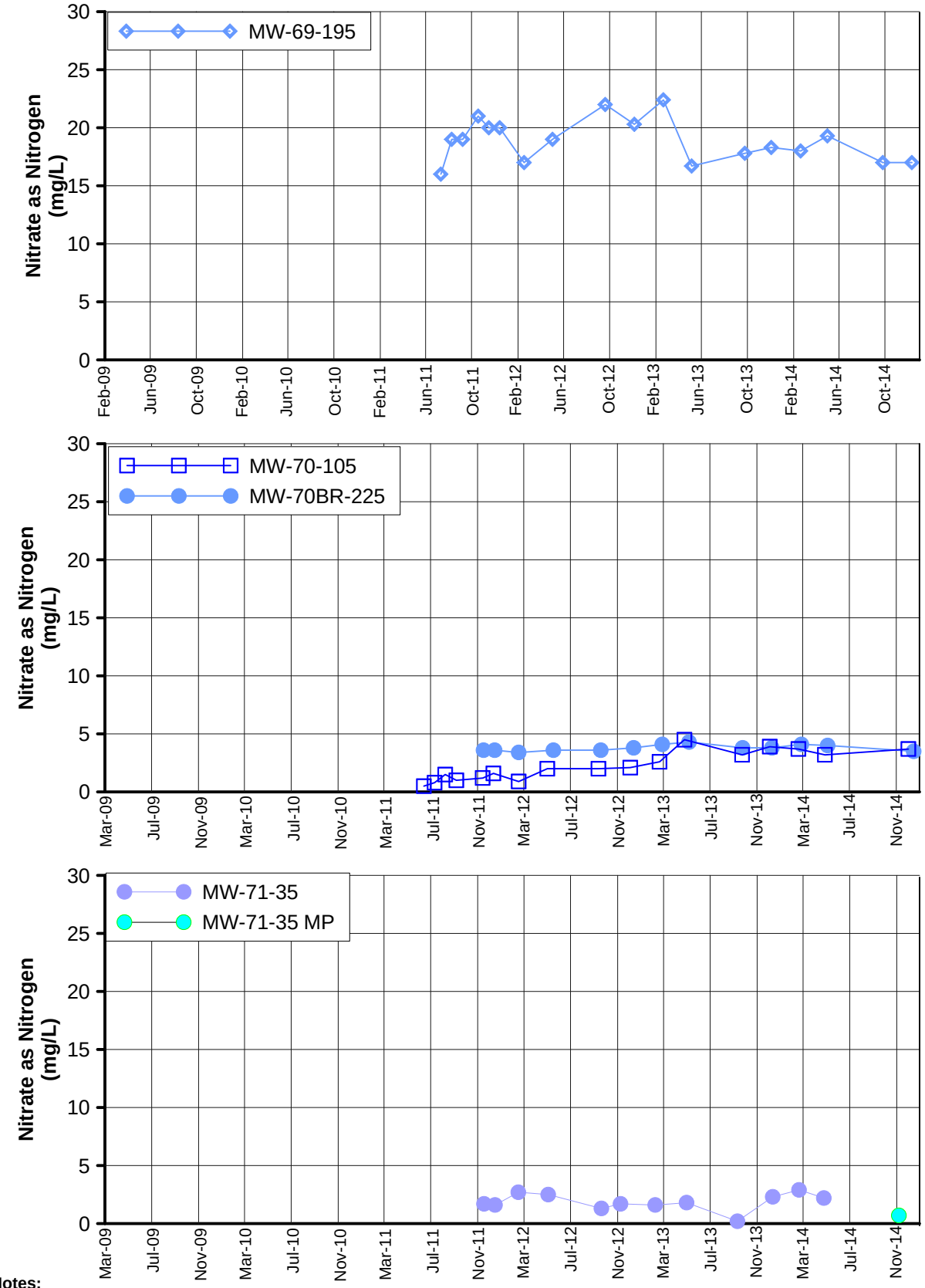

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-54
NITRATE as NITROGEN
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-35
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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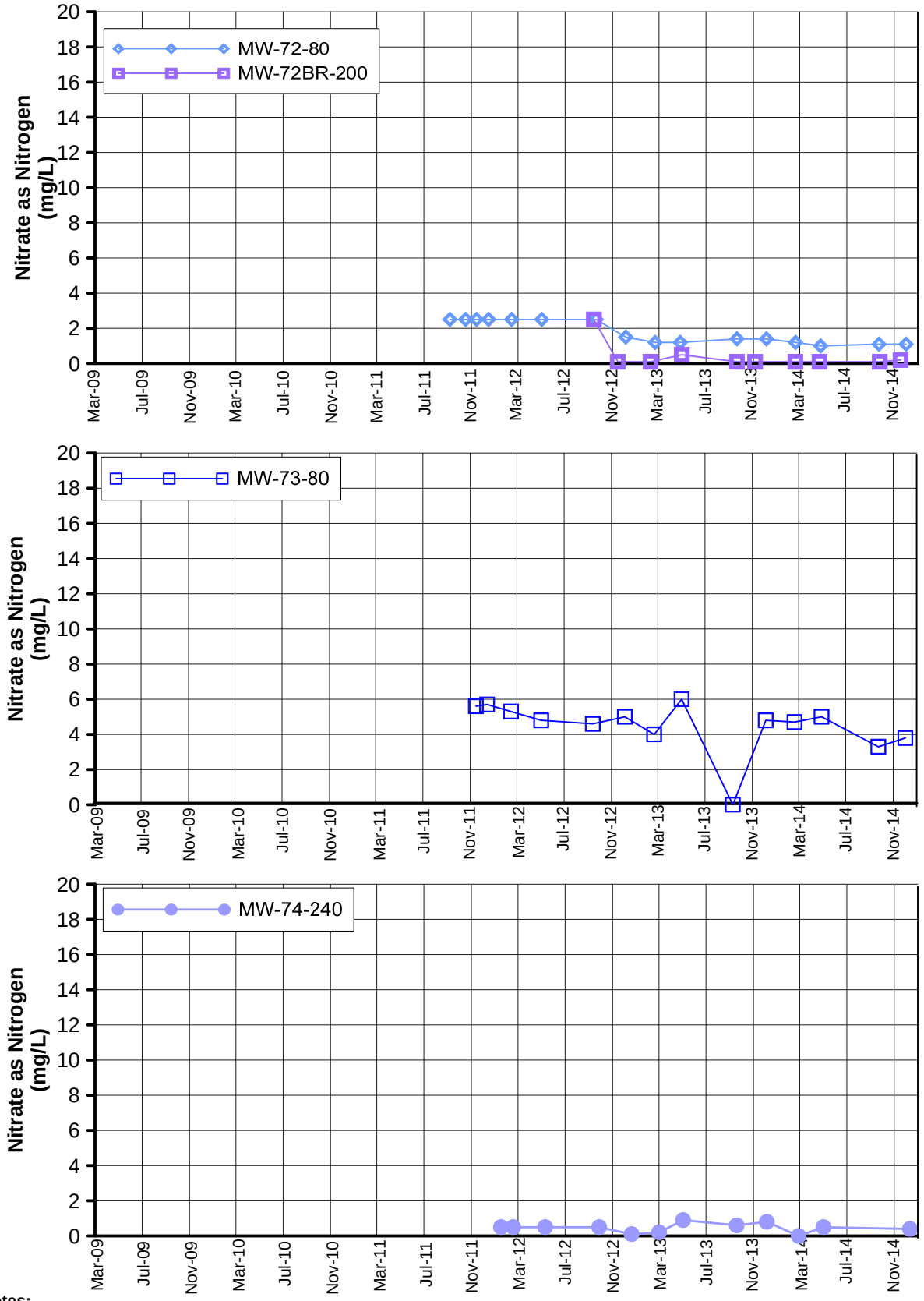

Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-55
NITRATE as NITROGEN
IN MW-72 CLUSTER, MW-73-80, AND MW-74-240
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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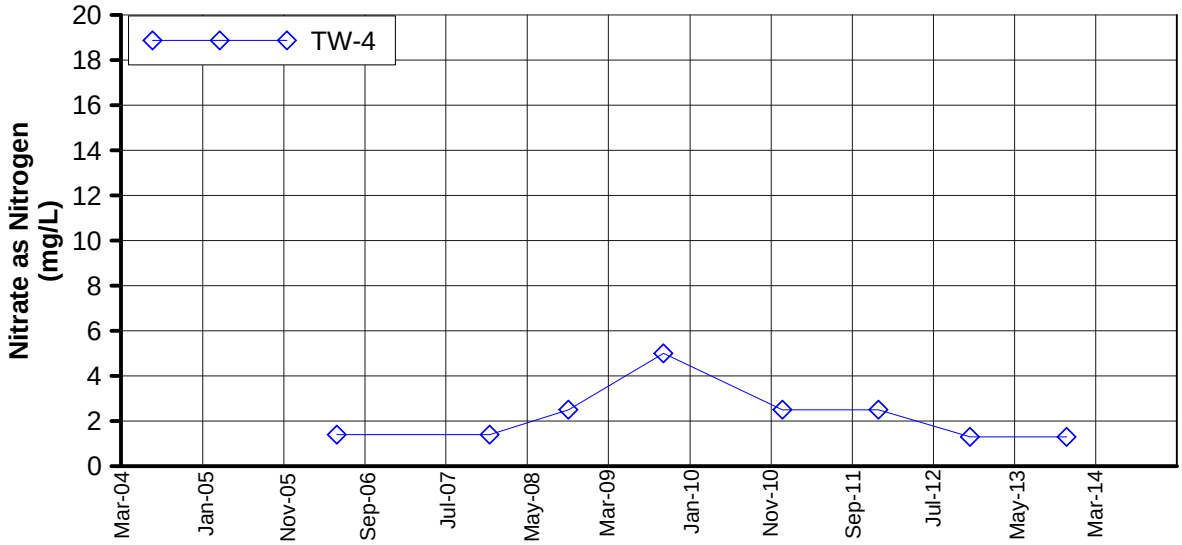

Notes:
Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.

FIGURE C-56
NITRATE as NITROGEN
IN TW-4
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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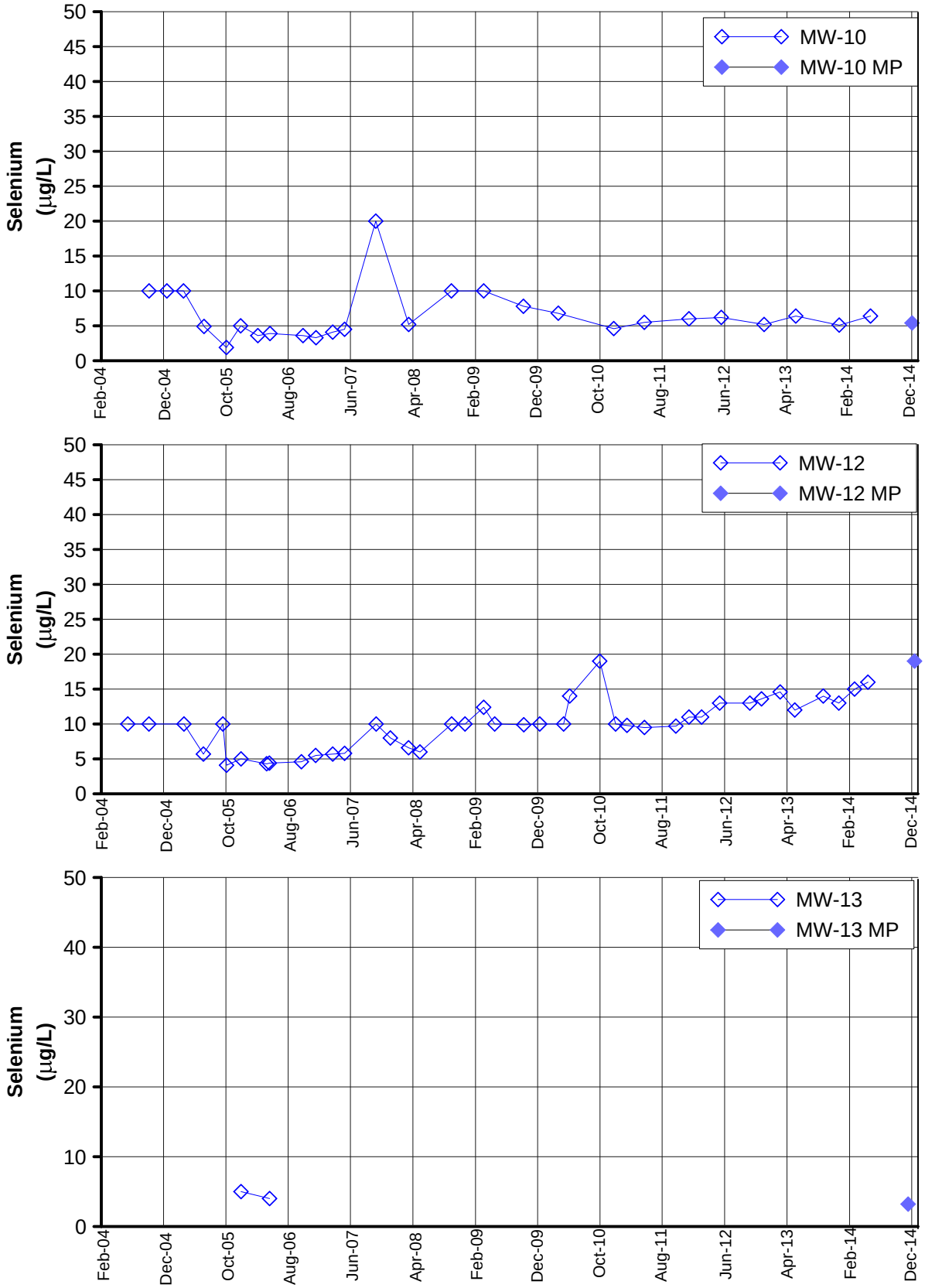

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-57
SELENIUM
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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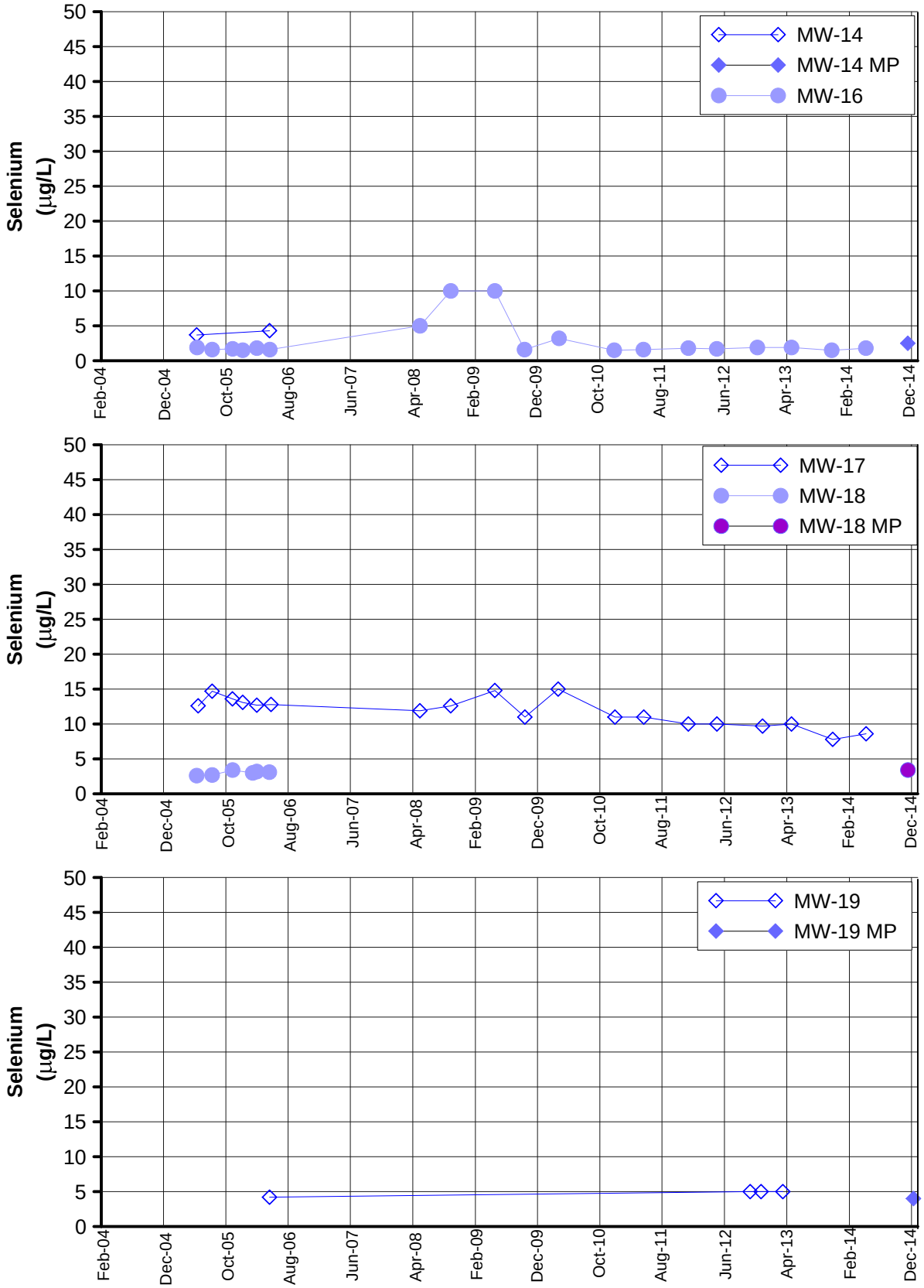

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-58
SELENIUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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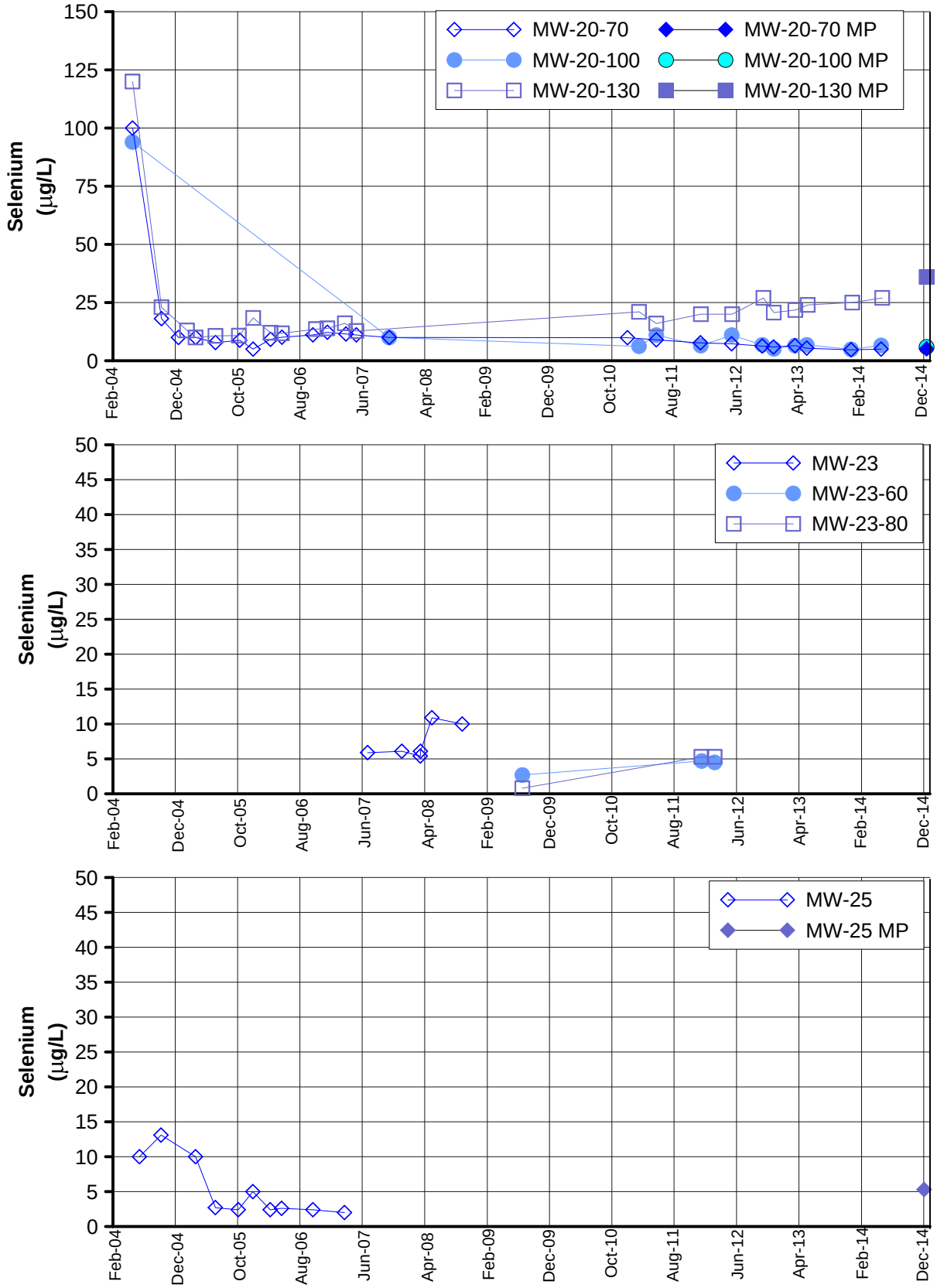

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-59
SELENIUM
IN MW-20, MW-23, AND MW-25 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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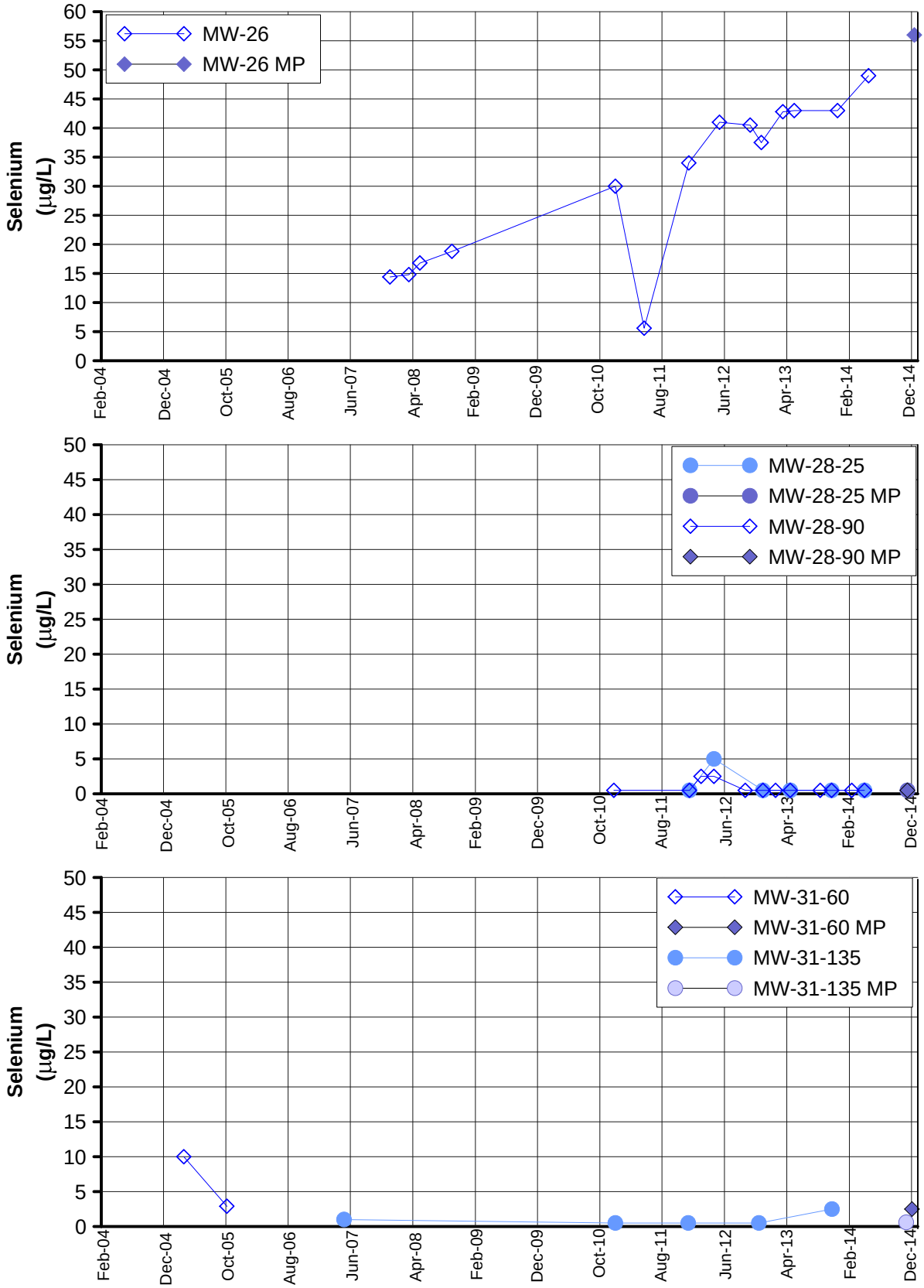
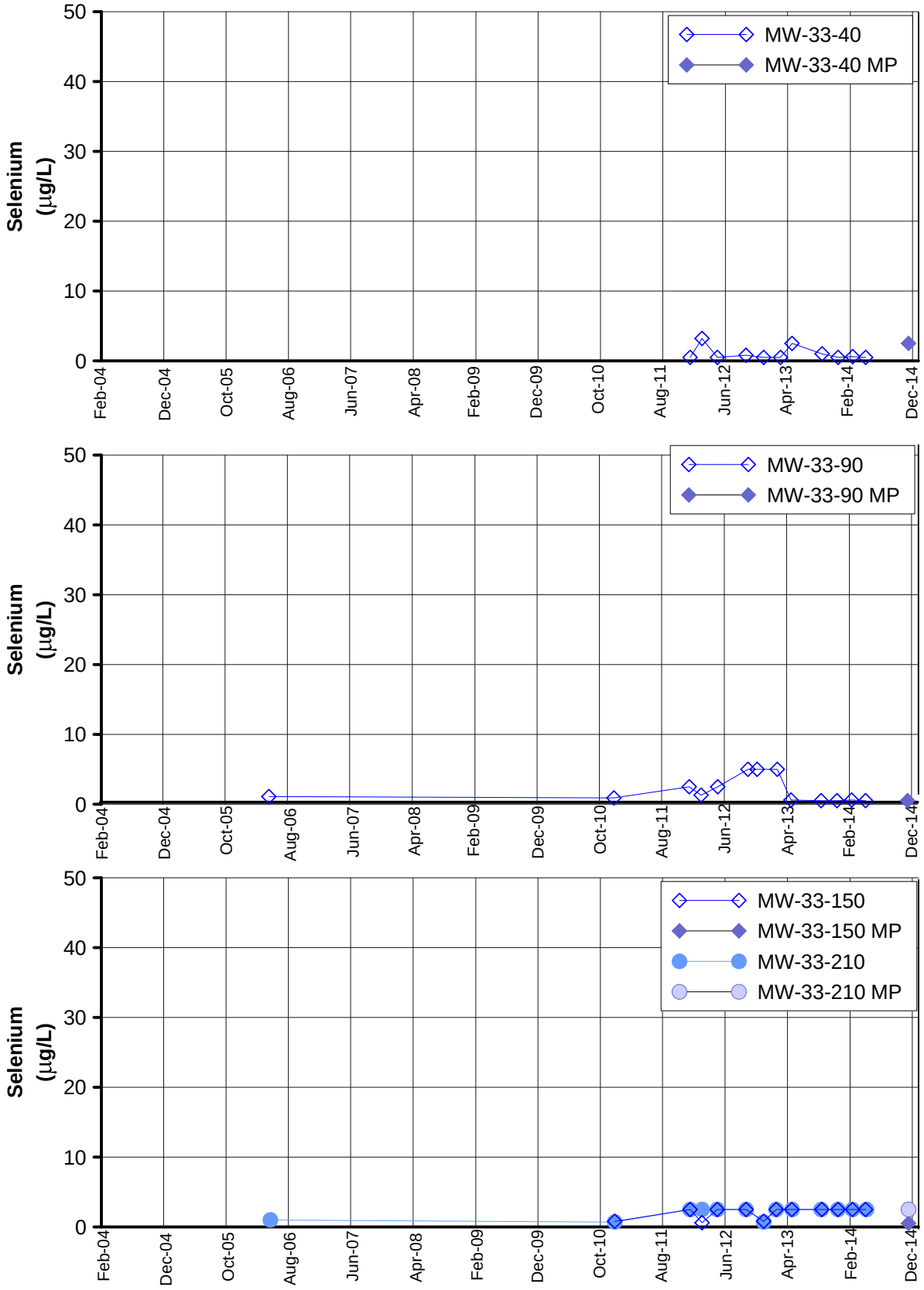


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-60
SELENIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

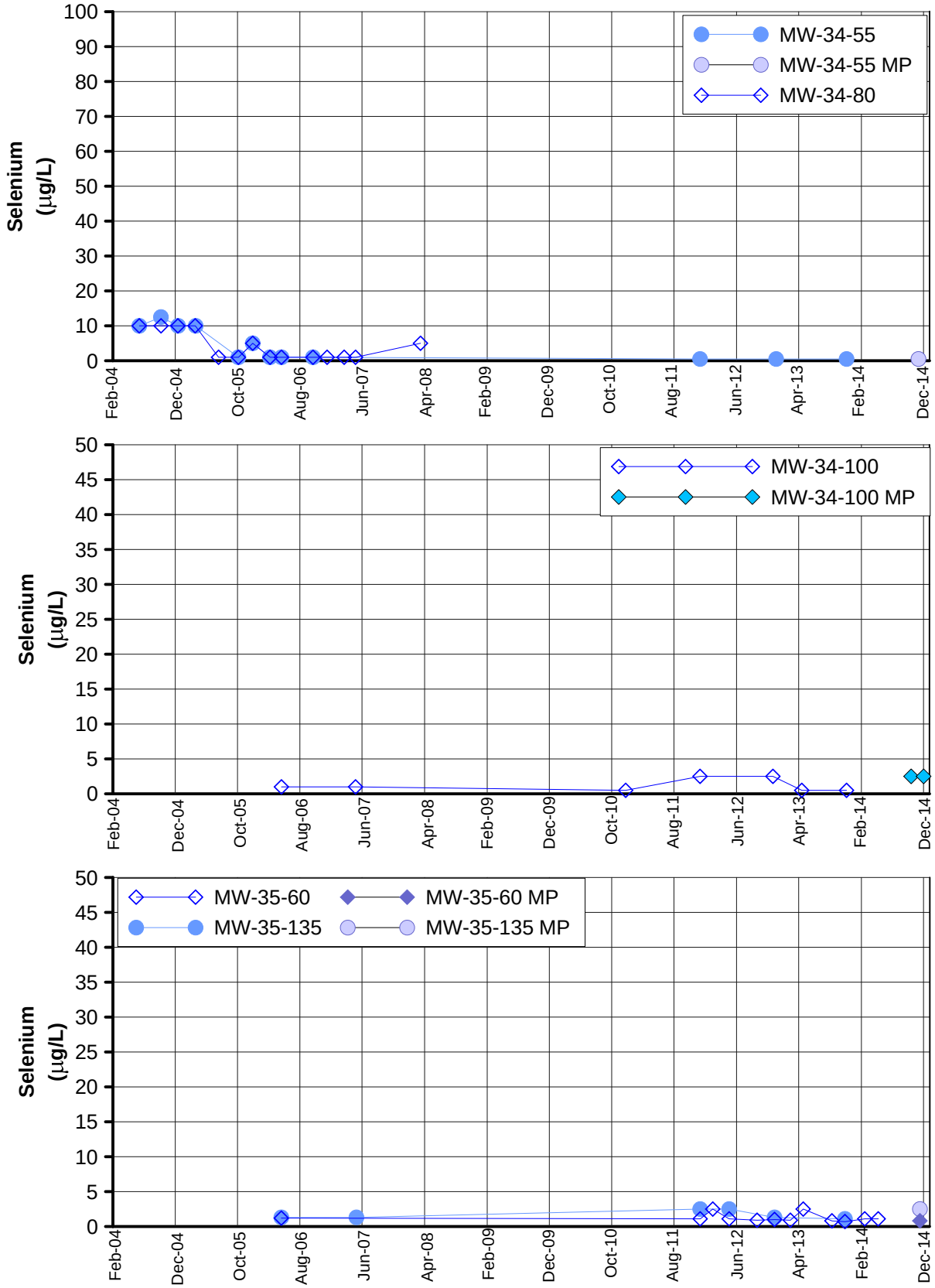


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-61
SELENIUM
IN MW-33 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

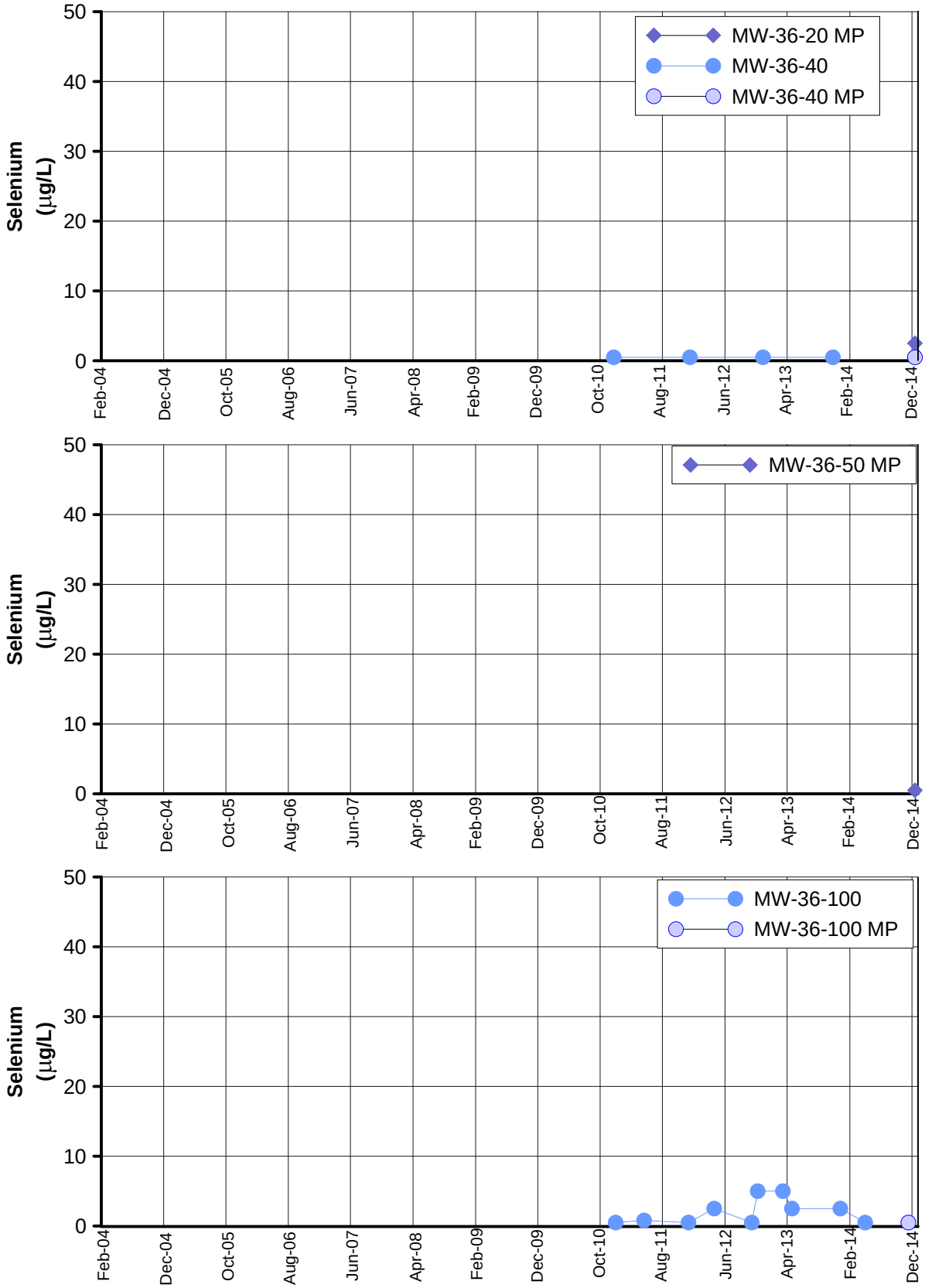


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-62
SELENIUM
IN MW-34 AND MW-35 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

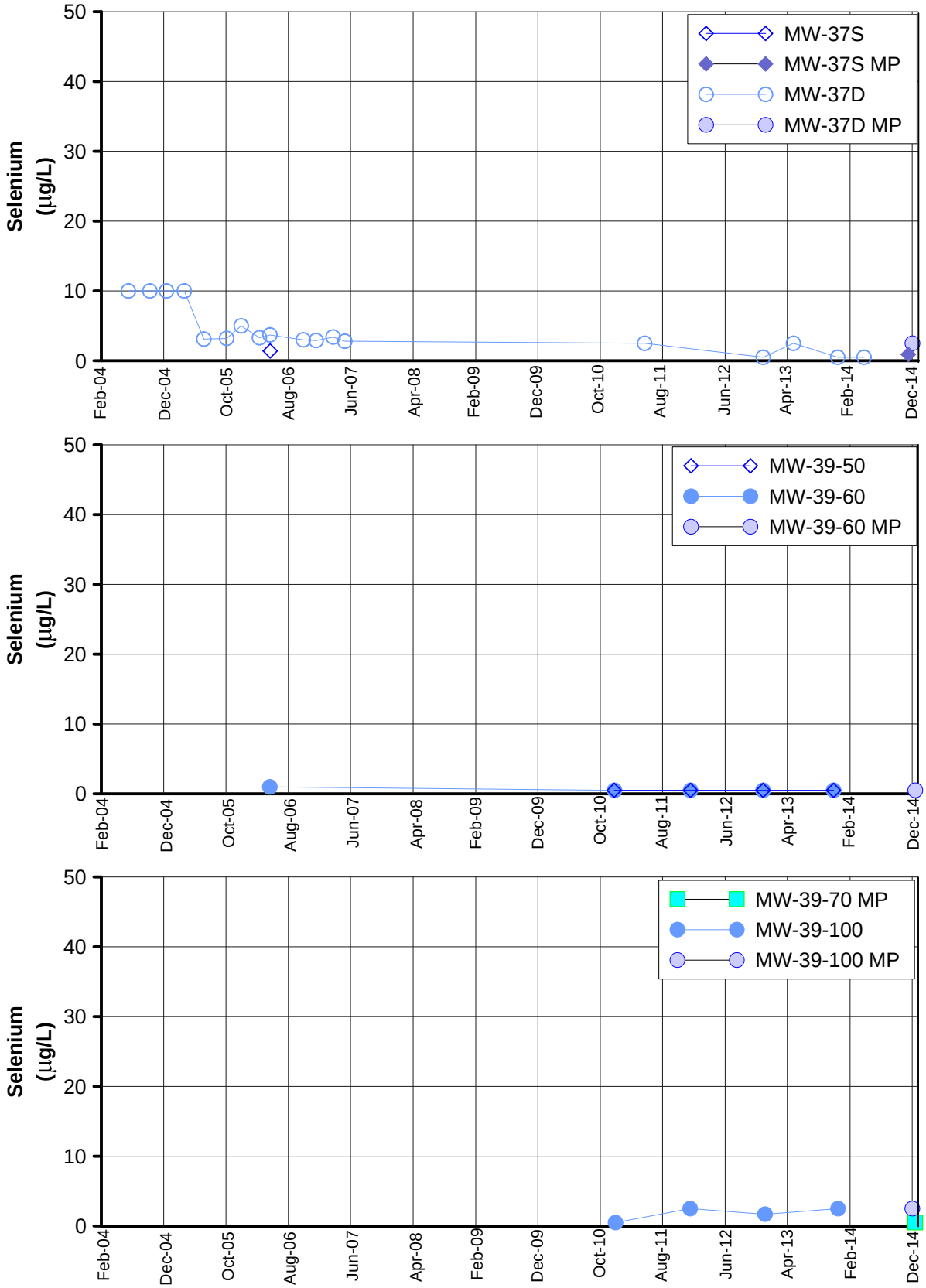


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-63
SELENIUM
IN MW-36 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

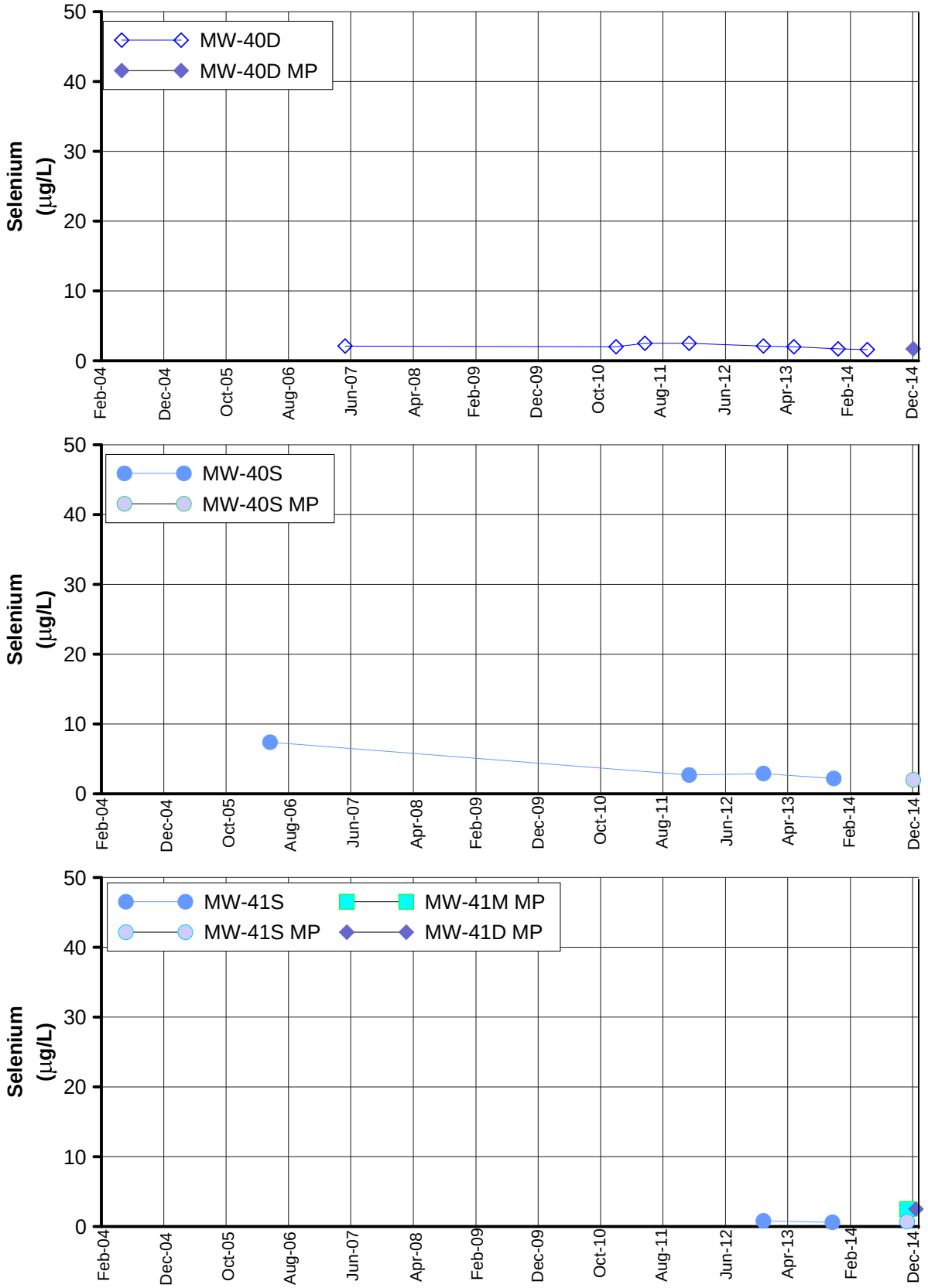


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-64
SELENIUM
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-65
SELENIUM
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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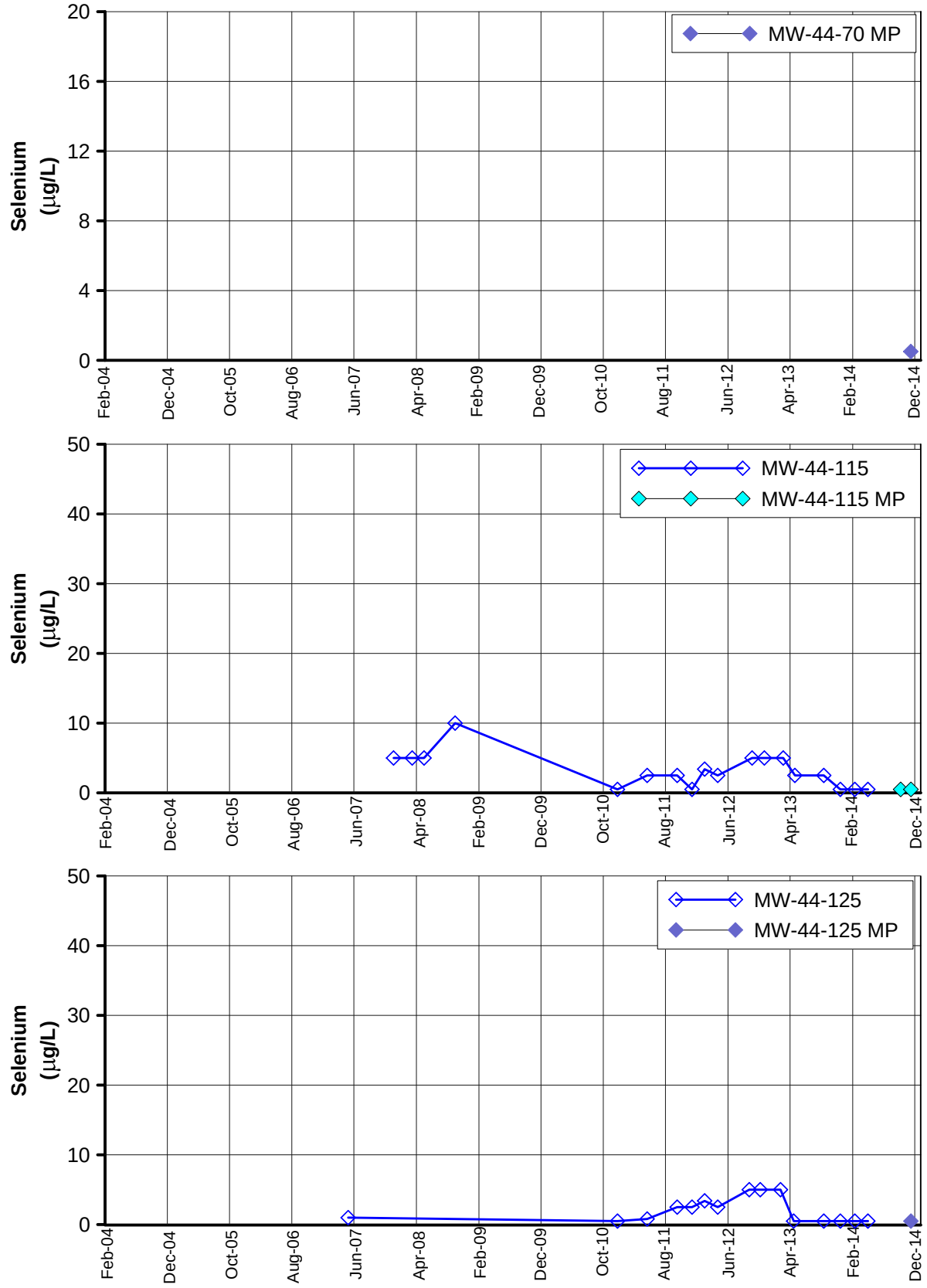

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-66
SELENIUM
IN MW-44 CLUSTER

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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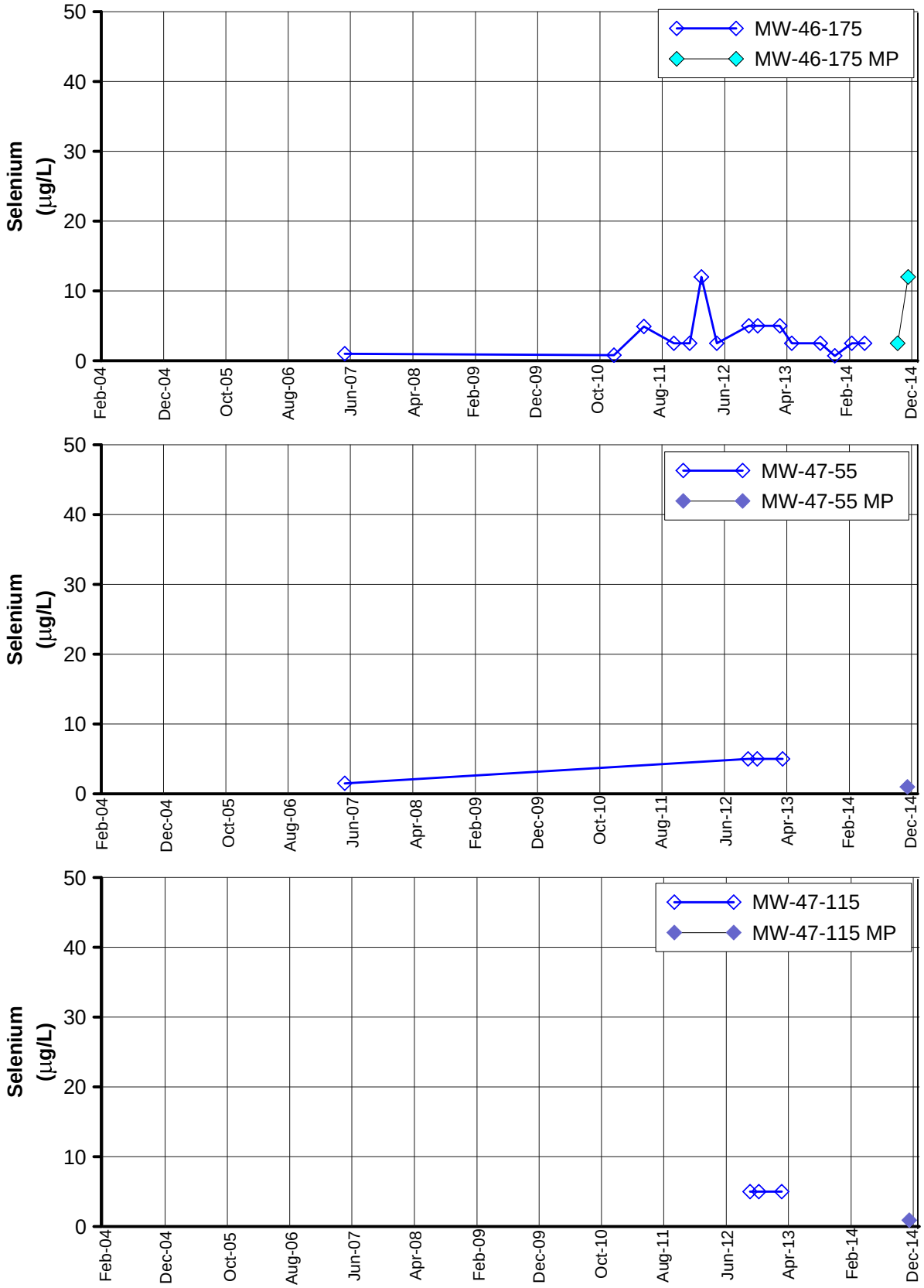
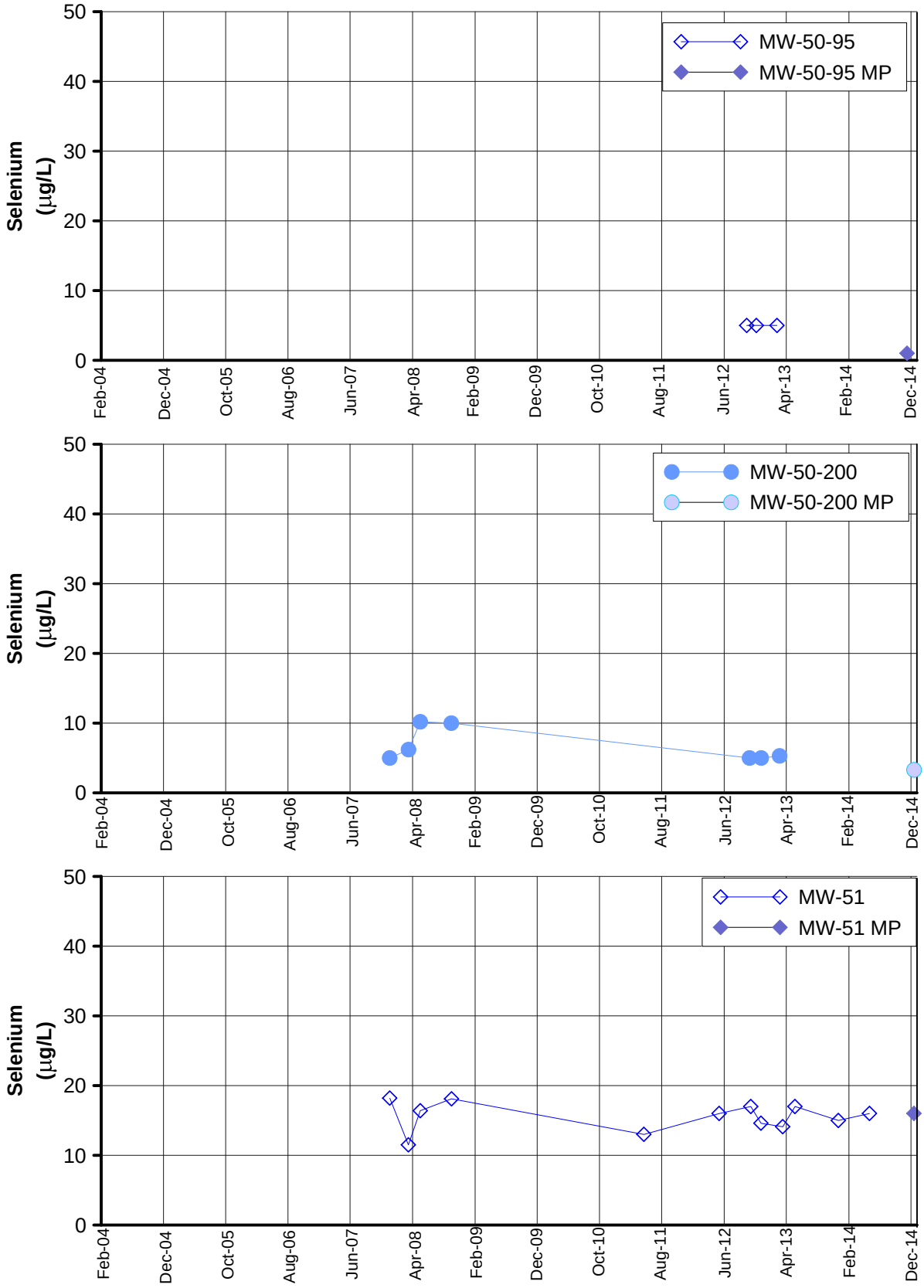


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-67
SELENIUM
IN MW-46 AND MW-47 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

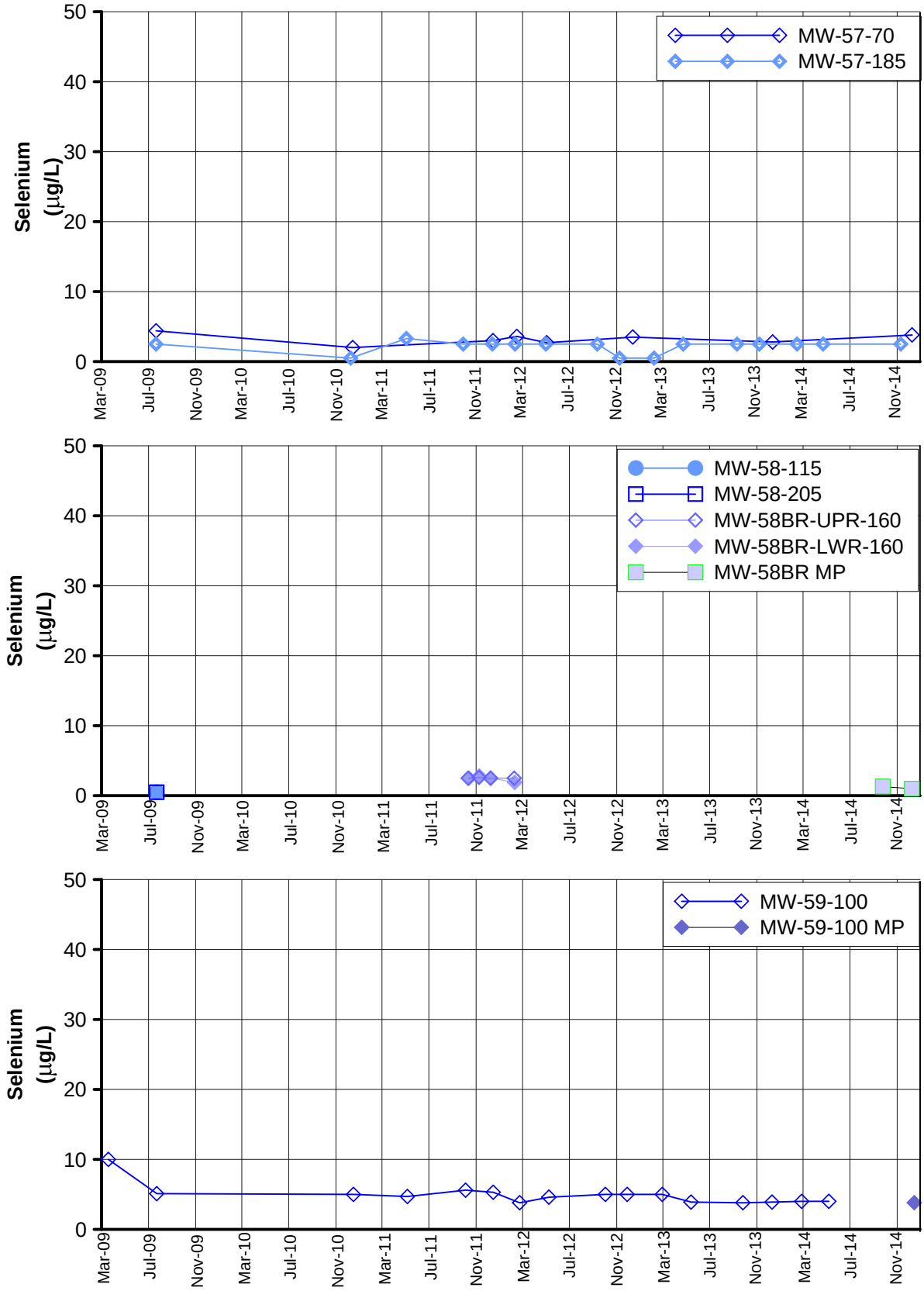


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-68
SELENIUM
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

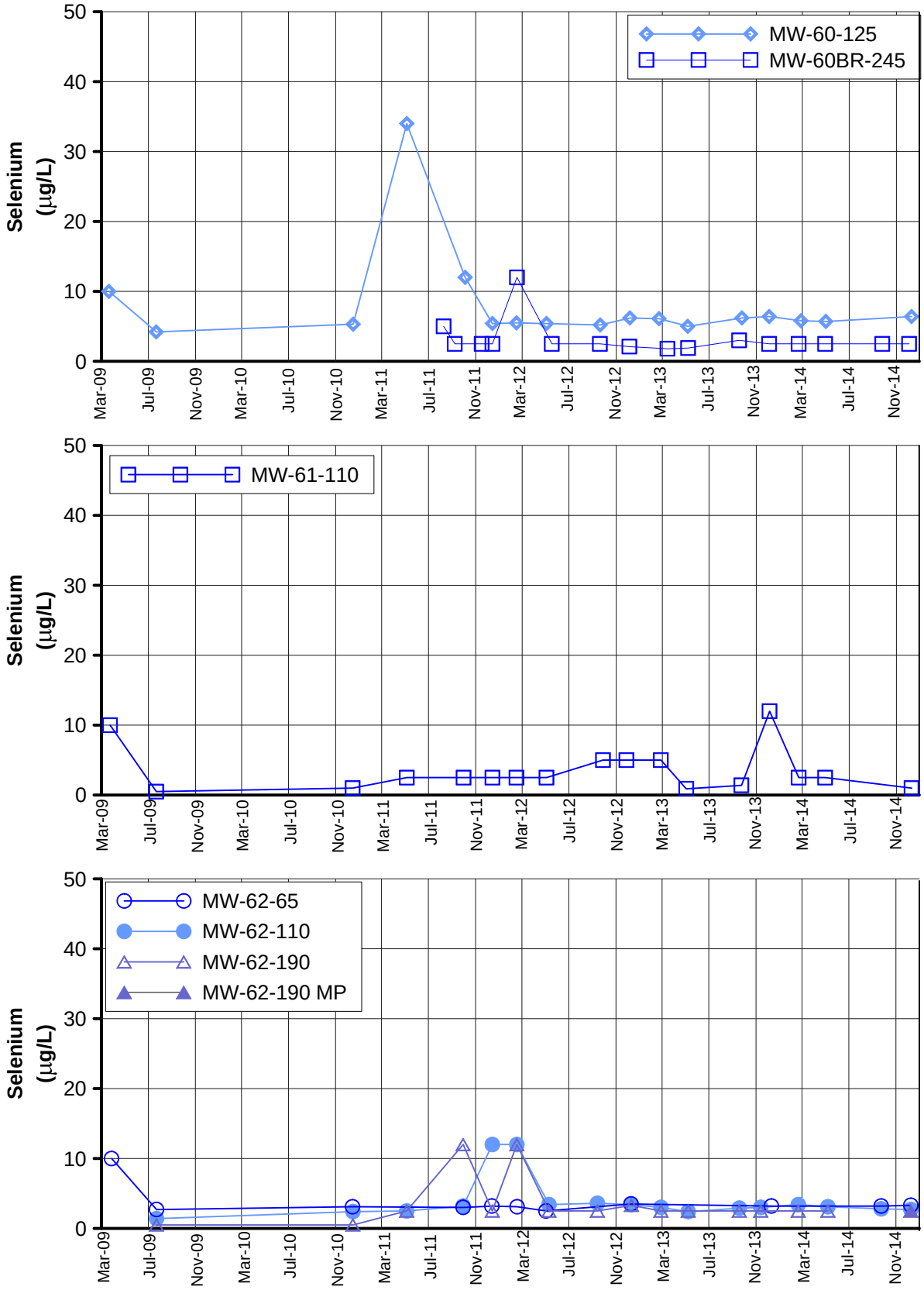


Note:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-69
SELENIUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

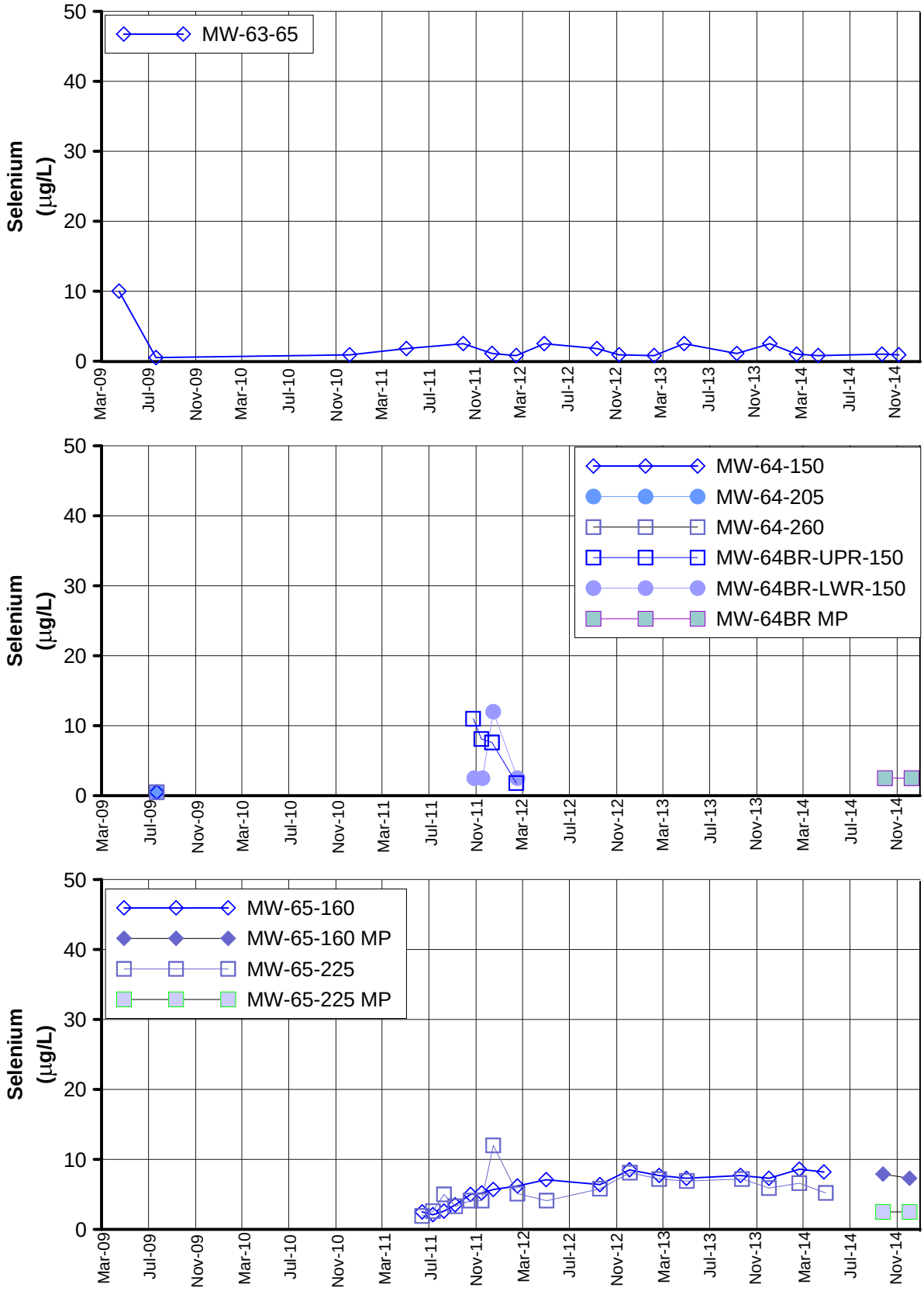


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-70
SELENIUM IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-71
SELENIUM
IN MW-63-65, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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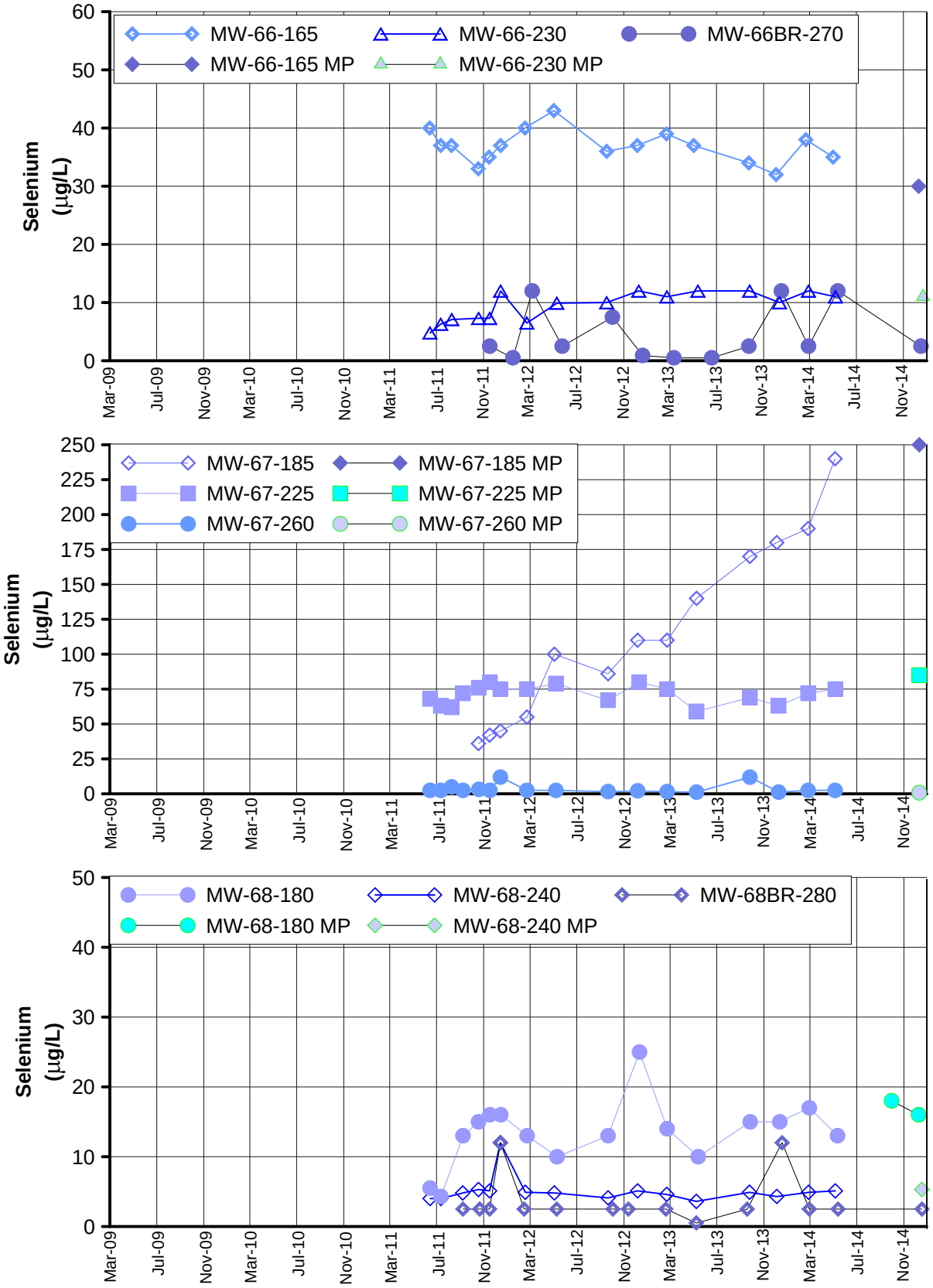

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-72
SELENIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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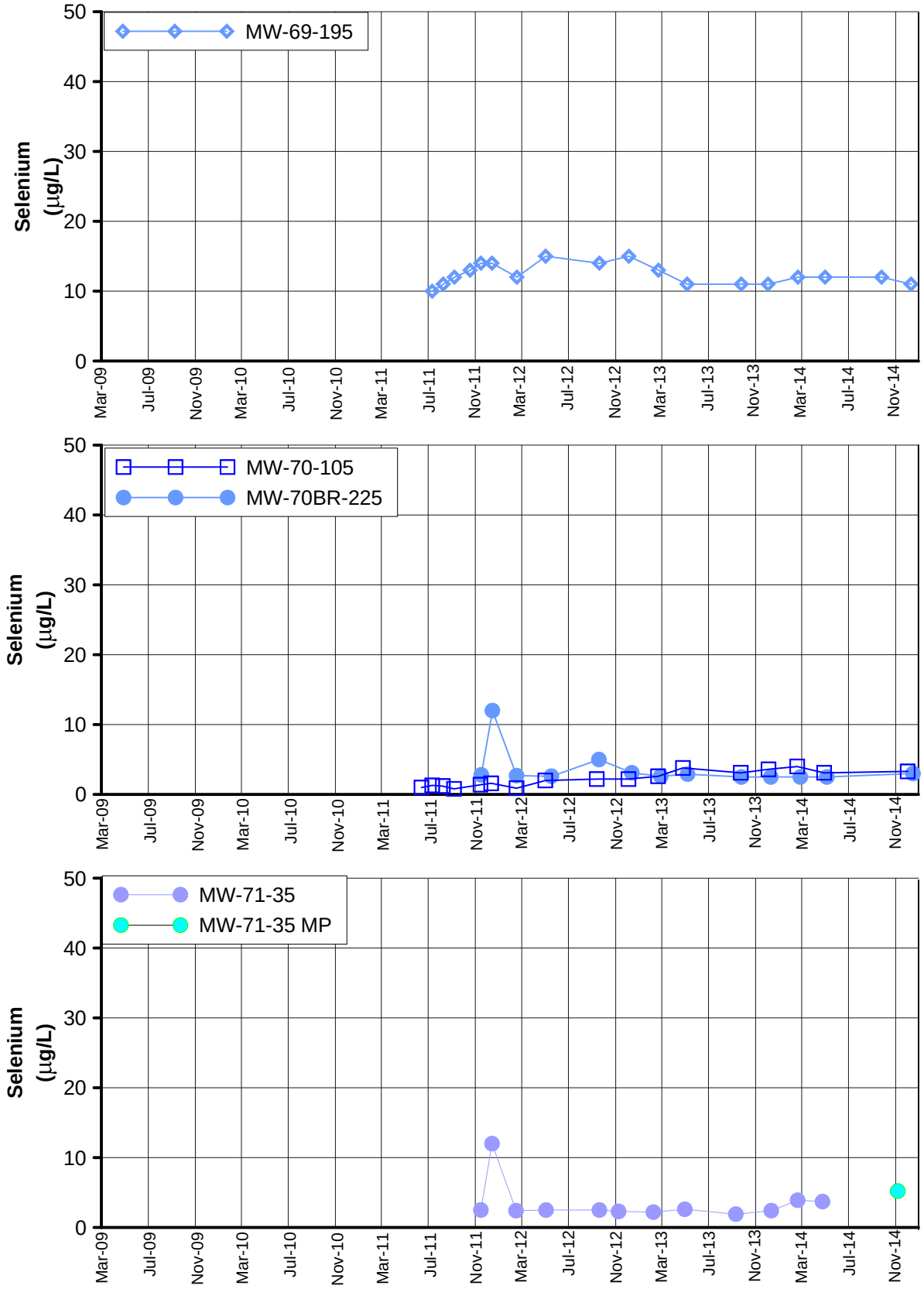

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE C-73
SELENIUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-35
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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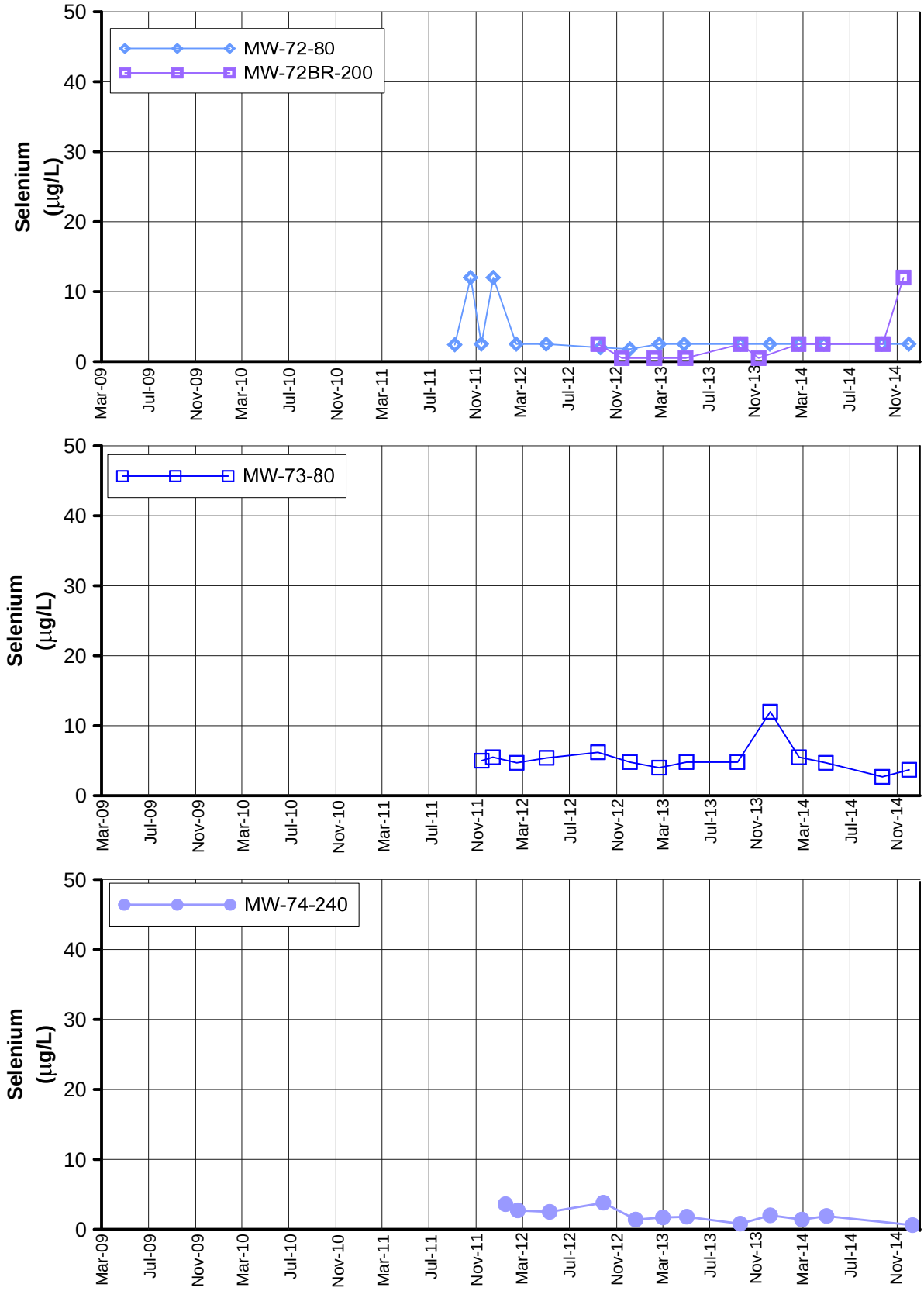

FIGURE C-74
SELENIUM
IN MW-72 CLUSTER, MW-73-80, AND MW-74-240
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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Appendix D
Other Groundwater Monitoring Results

TABLE D-1
In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic Dissolved (µg/L)	Manganese Dissolved (µg/L)	Iron Dissolved (µg/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-9	02-Dec-14	1.6	ND (0.50)	71.0	---	9.30	240	---	-68
MW-10	02-Dec-14	3.2	ND (0.50)	ND (20)	---	10.0	270	---	-66
MW-11	02-Dec-14	1.5	ND (0.50)	ND (20)	---	5.70	190	---	-5
	02-Dec-14 FD	1.4	ND (0.50)	ND (20)	---	5.60	190	---	FD
MW-12	15-Dec-14	40.0	ND (0.50) J	20.0 J	---	14.0	440	---	-59
MW-13	13-Nov-14	1.9	ND (0.50)	ND (20)	---	---	150	---	30
MW-14	12-Nov-14	0.94	ND (0.50)	33.0	---	4.00	100	---	12
MW-15	11-Nov-14	---	ND (0.50)	ND (20)	---	---	140	---	28
MW-18	13-Nov-14	---	ND (0.50)	ND (20)	---	---	92.0	---	24
MW-19	10-Dec-14	---	ND (0.50)	ND (20)	---	---	170	---	-78
MW-20-70	15-Dec-14	---	ND (0.50)	ND (20)	---	7.70	230	---	-86
MW-20-100	15-Dec-14	---	ND (0.50)	ND (20)	---	8.90	260	---	-83
MW-20-130	15-Dec-14	3.9	ND (0.50) J	ND (20)	---	14.0	1100	---	-150
	15-Dec-14 FD	3.9	ND (0.50) J	ND (20)	---	15.0	1100	---	FD
MW-21	11-Nov-14	---	ND (0.50)	ND (20)	---	0.680	1700	---	-13
MW-22	18-Dec-14	14.0	6000	10000	---	---	2200	---	-42
MW-23-060	10-Nov-14	3.1	ND (0.50)	---	---	---	---	---	-62
MW-23-080	10-Nov-14	3.4	ND (0.50)	---	---	---	---	---	-220
MW-24A	04-Nov-14	0.28	28.0	---	---	0.110	---	---	-200
MW-24B	18-Dec-14	2.5	77.0	---	---	0.970	---	---	-250
MW-24BR	03-Dec-14	---	---	---	---	---	---	---	-190
	04-Dec-14	0.41	140	---	---	0.0590	---	---	---
MW-25	02-Dec-14	1.2	ND (0.50)	ND (20)	---	8.90	140	---	-42
MW-26	15-Dec-14	2.1	ND (0.50)	ND (20)	---	21.0	530	---	-60
	15-Dec-14 FD	1.9	ND (0.50)	ND (20)	---	22.0	530	---	FD
MW-27-20	04-Nov-14	1.7	110	47.0	---	ND (0.050)	220	---	-21
MW-27-60	04-Nov-14	11.0	340	540	---	ND (0.050)	110	0.730	-120
	04-Nov-14 FD	11.0	330	520	---	ND (0.050)	110	0.600	FD
MW-27-85	04-Nov-14	1.6	2.4	120	---	ND (0.050)	940	ND (0.20)	-25
MW-28-25	11-Nov-14	1.0	11.0	ND (20)	---	ND (0.050)	250	---	110
MW-28-90	11-Nov-14	1.7	100	580	---	ND (0.050)	550	4.90	-28

TABLE D-1
In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic Dissolved (µg/L)	Manganese Dissolved (µg/L)	Iron Dissolved (µg/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-29	10-Nov-14	7.8	330	1600	---	ND (0.050)	420	---	-110
MW-30-30	10-Nov-14	1.1	60.0	720	---	ND (0.050)	1700	---	-120
MW-30-50	10-Nov-14	2.7	130 J	37.0	---	ND (0.050)	200	---	7.3
	10-Nov-14 FD	2.8	160 J	27.0	---	ND (0.050)	200	---	FD
MW-31-60	03-Dec-14	1.1	ND (0.50)	ND (20)	---	3.90	210	---	-10
MW-31-135	05-Nov-14	3.3	ND (0.50)	38.0	---	---	450	---	-200
MW-32-20	11-Nov-14	3.3	160	---	---	---	---	---	-94
	11-Nov-14 FD	3.7	170	---	---	---	---	---	FD
MW-32-35	11-Nov-14	21.0	1200	7400	---	---	1500	---	-110
	01-Dec-14	---	---	---	---	0.0930	---	---	-270
MW-33-40	11-Nov-14	8.9	ND (0.50)	ND (20)	---	0.300	1500	19.0	100
MW-33-90	12-Nov-14	1.2	ND (0.50)	ND (20)	---	1.10	710	7.80	140
MW-33-150	12-Nov-14	0.74	ND (0.50)	34.0	---	1.30	800	11.0	110
MW-33-210	12-Nov-14	1.0	14.0	30.0	---	1.90	1300	13.0	140
MW-34-55	06-Nov-14	2.1	67.0	50.0	---	ND (0.050)	200	---	-35
MW-34-80	06-Nov-14	1.3	ND (0.50)	110	---	---	---	---	-4
	01-Dec-14	---	---	---	---	ND (0.050)	---	---	-44
MW-34-100	01-Dec-14	1.6	18.0 J	ND (20)	---	0.580 J	1100	---	-62
	01-Dec-14 FD	1.5	ND (2.5) J	ND (20)	---	0.610 J	1100	---	FD
MW-35-60	13-Nov-14	0.93	ND (0.50)	ND (20)	---	1.90	350	---	-97
MW-35-135	13-Nov-14	0.84	ND (0.50)	ND (20)	---	2.80	660	---	-200
MW-36-20	15-Dec-14	1.7	280	1900	---	---	2400	---	-130
MW-36-40	15-Dec-14	4.7	140	---	---	ND (0.050)	---	---	-110
MW-36-50	15-Dec-14	4.3	250	120	---	---	190	---	-35
MW-36-70	15-Dec-14	3.3	170	---	---	---	---	---	-24
MW-36-90	15-Dec-14	25.0	2.4	---	---	---	---	---	16
MW-36-100	13-Nov-14	8.9	ND (0.50)	ND (20)	---	0.220	660	---	-20
MW-37S	12-Nov-14	1.8	ND (0.50)	ND (20)	---	---	290	---	-88
MW-37D	02-Dec-14	---	ND (0.50)	ND (20)	---	0.210	650	---	-190
MW-38S	05-Nov-14	13.0	210	84.0	---	ND (0.050)	160	---	-260
MW-38D	05-Nov-14	7.4	88.0	22.0	---	0.0680	690	---	-260

TABLE D-1
In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic Dissolved (µg/L)	Manganese Dissolved (µg/L)	Iron Dissolved (µg/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-39-40	16-Dec-14	21.0	140	---	---	---	---	---	-130
MW-39-50	16-Dec-14	3.1	110	---	---	---	---	---	8.9
MW-39-60	16-Dec-14	5.3	40.0	---	---	ND (0.050)	---	---	39
	16-Dec-14 FD	6.1	42.0	---	---	ND (0.050)	---	---	FD
MW-39-70	16-Dec-14	---	ND (0.50)	ND (20)	---	---	250	---	25
MW-39-80	16-Dec-14	---	---	---	---	---	---	---	44
MW-39-100	01-Dec-14	2.0	15.0	ND (20)	---	0.0870	1400	---	-310
MW-40S	04-Dec-14	1.2	ND (0.50)	---	---	3.80	---	---	-37
MW-40D	04-Dec-14	4.5	ND (0.50)	ND (20)	---	3.30	690	---	-89
MW-41S	04-Nov-14	1.8	ND (0.50)	50.0	---	1.20	270	---	-110
MW-41M	04-Nov-14	1.9	ND (0.50)	20.0	---	0.660	520	---	-110
	04-Nov-14 FD	1.9	ND (0.50)	34.0	---	0.620	510	---	FD
MW-41D	17-Dec-14	2.9	32.0	ND (20)	---	0.480	750	---	-94
MW-42-30	05-Nov-14	3.8	15.0	---	---	ND (0.050)	---	---	-170
MW-42-55	06-Nov-14	18.0	18.0	---	---	---	---	---	-71
MW-42-65	06-Nov-14	3.6	870	48.0	---	---	550	---	22
MW-43-25	05-Nov-14	23.0	360	3700	---	---	340	---	-140
MW-43-75	05-Nov-14	13.0	690	---	---	---	---	---	-87
MW-43-90	05-Nov-14	2.9	800	2100	---	---	1500	---	-40
MW-44-70	11-Nov-14	4.5	100	120	---	---	230	---	29
MW-44-115	12-Nov-14	5.4	2.9	ND (20)	---	0.190	820	---	52
MW-44-125	12-Nov-14	3.3	400	---	---	0.120	---	---	-51
	12-Nov-14 FD	3.2	370	---	---	0.140	---	---	FD
MW-46-175	13-Nov-14	---	ND (2.5)	ND (20)	---	1.10	780	---	65
MW-46-205	13-Nov-14	---	---	---	---	---	---	---	130
MW-47-55	11-Nov-14	1.1	ND (0.50)	ND (20)	---	---	260	---	-74
MW-47-115	11-Nov-14	---	ND (0.50)	ND (20)	---	---	750	---	-290
MW-48	06-Nov-14	---	---	---	---	---	---	---	-83
MW-49-135	22-Dec-14	1.6	220	ND (20)	---	---	700	---	-230
MW-49-275	17-Dec-14	---	250	ND (20)	---	---	1400	---	-150
MW-49-365	17-Dec-14	---	---	---	---	---	---	---	-190

TABLE D-1
In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic Dissolved (µg/L)	Manganese Dissolved (µg/L)	Iron Dissolved (µg/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-50-095	11-Nov-14	---	ND (0.50)	ND (20)	---	---	280	---	-73
MW-50-200	16-Dec-14	3.1	ND (0.50)	ND (20)	---	---	870	---	-7
MW-51	15-Dec-14	3.7	ND (0.50)	ND (20) J	---	11.0	660	---	-130
MW-52S	17-Dec-14	0.16	1700	---	---	---	---	---	-88
MW-52M	17-Dec-14	1.8	120	---	---	---	---	---	-120
MW-52D	17-Dec-14	3.5	110	---	---	---	---	---	-150
MW-53M	17-Dec-14	0.85	270	---	---	---	---	---	-160
MW-53D	17-Dec-14	2.9	1200	---	---	---	---	---	-150
MW-54-85	18-Nov-14	3.5	721	269	---	---	636	---	-220
	18-Nov-14 FD	3.6	841	296	---	---	634	---	FD
MW-54-140	18-Nov-14	3.1	98.6	ND (20)	---	---	571	---	-240
MW-54-195	18-Nov-14	ND (1.0)	182	85.1	---	---	1080	---	-290
MW-55-45	18-Nov-14	---	1030	86.2	---	---	62.1	---	-270
MW-55-120	18-Nov-14	---	ND (10)	ND (20)	---	---	341	---	-87
MW-56S	18-Dec-14	---	---	---	---	---	---	---	-72
MW-56M	18-Dec-14	---	---	---	---	---	---	---	-90
MW-56D	18-Dec-14	---	---	---	---	---	---	---	-140
MW-57-050	10-Dec-14	---	---	---	---	---	---	---	
MW-57-070	10-Dec-14	1.4	ND (0.50)	---	---	10.0	---	---	-30
MW-57-185	10-Nov-14	12.0	170	---	---	ND (0.050)	---	---	-220
MW-58-065	09-Dec-14	---	---	---	---	---	---	---	
MW-58BR	09-Dec-14	1.1	460	ND (20)	---	1.30	540	---	-180
MW-59-100	15-Dec-14	2.1	ND (0.50)	ND (20)	---	3.60	650	---	-30
	15-Dec-14 FD	2.0	ND (0.50)	ND (20)	---	3.90	650	---	FD
MW-60-125	10-Dec-14	1.8	ND (0.50)	---	---	4.30	---	---	-130
MW-60BR-245	03-Dec-14	---	---	---	---	---	---	---	-240
	04-Dec-14	6.8	17.0	---	---	0.180	---	---	---
MW-61-110	10-Dec-14	3.4	83.0	---	---	4.20	---	---	-120
MW-62-065	09-Dec-14	1.4	ND (0.50)	---	---	4.20	---	---	-110
MW-62-110	09-Dec-14	6.7	47.0	---	---	3.70	---	---	-50

TABLE D-1
In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic Dissolved (µg/L)	Manganese Dissolved (µg/L)	Iron Dissolved (µg/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-62-190	09-Dec-14	4.7	500	---	---	ND (0.050)	---	---	-59
MW-63-065	05-Nov-14	1.4	ND (0.50)	---	---	1.30	---	---	-21
MW-64BR	08-Dec-14	3.0	750	320	---	ND (0.050)	610	---	-140
MW-65-160	03-Dec-14	0.61	2.4	ND (20)	---	12.0	430	---	-82
MW-65-225	03-Dec-14	2.9	56.0	25.0	---	2.30	870	---	-60
MW-66-165	10-Dec-14	1.1	ND (0.50)	ND (20)	---	30.0	490	---	-73
MW-66-230	22-Dec-14	6.6	35.0	ND (20)	---	14.0	1100	---	-81
MW-66BR-270	03-Dec-14	---	---	---	---	---	---	---	-380
	16-Dec-14	ND (0.50)	860	---	---	ND (0.050)	---	---	---
MW-67-185	11-Dec-14	1.2	ND (0.50)	38.0	---	51.0	570	---	-48
MW-67-225	11-Dec-14	3.1	ND (0.50)	ND (20)	---	26.0	1100	---	-130
MW-67-260	11-Dec-14	8.0	130	ND (20)	---	0.600	790	---	-200
MW-68-180	09-Dec-14	2.5	ND (0.50)	ND (20)	---	30.0	1100	---	-58
MW-68-240	18-Dec-14	1.6	43.0	ND (20)	---	4.40	850	---	-81
MW-68BR-280	18-Dec-14	1.2	ND (2.5)	---	---	ND (0.050)	---	---	-200
MW-69-195	11-Dec-14	2.5	ND (0.50)	---	---	17.0	---	---	0.0
MW-70-105	02-Dec-14	4.5	120	---	---	3.70	---	---	-240
MW-70BR-225	16-Dec-14	1.9	ND (0.50)	---	---	3.50	---	---	-190
MW-71-035	06-Nov-14	1.3	360	1600	---	0.670	1200	---	-69
MW-72-080	01-Dec-14	12.0	21.0	---	---	1.10	---	---	-280
MW-72BR-200	17-Nov-14	16.0	ND (2.5)	---	---	0.150	---	---	-300
MW-73-080	01-Dec-14	---	---	---	---	---	---	---	11
	02-Dec-14	1.4	ND (0.50)	---	---	3.80	---	---	---
MW-74-240	09-Dec-14	---	---	---	---	---	---	---	-190
	11-Dec-14	9.7	ND (0.50)	---	---	0.400	---	---	---
OW-3S	12-Nov-14	---	---	---	---	---	---	---	18
OW-3M	12-Nov-14	---	ND (0.50)	ND (20)	---	---	320	---	-110
OW-3D	12-Nov-14	---	ND (0.50)	ND (20)	---	---	420	---	-140
PE-1	04-Nov-14	---	67.6	ND (20)	---	ND (0.50)	387	---	---
	02-Dec-14	---	68.4	34.0	---	ND (0.50)	385	---	---
PGE-7BR	04-Dec-14	---	---	---	---	---	---	---	-190

TABLE D-1

In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic Dissolved (µg/L)	Manganese Dissolved (µg/L)	Iron Dissolved (µg/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
PGE-8 [a]	07-Jan-15	---	---	---	---	ND (0.050)	---	---	-420
Park Moabi-3	23-Dec-14	---	---	---	---	---	---	---	-38
Park Moabi-4	23-Dec-14	---	---	---	---	---	---	---	-39
TW-1	22-Dec-14	---	---	---	---	21.0	---	---	-120
TW-2S [a]	13-Jan-15	---	---	---	---	4.30	---	---	-42
TW-2D	15-Dec-14	---	---	---	---	---	---	---	99
TW-3D	04-Nov-14	---	8.6	ND (20)	---	2.84	478	---	---
	02-Dec-14	---	9.4	ND (20)	---	3.26	547	---	---

Notes:

(---) = data not collected, available, rejected, or field instrument malfunction.
FD = field duplicate sample.
J = concentration or RL estimated by laboratory or data validation.
mg/L = milligrams per liter.
mV = millivolts.
ND = not detected at listed reporting limit (RL).
ORP = oxidation-reduction potential.
µg/L = micrograms per liter.

ORP is reported to two significant figures.

Starting in Fourth Quarter 2012, nitrate samples were analyzed using USEPA Method 353.2, except for TW-3D and PE-1, which were still analyzed using USEPA Method 300.0. USEPA Method 353.2 reports a combination of nitrate and nitrite as nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for USEPA Method 353.2 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as nitrogen.

[a] Fourth Quarter 2014 data was collected January 2015 due to field logistical issues.

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-9	89	536.56	11/03/14	10:20 AM	80.26	0.20	456.28
			12/02/14	9:20 AM	80.60	0.20	455.94
MW-10	97	530.65	05/14/14	5:48 AM	73.80	0.20	456.79
			11/03/14	10:17 AM	74.83	0.20	455.76
			12/02/14	10:08 AM	75.05	0.20	455.54
MW-11	86	522.61	11/03/14	10:10 AM	66.66	0.16	455.89
			12/02/14	9:06 AM	66.90	0.16	455.65
MW-12	50	484.01	02/25/14	8:24 AM	29.49	0.44	454.51
			05/01/14	10:45 AM	27.77	0.44	456.22
			11/03/14	9:43 AM	28.71	0.44	455.29
			12/15/14	7:15 AM	29.27	0.44	454.73
MW-13	52	488.64	11/03/14	9:56 AM	33.28	0.12	455.30
			11/13/14	8:04 AM	33.20	0.12	455.38
MW-14	134	570.99	11/03/14	10:00 AM	114.95	0.10	455.98
			11/12/14	2:49 PM	114.85	0.10	456.08
MW-15	203	641.52	11/03/14	10:08 AM	184.79	0.10	456.66
			11/11/14	8:20 AM	184.77	0.10	456.68
MW-16	218	657.31	04/22/14	6:39 AM	200.11	0.10	457.14
			11/03/14	11:16 AM	200.09	0.10	457.15
MW-17	154	589.96	04/23/14	6:56 AM	132.64	0.11	457.24
			11/03/14	11:26 AM	132.85	0.11	457.03
MW-18	107	545.32	11/03/14	10:14 AM	88.72	0.08	456.54
			11/13/14	9:32 AM	88.78	0.08	456.48
MW-19	66	499.92	04/28/14	7:55 AM	43.41	0.15	456.45
			11/03/14	9:47 AM	45.45	0.15	454.41
			12/10/14	10:24 AM	45.90	0.15	453.96
MW-20-70	70	500.15	05/07/14	8:47 AM	44.77	0.15	455.31
			12/15/14	10:09 AM	47.51	0.15	452.58
MW-20-100	101	500.58	05/07/14	9:39 AM	45.66	0.19	454.76
			12/15/14	10:58 AM	48.40	0.19	452.03
MW-20-130	132	500.66	05/12/14	10:42 AM	46.71	0.77	454.06
			12/15/14	12:32 PM	49.22	0.77	451.58
MW-21	58	505.55	02/18/14	8:23 AM	51.38	0.69	454.18
			04/21/14	10:12 AM	49.55	0.78	456.01
			11/03/14	9:52 AM	50.40	0.78	455.16
			11/10/14	8:10 AM	50.44	0.78	455.12
MW-22	12	460.72	04/30/14	5:52 AM	5.05	1.67	455.74
			12/18/14	2:04 PM	7.02	1.67	453.75
MW-23-060	60	504.08	02/13/14	1:11 PM	49.91	1.06	454.20
			04/22/14	10:58 AM	47.90	1.09	456.22
			11/10/14	12:36 PM	49.00	1.09	455.12

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-23-080	81	504.13	02/13/14	1:27 PM	49.99	1.07	454.23
			04/22/14	11:27 AM	50.03	1.11	454.20
			11/10/14	1:29 PM	50.95	1.11	453.28
MW-24A	127	567.16	11/03/14	10:05 AM	111.29	0.68	455.88
			11/04/14	12:23 PM	111.20	0.68	455.97
MW-24B	215	564.76	12/18/14	2:14 PM	109.58	1.00	455.47
MW-24BR	441	563.95	02/19/14	1:21 PM	108.86	1.03	455.88
			04/28/14	12:26 PM	107.30	1.03	457.45
			12/03/14	9:42 AM	108.18	1.03	456.56
MW-25	107	542.90	11/03/14	9:52 AM	87.74	0.10	455.09
			12/02/14	2:15 PM	88.02	0.10	454.82
MW-26	70	502.22	05/05/14	9:32 AM	46.16	0.27	456.01
			12/15/14	8:30 AM	48.03	0.27	454.15
MW-27-20	14	460.56	04/14/14	8:30 AM	3.85	0.06	456.69
			11/04/14	8:50 AM	6.22	0.06	454.33
MW-27-60	59	461.38	02/10/14	1:20 PM	7.33	0.06	453.96
			04/14/14	9:17 AM	5.02	0.07	456.27
			11/04/14	2:24 PM	7.18	0.07	454.11
MW-27-85	80	460.99	02/10/14	1:56 PM	7.24	0.67	453.94
			04/14/14	9:19 AM	4.98	0.81	456.35
			11/04/14	12:04 PM	6.65	0.63	454.51
MW-28-25	21	466.77	04/15/14	7:27 AM	9.73	0.07	457.01
			11/11/14	7:28 AM	12.54	0.07	454.21
MW-28-90	98	467.53	02/12/14	6:51 AM	13.32	0.47	454.32
			04/15/14	7:50 AM	10.66	0.47	456.98
			11/11/14	8:14 AM	12.72	0.47	454.92
MW-29	42	485.21	04/16/14	12:55 PM	27.33	0.16	457.85
			11/10/14	12:46 PM	30.22	0.16	454.97
MW-30-30	27	468.12	04/14/14	12:08 PM	12.42	2.84	455.94
			11/10/14	8:28 AM	14.04	2.84	454.30
MW-30-50	53	468.81	11/10/14	9:38 AM	14.75	0.08	453.96
MW-31-60	64	496.81	05/12/14	8:10 AM	40.67	0.22	456.10
			12/03/14	2:40 PM	43.05	0.22	453.71
MW-31-135	135	498.11	11/05/14	2:46 PM	45.95	0.69	452.22
MW-32-20	20	461.51	11/11/14	10:25 AM	7.52	2.91	454.20
MW-32-35	37	461.63	04/16/14	12:04 PM	5.50	0.82	456.22
			11/11/14	11:10 AM	7.84	0.82	453.87
			12/01/14	8:30 AM	7.82	0.82	453.88
MW-33-40	42	487.38	02/12/14	8:44 AM	33.26	0.52	454.12
			04/17/14	1:21 PM	30.83	0.55	456.55
			04/17/14	12:55 PM	30.83	0.55	456.55

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-33-40	42	487.38	11/11/14	12:43 PM	33.44	0.55	453.94
MW-33-90	88	487.55	02/12/14	9:09 AM	33.33	0.65	454.27
			04/21/14	6:20 AM	30.44	0.67	457.18
			11/12/14	12:20 PM	33.45	0.67	454.16
MW-33-150	155	487.77	02/12/14	10:36 AM	34.05	1.11	454.23
			04/17/14	12:06 PM	31.81	1.07	456.48
			04/17/14	12:15 PM	31.81	1.07	456.48
			11/12/14	12:24 PM	33.95	1.04	454.27
MW-33-210	223	487.25	02/12/14	11:57 AM	33.52	1.20	454.63
			04/21/14	6:28 AM	31.17	1.23	457.04
			11/12/14	12:23 PM	33.70	1.23	454.49
MW-34-55	57	460.95	11/06/14	12:53 PM	7.11	0.10	453.75
MW-34-80	84	461.20	02/10/14	8:15 AM	7.07	0.48	454.22
			04/17/14	6:53 AM	3.87	0.50	457.43
			04/17/14	6:18 AM	3.87	0.50	457.43
			11/06/14	1:17 PM	7.19	0.50	454.11
			12/01/14	11:15 AM	7.51	0.50	453.81
MW-34-100	117	460.96	01/22/14	9:05 AM	9.48	1.19	452.23
			02/10/14	8:20 AM	7.91	1.19	453.71
			04/17/14	6:06 AM	4.32	1.06	457.35
			04/17/14	6:02 AM	4.32	1.06	457.35
			10/02/14	7:00 AM	6.05	1.06	455.49
			12/01/14	11:40 AM	8.13	1.12	453.45
MW-35-60	57	484.33	02/17/14	7:59 AM	29.19	0.44	455.12
			04/24/14	9:04 AM	27.90	0.45	456.41
			11/13/14	11:40 AM	29.59	0.45	454.73
MW-35-135	159	484.24	04/24/14	8:52 AM	27.07	0.67	457.32
			11/13/14	1:51 PM	29.27	0.67	455.11
MW-36-20	20	469.33	12/15/14	8:48 AM	16.18	0.40	453.15
MW-36-90	90	469.64	04/17/14	8:51 AM	13.80	0.08	455.67
			04/17/14	9:20 AM	13.80	0.08	455.67
MW-36-100	108	469.65	04/17/14	9:59 AM	14.43	0.61	455.35
			04/17/14	9:50 AM	14.43	0.61	455.35
			11/13/14	7:50 AM	16.22	0.61	453.56
MW-37D	227	486.19	04/10/14	8:07 AM	30.26	1.00	456.45
			12/02/14	1:06 PM	31.49	1.00	455.22
MW-37S	85	485.97	11/12/14	1:23 PM	31.05	0.34	454.82
MW-39-40	42	468.02	12/16/14	7:50 AM	15.01	0.47	453.05
MW-39-50	55	467.93	12/16/14	7:54 AM	15.00	0.11	452.88
MW-39-60	66	468.00	12/16/14	7:59 AM	15.22	0.11	452.72
MW-39-70	72	468.02	12/16/14	7:50 AM	15.62	0.20	452.37

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-39-80	83	467.92	12/16/14	7:56 AM	15.52	0.52	452.51
MW-39-100	118	468.12	12/01/14	9:15 AM	15.02	1.20	453.79
MW-40D	266	566.08	04/24/14	11:12 AM	109.85	1.03	456.61
			12/04/14	12:30 PM	111.00	1.03	455.46
MW-40S	134	566.04	11/03/14	10:29 AM	110.16	0.13	455.79
			12/04/14	11:04 AM	110.51	0.13	455.44
MW-41D	312	479.42	04/10/14	5:54 AM	23.27	1.37	457.66
			12/17/14	1:52 PM	24.33	1.37	456.60
MW-41M	190	479.83	11/04/14	7:46 AM	24.38	1.00	455.94
MW-41S	60	480.07	11/03/14	10:43 AM	24.79	0.32	455.22
			11/04/14	9:22 AM	24.77	0.32	455.24
MW-42-30	30	463.74	11/05/14	2:09 PM	10.41	0.28	453.30
MW-42-55	53	463.85	02/11/14	6:33 AM	10.02	0.90	453.99
			04/14/14	6:20 AM	7.38	0.67	456.57
			11/06/14	9:38 AM	9.81	0.67	454.13
MW-42-65	80	463.37	02/11/14	7:57 AM	9.77	0.57	453.70
			04/14/14	6:52 AM	7.20	0.51	456.24
			11/06/14	8:27 AM	9.37	0.51	454.07
MW-43-25	25	462.54	04/15/14	5:19 AM	5.27	0.08	457.24
			11/05/14	8:28 AM	8.50	0.08	454.01
MW-43-75	75	462.71	11/05/14	10:13 AM	9.00	0.90	453.98
MW-43-90	97	462.76	04/15/14	5:52 AM	5.75	1.15	457.54
			11/05/14	11:30 AM	9.34	1.15	453.93
MW-44-70	70	471.90	04/16/14	6:41 AM	15.03	0.16	456.82
			11/11/14	2:35 PM	18.76	0.16	453.09
MW-44-115	114	472.01	02/11/14	11:08 AM	18.86	0.71	453.38
			04/16/14	5:45 AM	16.05	0.72	456.21
			09/23/14	10:30 AM	16.91	0.72	455.39
			11/12/14	8:18 AM	18.68	0.72	453.57
MW-44-125	129	472.04	02/11/14	11:08 AM	18.41	0.74	453.91
			04/16/14	7:24 AM	15.83	0.72	456.49
			11/12/14	7:45 AM	18.15	0.72	454.16
MW-46-175	176	482.16	01/22/14	9:58 AM	30.59	1.17	452.48
			02/11/14	12:55 PM	29.02	1.17	453.95
			04/15/14	11:46 AM	26.72	1.17	456.26
			09/23/14	7:39 AM	27.52	1.17	455.57
			11/13/14	9:55 AM	28.72	1.17	454.25
MW-46-205	207	482.23	04/15/14	9:48 AM	26.95	1.39	456.50
			11/13/14	9:59 AM	28.94	1.39	454.50
MW-47-55	55	484.04	04/23/14	8:10 AM	26.90	0.30	457.10
			11/11/14	12:54 PM	29.37	0.30	454.63

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-47-115	115	484.17	04/23/14	8:40 AM	27.45	0.89	456.94
			11/11/14	12:56 PM	29.80	0.89	454.58
MW-48	138	486.22	02/18/14	6:45 AM	32.61	1.14	453.97
			04/21/14	12:06 PM	30.44	1.16	456.17
			10/30/14	9:15 AM	31.18	1.16	455.43
			10/30/14	9:17 AM	31.19	1.16	455.42
			10/30/14	9:18 AM	31.18	1.16	455.43
MW-49-135	135	484.02	12/22/14	11:54 AM	30.90	---	---
MW-49-275	275	483.95	12/17/14	12:34 PM	31.08	1.73	454.99
MW-49-365	367	484.01	12/17/14	1:36 PM	32.64	2.60	456.28
MW-50-095	95	496.49	04/23/14	10:41 AM	40.00	0.33	456.39
			11/11/14	10:18 AM	41.95	0.33	454.45
MW-50-200	205	496.35	02/26/14	9:44 AM	42.53	1.30	454.62
			05/12/14	6:52 AM	40.84	1.40	456.44
			12/16/14	1:10 PM	43.11	1.40	454.16
MW-51	113	501.56	05/12/14	9:18 AM	45.77	0.70	455.83
			12/15/14	2:58 PM	47.50	0.70	454.13
MW-54-85	93	466.10	04/09/14	7:33 AM	8.42	0.66	457.80
			11/18/14	7:32 AM	11.33	0.66	454.88
MW-54-140	138	465.98	04/09/14	8:08 AM	8.71	0.83	457.63
			11/18/14	8:08 AM	11.28	0.83	455.06
MW-54-195	195	466.32	04/09/14	6:20 AM	9.42	1.25	457.98
			11/18/14	9:08 AM	12.15	1.25	455.23
MW-55-45	54	465.66	11/18/14	11:45 AM	10.20	0.10	455.33
MW-55-120	120	465.46	11/18/14	12:38 PM	10.10	0.57	455.38
MW-57-070	70	509.37	02/24/14	12:39 PM	53.90	0.15	455.41
			04/28/14	5:20 AM	52.55	0.15	456.76
			12/10/14	7:28 AM	53.44	0.15	455.87
MW-57-185	185	508.97	02/13/14	8:50 AM	53.33	1.18	456.17
			04/22/14	8:09 AM	51.68	1.25	457.90
			11/10/14	9:35 AM	52.45	1.25	457.12
MW-58BR	---	---	02/25/14	2:19 PM	67.88	0.51	---
			05/06/14	9:14 AM	66.37	0.56	---
			09/24/14	1:06 PM	66.74	0.56	---
			12/09/14	9:52 AM	67.63	0.56	---
MW-59-100	101	541.61	02/25/14	10:00 AM	86.42	0.66	455.20
			05/07/14	6:58 AM	84.85	0.66	456.77
			11/03/14	11:37 AM	85.45	0.66	456.17
			12/15/14	1:40 PM	85.99	0.66	455.63
MW-60-125	123	555.47	02/24/14	12:54 PM	99.99	0.59	455.47
			05/01/14	11:34 AM	98.45	0.58	457.01

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-60-125	123	555.47	12/10/14	2:06 PM	99.77	0.58	455.69
MW-60BR-245	244	554.95	02/18/14	9:13 AM	99.94	1.14	455.56
			04/28/14	11:16 AM	98.39	1.13	457.10
			09/24/14	6:50 AM	98.80	1.13	456.69
			12/03/14	7:30 AM	99.55	1.13	455.94
MW-61-110	113	544.03	02/19/14	10:56 AM	85.62	1.04	458.50
			04/29/14	10:06 AM	87.12	1.02	456.99
			12/10/14	8:34 AM	88.60	1.02	455.51
MW-62-065	67	503.56	02/20/14	12:30 PM	48.94	0.40	454.59
			04/29/14	11:29 AM	47.07	0.42	456.46
			09/23/14	12:32 PM	48.01	0.42	455.52
			12/09/14	12:48 PM	49.11	0.42	454.43
MW-63-065	66	504.47	02/12/14	1:36 PM	50.04	0.48	454.43
			04/09/14	12:25 PM	47.26	0.48	457.21
			09/22/14	8:13 AM	48.58	0.48	455.89
			11/05/14	7:34 AM	49.52	0.48	454.95
MW-64BR	260	575.60	02/26/14	1:00 PM	120.52	0.88	455.43
			05/06/14	11:38 AM	118.50	0.90	457.47
			09/30/14	10:58 AM	119.80	0.90	456.16
			12/08/14	12:22 PM	121.40	0.90	454.57
MW-65-160	160	596.59	02/19/14	7:19 AM	141.30	0.27	455.23
			04/24/14	7:25 AM	139.80	0.27	456.73
			09/25/14	9:10 AM	140.05	0.27	456.48
			12/03/14	11:58 AM	140.65	0.27	455.88
MW-65-225	225	596.58	02/19/14	7:33 AM	141.31	0.79	455.36
			04/29/14	12:40 PM	139.75	0.75	456.90
			09/25/14	10:40 AM	140.05	0.75	456.60
			12/03/14	12:48 PM	140.70	0.75	455.94
MW-66-165	162	586.16	02/19/14	9:08 AM	131.19	0.28	454.89
			05/01/14	9:08 AM	129.50	0.29	456.58
			12/10/14	11:40 AM	130.59	0.29	455.49
MW-66-230	228	586.22	02/26/14	6:42 AM	131.49	1.24	455.14
			05/07/14	5:47 AM	129.81	1.22	456.81
			12/22/14	7:45 AM	131.17	1.22	455.45
MW-67-185	187	625.91	02/24/14	9:00 AM	170.90	0.30	454.96
			05/05/14	12:16 PM	169.02	0.33	456.84
			11/03/14	9:59 AM	170.00	0.33	455.87
			12/11/14	9:30 AM	170.37	0.33	455.50
MW-67-225	225	625.83	02/24/14	6:56 AM	171.03	0.50	454.74
			05/06/14	6:51 AM	169.18	0.50	456.58
			12/11/14	12:44 PM	170.40	0.50	455.36
MW-67-260	260	625.81	02/24/14	7:22 AM	171.20	1.19	454.94

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
MW-67-260	260	625.81	05/05/14	11:30 AM	169.33	1.14	456.79
			12/11/14	11:48 AM	170.50	1.14	455.61
MW-68-180	180	621.17	02/27/14	7:35 AM	168.03	0.27	453.10
			05/12/14	5:24 AM	164.44	0.25	456.68
			09/30/14	7:43 AM	164.81	0.25	456.31
			12/09/14	11:41 AM	165.49	0.25	455.63
MW-68-240	240	621.17	02/25/14	7:00 AM	166.30	0.99	455.04
			05/06/14	6:11 AM	164.51	1.04	456.87
			12/18/14	8:46 AM	166.05	1.04	455.32
MW-68BR-280	278	620.64	02/27/14	8:05 AM	167.23	1.34	454.02
			05/13/14	6:06 AM	162.90	1.33	458.36
			12/18/14	10:05 AM	165.28	1.33	455.97
MW-69-195	196	631.36	02/19/14	9:50 AM	175.70	0.25	455.60
			05/01/14	7:28 AM	174.13	0.24	457.16
			09/25/14	6:52 AM	174.44	0.24	456.85
			12/11/14	8:30 AM	175.17	0.24	456.13
MW-70-105	108	541.47	02/17/14	1:28 PM	85.43	0.17	455.97
			04/28/14	9:34 AM	84.00	0.23	457.40
			12/02/14	11:49 AM	84.82	0.23	456.59
MW-70BR-225	229	539.84	02/25/14	11:19 AM	83.86	0.88	456.26
			05/05/14	6:25 AM	82.38	0.91	457.77
			12/16/14	6:54 AM	83.53	0.91	456.61
MW-71-035	36	483.69	02/17/14	1:05 PM	29.48	0.52	454.21
			04/23/14	12:15 PM	27.60	0.53	456.09
			11/05/14	9:40 AM	28.56	0.53	455.13
MW-72-080	80	513.32	02/18/14	12:06 PM	58.36	1.04	455.04
			04/24/14	6:05 AM	55.81	1.03	457.60
			09/22/14	10:51 AM	57.63	1.03	455.77
			12/01/14	2:44 PM	59.29	1.03	454.11
MW-72BR-200	200	513.79	02/17/14	10:36 AM	58.20	0.95	456.00
			04/21/14	9:34 AM	56.11	1.01	458.16
			09/24/14	8:22 AM	58.66	1.01	455.60
			11/17/14	9:45 AM	58.88	1.01	455.38
MW-73-080	80	505.84	02/17/14	10:15 AM	50.79	0.71	455.09
			04/28/14	5:40 AM	48.98	0.70	456.90
			09/23/14	10:15 AM	50.02	0.70	455.86
			12/01/14	7:40 AM	53.90	0.70	451.98
MW-74-240	240	672.34	02/24/14	11:20 AM	216.63	0.07	455.63
			04/29/14	6:54 AM	215.00	0.06	457.26
			12/09/14	8:16 AM	215.90	0.06	456.36
OW-3D	273	558.63	11/12/14	7:53 AM	102.08	0.51	456.39

TABLE D-2

Manual Water Level Measurements, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Well Depth (feet BMP)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Elevation Adjusted for Salinity (feet amsl)
Monitoring Wells							
OW-3M	200	558.90	11/12/14	10:00 AM	102.30	0.32	456.39
OW-3S	116	558.58	10/30/14	9:48 AM	102.03	0.08	456.49
			10/30/14	9:49 AM	102.04	0.08	456.48
			10/30/14	9:50 AM	102.03	0.08	456.49
			11/03/14	10:20 AM	102.00	0.08	456.52
			11/12/14	11:08 AM	101.97	0.08	456.55
PGE-7BR	300	---	12/04/14	10:58 AM	110.46	---	---
PGE-8 [a]	564	596.01	01/07/15	11:08 AM	141.10	1.20	456.50
TW-1	271	620.55	02/20/14	7:20 AM	160.00	0.48	460.46
			05/13/14	10:04 AM	160.00	0.47	460.45
			12/22/14	10:28 AM	160.00	0.47	460.45
TW-2S [a]	98	499.05	01/13/15	11:28 AM	40.93	0.22	458.00

Notes:

(---) = data not collected or available.
amsl = above mean sea level.
BMP = below well measure point.

Well depths rounded off to whole foot.

Salinity used to adjust water level to freshwater equivalent. Salinity values have been averaged in accordance with the Performance Monitoring Program.

[a] Fourth Quarter 2014 data was collected January 2015 due to field logistical issues.

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Monitoring Wells						
MW-9	12/02/2014	3,206	28.89	7.37	-68	4.65
MW-10	05/14/2014	3,383	29.10	7.21	57	4.60
	12/02/2014	2,945	29.20	7.40	-66	5.61
MW-11	12/02/2014	2,526	29.16	7.20	-5	7.83
MW-12	05/01/2014	7,711	28.80	8.10	-19	5.03
	12/15/2014	7,006	27.17	7.60	-59	4.62
MW-13	11/13/2014	2,390	28.99	7.28	30	6.31
MW-14	11/12/2014	2,380	31.56	7.54	12	7.61
MW-15	11/11/2014	2,284	32.28	7.35	28	8.57
MW-16	04/22/2014	1,285	30.40	7.64	44	8.99
MW-17	04/23/2014	1,608	29.90	7.92	36	8.15
MW-18	11/13/2014	1,643	30.49	7.45	24	7.50
MW-19	04/28/2014	2,452	28.90	7.32	77	6.91
	12/10/2014	2,458	28.44	7.58	-78	7.04
MW-20-70	05/07/2014	2,144	29.20	7.52	-7	8.58
	12/15/2014	2,049	28.69	7.73	-86	8.13
MW-20-100	05/07/2014	3,269	29.40	7.18	-40	4.19
	12/15/2014	2,801	29.16	7.48	-83	6.98
MW-20-130	05/12/2014	12,960	29.60	7.49	-85	0.97
	12/15/2014	11,340	28.08	7.46	-151	0.87
MW-21	04/22/2014	11,290	28.20	7.16	-194	0.37
	11/11/2014	11,320	28.10	7.12	-13	1.73
MW-22	04/30/2014	12,840	22.90	6.83	-160	0.07
	12/18/2014	29,323	24.32	6.62	-42	0.21
MW-23-060	04/22/2014	18,140	29.20	9.15	21	6.12
	11/10/2014	18,280	29.13	9.18	-62	5.19
MW-23-080	04/22/2014	18,140	29.20	10.06	-60	0.65
	11/10/2014	18,420	29.15	10.03	-220	0.40
MW-24A	11/04/2014	2,126	29.75	8.12	-204	0.18
MW-24B	12/18/2014	19,150	29.00	8.25	-250	0.05
MW-24BR	04/29/2014	16,540	31.90	8.02	-250	0.00
	12/03/2014	16,680	32.23	7.94	-194	0.00
MW-25	12/02/2014	1,967	29.23	7.38	-42	7.20
MW-26	05/05/2014	4,791	30.00	7.28	-8	6.63
	12/15/2014	4,667	28.82	7.44	-60	7.01
MW-27-20	04/14/2014	1,123	17.40	7.54	4	1.60
	11/04/2014	985	21.79	7.50	-21	0.21
MW-27-60	04/14/2014	1,009	18.90	7.55	-189	0.00

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Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Monitoring Wells						
MW-27-60	11/04/2014	977	19.24	7.58	-116	0.19
MW-27-85	04/14/2014	11,470	19.80	7.26	-226	0.00
	11/04/2014	8,893	19.94	7.39	-25	0.25
MW-28-25	04/15/2014	994	20.30	7.33	-236	0.02
	11/11/2014	1,061	22.37	7.09	106	0.12
MW-28-90	04/15/2014	6,929	19.40	7.18	-221	0.10
	11/11/2014	6,117	19.46	7.10	-28	0.06
MW-29	04/16/2014	2,340	24.90	7.27	-168	0.00
	11/10/2014	2,329	24.70	7.31	-111	0.10
MW-30-30	04/14/2014	7,023	22.40	7.78	-261	0.06
	11/10/2014	10,548	23.07	7.56	-117	0.13
MW-30-50	11/10/2014	1,040	21.40	7.58	7	0.03
MW-31-60	05/12/2014	4,555	29.00	7.53	-30	4.80
	12/03/2014	3,212	28.02	7.68	-10	5.70
MW-31-135	11/05/2014	12,960	28.71	7.80	-202	0.40
MW-32-20	11/11/2014	43,426	28.00	6.84	-94	0.02
MW-32-35	04/16/2014	14,010	25.10	7.10	-188	0.00
	11/11/2014	11,596	25.64	7.09	-112	0.05
	12/01/2014	11,700	24.64	7.16	-268	0.06
MW-33-40	04/17/2014	7,011	27.20	8.14	-174	0.12
	11/11/2014	16,551	27.20	7.60	102	0.42
MW-33-90	04/21/2014	10,540	26.60	7.24	-234	0.01
	11/12/2014	10,356	26.93	7.41	139	0.16
MW-33-150	04/17/2014	17,450	27.20	7.49	-285	0.06
	11/12/2014	15,900	26.58	7.41	110	0.50
MW-33-210	04/21/2014	20,510	27.60	7.27	-302	0.00
	11/12/2014	20,519	26.79	7.40	141	0.28
MW-34-55	11/06/2014	827	19.05	7.57	-35	0.08
MW-34-80	04/17/2014	7,112	18.90	7.33	-284	0.02
	11/06/2014	5,841	19.57	7.34	-4	0.06
	12/01/2014	3,621	18.95	7.37	-44	0.05
MW-34-100	01/22/2014	17,390	19.80	6.79	-224	0.04
	04/17/2014	14,650	19.90	7.50	-217	0.02
	10/02/2014	17,650	19.90	7.40	-226	0.01
	12/01/2014	15,300	19.54	7.60	-62	0.00
MW-35-60	04/24/2014	6,586	27.00	7.38	0	1.27
	11/13/2014	7,740	27.66	7.31	-97	0.96
MW-35-135	04/24/2014	11,120	27.20	7.51	-86	0.25

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PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Monitoring Wells						
MW-35-135	11/13/2014	11,130	27.75	7.61	-197	0.32
MW-36-20	12/15/2014	10,640	21.50	7.51	-133	0.09
MW-36-40	12/15/2014	1,104	19.93	7.90	-111	0.13
MW-36-50	12/15/2014	1,118	19.40	7.68	-35	0.14
MW-36-70	12/15/2014	967	19.35	7.76	-24	0.10
MW-36-90	04/17/2014	1,155	21.10	8.21	-310	0.06
	12/15/2014	1,060	19.44	8.45	16	0.13
MW-36-100	04/17/2014	7,690	21.90	7.30	-358	0.09
	11/13/2014	7,144	21.02	7.22	-20	0.08
MW-37D	04/10/2014	16,000	30.23	7.64	-187	0.03
	12/02/2014	16,540	28.40	7.56	-190	0.13
MW-37S	11/12/2014	6,607	29.69	7.58	-88	1.42
MW-38D	05/14/2014	23,250	31.10	8.01	-310	0.00
	11/05/2014	23,500	30.91	8.30	-264	0.00
MW-38S	05/14/2014	2,054	30.00	7.55	-258	0.00
	09/22/2014	1,683	30.40	7.88	---	0.00
	11/05/2014	1,904	29.68	7.79	-257	0.00
MW-39-40	12/16/2014	1,315	21.03	7.99	-130	0.16
MW-39-50	12/16/2014	1,279	21.46	7.80	9	0.10
MW-39-60	12/16/2014	1,409	21.18	8.00	39	0.12
MW-39-70	12/16/2014	2,172	21.74	7.90	25	0.12
MW-39-80	12/16/2014	4,225	22.04	7.65	44	0.09
MW-39-100	12/01/2014	14,410	22.35	6.70	-310	0.01
MW-40D	04/24/2014	17,640	31.50	7.42	-13	0.37
	12/04/2014	18,040	31.95	7.49	-89	0.48
MW-40S	12/04/2014	2,788	30.20	7.24	-37	6.20
MW-41D	04/10/2014	20,800	30.80	7.57	-207	0.01
	12/17/2014	22,450	27.47	7.28	-94	0.14
MW-41M	11/04/2014	16,120	28.28	7.02	-110	0.25
MW-41S	11/04/2014	5,904	28.12	7.59	-105	0.99
MW-42-30	11/05/2014	2,515	23.38	7.96	-165	0.12
MW-42-55	04/14/2014	1,589	21.30	7.95	-212	0.00
	11/06/2014	1,233	21.91	8.18	-71	0.03
MW-42-65	04/14/2014	6,450	21.70	7.33	-220	0.00
	11/06/2014	6,386	22.35	7.37	22	0.17
MW-43-25	04/15/2014	1,500	20.30	7.17	-165	0.04
	11/05/2014	1,479	21.81	7.25	-142	0.23

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Monitoring Wells						
MW-43-75	11/05/2014	10,290	21.90	7.06	-87	0.13
MW-43-90	04/15/2014	17,670	21.20	6.91	-156	0.04
	11/05/2014	17,042	22.26	6.94	-40	0.14
MW-44-70	04/16/2014	1,981	19.10	7.42	-287	0.00
	11/11/2014	1,904	20.19	7.55	29	0.19
MW-44-115	04/16/2014	10,030	20.90	7.79	-299	0.00
	09/23/2014	10,750	21.40	7.95	---	0.24
	11/12/2014	10,393	20.87	7.87	52	0.10
MW-44-125	04/16/2014	8,163	21.10	7.53	-225	0.00
	11/12/2014	6,245	20.70	7.50	-51	0.20
MW-46-175	01/22/2014	18,500	23.00	7.83	-150	0.00
	04/15/2014	18,120	23.50	8.22	-332	0.00
	09/23/2014	17,540	21.60	8.35	-301	0.02
	11/13/2014	17,085	21.56	8.21	65	0.21
MW-46-205	04/15/2014	20,860	24.20	8.25	-418	0.00
	11/13/2014	20,679	21.60	8.14	128	0.17
MW-47-55	04/23/2014	5,189	27.90	7.44	-11	2.22
	11/11/2014	5,707	29.02	7.45	-74	2.05
MW-47-115	04/23/2014	14,120	28.40	7.51	-178	0.10
	11/11/2014	15,350	28.95	7.34	-286	0.03
MW-48	04/23/2014	21,010	30.00	6.57	-196	2.85
	11/06/2014	20,010	28.14	6.96	-83	2.80
MW-49-275	12/17/2014	24,290	24.20	7.99	-154	0.20
MW-49-365	12/17/2014	24,250	24.20	7.82	-188	0.22
MW-50-095	04/23/2014	5,924	29.00	7.65	-10	1.67
	11/11/2014	6,106	29.85	7.49	-73	1.65
MW-50-200	05/12/2014	23,340	30.00	7.74	-7	2.21
	12/16/2014	21,260	28.30	7.72	-7	1.93
MW-51	05/12/2014	12,960	29.90	7.47	-50	1.85
	12/15/2014	13,000	30.41	7.50	-132	1.80
MW-52D	04/30/2014	18,740	20.90	7.72	-259	0.02
	12/17/2014	23,374	19.52	7.85	-150	0.09
MW-52M	04/30/2014	14,450	21.80	7.39	-282	0.04
	12/17/2014	17,177	19.24	7.49	-121	0.04
MW-52S	04/30/2014	8,500	19.90	6.84	-198	0.00
	12/17/2014	9,895	19.15	6.81	-88	0.22
MW-53D	04/30/2014	21,750	19.50	8.16	-255	0.09
	12/17/2014	28,324	18.16	8.16	-152	0.10

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

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Monitoring Wells						
MW-53M	04/30/2014	16,970	19.20	7.91	-242	0.03
	12/17/2014	21,752	18.67	8.03	-159	0.09
MW-54-85	04/09/2014	9,197	26.95	7.57	-217	0.00
	11/18/2014	10,680	26.44	7.32	-220	0.01
MW-54-140	04/09/2014	12,130	25.89	7.70	-225	0.00
	11/18/2014	12,970	26.25	7.70	-240	0.03
MW-54-195	04/09/2014	18,330	25.48	8.03	-241	0.00
	11/18/2014	19,270	26.26	7.89	-288	0.06
MW-55-45	11/18/2014	1,551	27.15	7.44	-266	0.01
MW-55-120	11/18/2014	9,410	27.81	7.70	-87	1.21
MW-56D	04/10/2014	21,160	23.79	7.70	-256	0.11
	12/18/2014	22,283	21.02	7.58	-135	0.21
MW-56M	04/10/2014	15,170	21.96	7.31	-251	0.08
	12/18/2014	15,319	21.25	7.16	-90	0.22
MW-56S	04/10/2014	6,757	22.29	7.04	-234	0.00
	12/18/2014	6,647	21.59	6.99	-72	0.12
MW-57-050	12/10/2014	---				
MW-57-070	04/28/2014	2,779	29.10	6.99	86	4.79
	12/10/2014	3,008	28.76	7.04	-30	4.41
MW-57-185	04/22/2014	20,500	30.20	8.80	-81	0.30
	11/10/2014	20,460	30.19	9.20	-218	0.13
MW-58-065	12/09/2014	---				
MW-58BR	05/06/2014	10,560	28.40	7.58	-270	0.08
	09/24/2014	10,100	29.30	7.53	---	0.00
	12/09/2014	10,200	28.40	7.55	-179	0.02
MW-59-100	05/07/2014	12,770	29.80	7.00	-10	6.54
	12/15/2014	11,930	31.25	7.09	-30	6.71
MW-60-125	05/01/2014	10,330	29.40	7.47	-42	4.04
	12/10/2014	9,956	29.75	7.42	-130	4.08
MW-60BR-245	04/29/2014	19,440	29.60	8.08	-76	1.76
	09/24/2014	17,950	29.40	8.36	---	0.23
	12/03/2014	19,150	29.51	7.79	-243	0.00
MW-61-110	04/29/2014	17,600	29.10	7.45	-161	0.70
	12/10/2014	17,620	29.12	7.14	-123	0.30
MW-62-065	04/29/2014	7,096	29.10	7.40	-1	4.04
	09/23/2014	6,430	29.80	7.37	---	2.84
	12/09/2014	7,010	28.95	7.38	-113	3.04
MW-62-110	05/07/2014	10,080	27.71	7.14	30	0.22

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Monitoring Wells						
MW-62-110	09/23/2014	---	27.90	7.52	---	0.80
	12/09/2014	9,506	27.67	6.85	-50	0.00
MW-62-190	05/07/2014	20,150	28.00	7.16	-65	0.39
	12/09/2014	18,650	27.63	6.74	-59	0.00
MW-63-065	04/09/2014	6,877	26.40	7.12	-1	1.55
	09/22/2014	7,200	25.80	7.16	---	3.01
	11/05/2014	7,641	25.75	6.98	-21	2.50
MW-64BR	05/06/2014	15,790	28.60	7.53	-201	0.42
	09/30/2014	14,920	28.90	7.29	-190	0.30
	12/08/2014	14,500	24.38	7.31	-135	0.40
MW-65-160	04/24/2014	4,671	31.70	7.09	-17	0.76
	09/25/2014	4,033	31.30	7.25	---	0.90
	12/03/2014	4,586	31.78	7.20	-82	1.48
MW-65-225	04/29/2014	14,030	30.70	7.27	-57	0.81
	09/25/2014	16,710	32.60	7.46	---	0.08
	12/03/2014	13,230	30.84	7.38	-60	0.14
MW-66-165	05/01/2014	5,266	30.50	7.16	110	5.55
	12/10/2014	5,109	30.48	7.21	-73	6.04
MW-66-230	05/07/2014	22,360	31.00	7.99	-130	0.36
	12/22/2014	20,470	29.10	7.55	-81	0.48
MW-66BR-270	05/13/2014	20,140	31.40	9.57	-354	0.04
	12/03/2014	19,730	30.94	8.79	-376	0.00
MW-67-185	05/05/2014	7,098	32.50	7.23	-32	5.62
	12/11/2014	7,782	34.25	7.12	-48	4.40
MW-67-225	05/06/2014	8,940	31.20	7.36	-81	2.14
	12/11/2014	8,704	33.69	7.58	-129	2.51
MW-67-260	05/05/2014	19,910	31.20	8.50	-250	0.05
	12/11/2014	20,090	32.04	8.37	-201	0.25
MW-68-180	05/12/2014	4,192	31.30	7.34	34	6.85
	09/30/2014	4,702	30.40	7.30	5	5.92
	12/09/2014	5,148	28.84	7.56	-58	6.53
MW-68-240	05/06/2014	19,330	31.20	7.32	-189	0.07
	12/18/2014	18,960	33.24	7.10	-81	0.04
MW-68BR-280	05/13/2014	23,000	29.60	8.28	-195	2.04
	12/18/2014	21,045	26.63	8.65	-198	2.08
MW-69-195	05/01/2014	4,275	32.10	7.13	53	3.99
	09/25/2014	3,637	31.30	7.28	---	4.16
	12/11/2014	4,128	31.50	7.06	0	4.22

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Monitoring Wells						
MW-70-105	04/28/2014	3,900	29.80	7.78	-130	0.44
	12/02/2014	4,251	30.57	7.69	-240	0.88
MW-70BR-225	05/05/2014	15,640	30.20	7.32	-164	0.02
	12/16/2014	15,190	29.97	7.40	-188	0.00
MW-71-035	04/24/2014	9,178	28.10	7.33	20	5.26
	11/06/2014	21,660	30.99	6.71	-69	3.03
MW-72-080	04/24/2014	17,480	26.80	7.52	-12	0.50
	09/22/2014	16,330	27.20	7.73	---	0.93
	12/01/2014	17,390	27.17	7.62	-276	0.96
MW-72BR-200	04/21/2014	16,650	27.90	8.44	26	0.30
	09/24/2014	16,700	27.80	8.29	---	0.00
	11/17/2014	17,100	27.82	8.18	-302	0.00
MW-73-080	04/29/2014	11,850	26.90	7.07	89	4.00
	09/23/2014	11,780	27.10	7.12	100	4.84
	12/01/2014	11,610	27.20	6.61	11	5.04
MW-74-240	05/01/2014	992	27.90	8.05	-162	0.39
	12/09/2014	998	25.39	8.30	-190	0.48
OW-3D	11/12/2014	10,980	31.45	7.74	-136	0.38
OW-3M	11/12/2014	7,015	31.27	7.66	-109	0.73
OW-3S	11/12/2014	1,735	29.91	7.67	18	7.32
PGE-7BR	12/04/2014	22,840	31.37	6.93	-191	0.00
PGE-8 [a]	01/07/2015	21,410	31.32	8.20	-418	-0.06
Park Moabi-3	12/23/2014	1,597	25.62	7.35	-38	7.75
Park Moabi-4	12/23/2014	2,132	25.22	7.48	-39	6.51
TW-1	05/13/2014	8,353	30.00	7.26	-144	0.89
	12/22/2014	8,318	29.91	7.26	-118	0.89
TW-2D	12/15/2014	6,746	24.76	7.64	99	0.35
TW-2S [a]	01/13/2015	5,082	28.73	7.45	-42	7.49
Shoreline Surface Water Station						
R-19	01/14/2014	674	12.00	8.30	225	9.81
	03/13/2014	925	14.80	8.21	76	10.20
	05/22/2014	1,193	18.20	8.26	-94	9.11
	07/16/2014	951	21.60	6.10	-293	9.78
	11/20/2014	821	16.51	8.05	-28	9.60
R-28	01/14/2014	672	11.40	8.31	168	9.74
	03/13/2014	923	14.40	8.18	78	10.20
	05/22/2014	1,125	18.60	7.32	-38	5.43
	07/16/2014	951	21.56	6.00	-394	9.49

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PG&E Topock Compressor Station, Needles, California

Location	Sampling Date	Specific Conductance (µS/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
Shoreline Surface Water Station						
R-28	11/20/2014	816	16.48	7.85	1	9.62
R63	01/14/2014	673	12.00	7.01	195	10.40
	03/12/2014	922	14.00	8.32	76	10.27
	05/21/2014	757	18.10	8.07	-50	9.07
	07/15/2014	960	22.40	6.69	-253	8.25
	11/19/2014	831	16.45	8.19	-57	9.53
RRB	01/15/2014	908	16.00	7.88	200	0.40
	03/13/2014	925	14.50	8.18	80	10.10
	05/22/2014	1,163	19.20	8.26	-46	8.17
	07/16/2014	977	25.35	7.03	-344	7.99
	11/20/2014	778	13.28	7.51	-9	8.93
Other Surface Water Monitoring Locations						
SW1	01/14/2014	834	7.87	7.86	196	17.13
	03/12/2014	963	13.80	6.55	94	6.27
	05/22/2014	893	18.90	7.36	-41	5.48
	07/16/2014	994	23.90	8.94	-197	6.90
	11/20/2014	828	14.23	7.34	58	9.63
SW2	03/12/2014	934	13.30	7.07	75	8.60
	05/22/2014	870	18.30	7.10	136	8.05
	07/16/2014	969	23.90	8.42	-335	6.88
	11/20/2014	772	13.82	7.40	8	9.04
In-Channel Surface Water Station						
C-BNS-D	01/14/2014	689	12.00	8.10	160	9.84
	03/12/2014	918	14.40	8.31	65	10.10
	05/21/2014	755	17.90	8.17	-26	8.95
	07/15/2014	955	22.00	6.43	-209	8.74
	11/19/2014	842	16.83	8.14	-59	9.20
C-CON-D	01/15/2014	673	12.00	7.69	188	9.80
C-CON-S	01/15/2014	672	11.00	7.74	186	10.00
C-CON-D	03/13/2014	922	14.60	8.31	49	10.00
C-CON-S	03/13/2014	936	16.50	8.27	53	10.00
C-CON-D	05/22/2014	862	18.40	8.11	-22	8.72
C-CON-S	05/22/2014	868	18.60	8.28	-55	8.70
C-CON-D	07/16/2014	951	21.60	6.13	-287	9.54
C-CON-S	07/16/2014	951	21.90	6.00	-295	9.35
C-CON-D	11/20/2014	825	16.65	7.94	-42	8.98
C-CON-S	11/20/2014	826	16.63	7.99	-41	9.27
C-I-3-D	01/14/2014	678	12.00	6.67	203	10.10

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

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In-Channel Surface Water Station						
C-I-3-S	01/14/2014	672	12.00	6.99	197	10.17
C-I-3-D	03/12/2014	917	14.10	8.18	68	10.07
C-I-3-S	03/12/2014	918	14.00	8.16	72	10.20
C-I-3-D	05/21/2014	748	17.70	7.85	-10	9.00
C-I-3-S	05/21/2014	748	17.60	7.94	-10	8.91
C-I-3-D	07/15/2014	952	21.75	4.38	-187	8.86
C-I-3-S	07/15/2014	952	21.60	5.70	-202	9.03
C-I-3-D	11/19/2014	831	16.74	7.95	-47	9.25
C-I-3-S	11/19/2014	829	16.55	7.97	-47	9.21
C-MAR-S	01/15/2014	670	10.00	7.96	197	9.15
C-MAR-D	03/12/2014	917	14.50	8.11	63	6.90
	05/21/2014	759	20.00	8.11	-32	7.18
C-MAR-S	05/21/2014	836	20.10	7.91	-28	7.12
	07/15/2014	1,034	25.40	6.56	-216	7.30
	11/19/2014	960	14.53	7.98	-71	9.75
C-NR1-D	01/15/2014	676	12.00	7.95	181	9.88
C-NR1-S	01/15/2014	677	12.00	8.04	182	11.50
C-NR1-D	03/13/2014	923	14.50	8.25	59	10.00
C-NR1-S	03/13/2014	923	14.60	8.27	62	10.00
C-NR1-D	05/22/2014	1,128	18.80	8.01	-45	8.60
C-NR1-S	05/22/2014	1,158	18.60	8.08	-49	8.70
C-NR1-D	07/16/2014	952	22.00	6.46	-301	9.32
C-NR1-S	07/16/2014	951	22.20	6.36	-298	9.28
C-NR1-D	11/20/2014	830	16.74	8.05	-47	9.29
C-NR1-S	11/20/2014	832	16.85	8.08	-44	9.20
C-NR3-D	01/15/2014	680	12.00	8.11	174	12.20
C-NR3-S	01/15/2014	676	12.00	8.16	172	12.00
C-NR3-D	03/13/2014	923	14.70	8.24	63	10.00
C-NR3-S	03/13/2014	922	14.70	8.27	66	10.00
C-NR3-D	05/22/2014	1,111	18.80	7.93	-15	8.38
C-NR3-S	05/22/2014	1,175	18.90	8.14	-49	8.55
C-NR3-D	07/16/2014	962	23.00	6.43	-281	9.06
C-NR3-S	07/16/2014	953	22.00	6.20	-281	9.15
C-NR3-D	11/20/2014	835	16.93	7.99	-45	9.11
C-NR3-S	11/20/2014	836	16.95	7.99	-45	9.03
C-NR4-D	01/15/2014	676	12.00	8.17	166	11.40
C-NR4-S	01/15/2014	677	12.00	8.17	166	11.50
C-NR4-D	03/13/2014	921	14.70	8.26	65	10.00

TABLE D-3
Field Water Quality Measurements, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

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In-Channel Surface Water Station						
C-NR4-S	03/13/2014	921	14.50	8.27	65	10.00
C-NR4-D	05/22/2014	1,182	18.90	7.95	-39	8.46
C-NR4-S	05/22/2014	1,204	18.70	8.18	-49	8.60
C-NR4-D	07/16/2014	954	22.20	6.42	-293	8.57
C-NR4-S	07/16/2014	952	21.90	6.31	-287	8.99
C-NR4-D	11/20/2014	839	16.95	8.00	-50	8.39
C-NR4-S	11/20/2014	839	16.96	8.04	-50	8.98
C-R22A-D	01/14/2014	673	11.00	7.66	193	9.79
C-R22A-S	01/14/2014	681	12.00	7.98	166	10.70
C-R22A-D	03/12/2014	919	14.40	8.32	51	9.93
C-R22A-S	03/12/2014	919	14.40	8.26	52	9.95
C-R22A-D	05/21/2014	762	18.30	8.12	-21	8.80
C-R22A-S	05/21/2014	762	18.20	7.87	-25	9.48
C-R22A-D	07/15/2014	957	22.60	6.79	-247	8.69
C-R22A-S	07/15/2014	954	22.50	6.20	-237	8.68
C-R22A-D	11/19/2014	834	16.50	8.12	-65	9.44
C-R22A-S	11/19/2014	839	16.50	8.16	-59	9.56
C-R27-D	01/14/2014	685	12.30	8.10	160	9.87
C-R27-S	01/14/2014	677	12.00	8.26	151	10.20
C-R27-D	03/12/2014	918	14.40	8.32	62	10.10
C-R27-S	03/12/2014	918	14.60	8.32	66	10.10
C-R27-D	05/21/2014	759	18.09	8.12	-26	8.87
C-R27-S	05/21/2014	759	18.10	8.13	-26	8.84
C-R27-D	07/15/2014	955	22.10	6.48	-194	8.69
C-R27-S	07/15/2014	955	22.30	6.23	-211	8.55
C-R27-D	11/19/2014	846	16.91	8.09	-73	9.12
C-R27-S	11/19/2014	846	16.95	8.10	-72	9.26
C-TAZ-D	01/14/2014	671	11.80	8.33	160	9.08
C-TAZ-S	01/14/2014	675	12.00	8.31	167	9.30
C-TAZ-D	03/12/2014	909	14.18	7.75	54	10.00
C-TAZ-S	03/12/2014	912	14.04	8.07	64	10.20
C-TAZ-D	05/21/2014	749	17.80	6.90	42	8.90
C-TAZ-S	05/21/2014	777	17.70	7.10	-7	9.32
C-TAZ-D	07/15/2014	950	22.04	5.75	-150	9.22
C-TAZ-S	07/15/2014	951	22.00	6.90	-175	9.36
C-TAZ-D	11/19/2014	824	16.53	7.74	-4	9.40
C-TAZ-S	11/19/2014	826	16.52	7.97	-31	9.44

Notes:

(---) = data not collected, not available, or rejected.
°C = degree Celsius.
ORP = oxidation reduction potential, results rounded off to whole point.
mV = millivolts.
mg/L = milligrams per liter.
ORP = oxidation reduction potential, results rounded off to whole point.
µS/cm = microSiemens per centimeter.

All field measurements were collected during groundwater and surface water sampling using a YSI multi-parameter water quality meter, or an in situ multi-parameter water quality meter.

[a] Fourth Quarter 2014 data was collected January 2015 due to field logistical issues.

TABLE D-4

Additional Water Quality Characterization, December 2013 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-9	09-Dec-13	---	---	590	---	240	130	---	120	30.0	---	440	---
	02-Dec-14	---	---	670	ND (0.500)	240	140	1700	120	27.0	---	380	0.620
MW-10	12-Dec-13	---	---	540	---	270	140	---	88.0	13.0	---	500	---
	02-Dec-14	---	---	560	0.650	270	110	1500	120	16.0	---	390	0.710
MW-11	02-Dec-14	---	---	510	0.540	190	85.0	1400	120	17.0	---	280	0.420
	02-Dec-14 FD	---	---	520	0.580	190	82.0	1300	120	17.0	---	290	0.440
MW-12	10-Dec-13	---	---	1800	---	460	120	---	37.0	6.80	---	1600	---
	15-Dec-14	---	---	1700	0.640	440	130	4100	33.0	6.00	---	1100	0.950
MW-13	13-Nov-14	---	---	510	ND (0.500)	150	69.0	1200	100	12.0	---	300	0.340
MW-14	19-Dec-13	---	---	410	---	100	86.0	---	77.0	11.0	---	270	---
	12-Nov-14	---	---	500	ND (0.500)	100	73.0	1000	95.0	13.0	---	280	0.290
MW-15	11-Nov-14	---	---	440	ND (0.500)	140	77.0	1100	120	26.0	---	210	0.240
MW-16	22-Apr-14	---	---	---	---	---	---	---	24.0	4.30	---	---	0.250
MW-17	23-Apr-14	---	---	---	---	---	---	---	61.0	9.00	---	---	0.190
MW-18	13-Nov-14	---	---	320	ND (0.500)	92.0	97.0	790	81.0	12.0	---	170	0.180
MW-19	05-Dec-13	---	---	510	---	170	92.0	---	94.0	15.0	---	350	---
	10-Dec-14	---	---	500	ND (0.500)	170	95.0	1300	92.0	14.0	---	310	0.340
MW-20-70	11-Dec-13	-8.12	-63.88	390	ND (0.500)	260	91.0	1200	70.0	17.0	15.0	580	0.510
	15-Dec-14	-8.07	-63.10	330	ND (0.500)	230	100	1100	49.0	12.0	4.40	310	0.430
MW-20-100	11-Dec-13	-7.46	-55.86	550	ND (0.500)	290	110	1600	140	23.0	8.20	400	1.00
	15-Dec-14	-7.62	-60.20	530	ND (0.500)	260	120	1500	120	18.0	6.40	340	0.760
MW-20-130	17-Dec-13	-6.40	-57.69	3200	ND (1.00)	1100	80.0	7400	330	22.0	26.0	2300	2.30
	17-Dec-13 FD	-6.52	-59.15	3200	ND (1.00)	1100	78.0	7300	330	21.0	27.0	2400	2.70
	15-Dec-14	-6.70	-59.60	2800	ND (2.50)	1100	85.0	6900	310	21.0	24.0	1800	1.90

TABLE D-4

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Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-20-130	15-Dec-14 FD	-6.76	-59.60	2900	ND (2.50)	1100	85.0	6800	290	20.0	21.0	1700	1.80
MW-21	11-Nov-14	---	---	1900	2.10	1700	810	5900	200	51.0	---	2200	3.90
MW-22	18-Dec-14	-10.19	-84.10	9100	ND (5.00)	2200	640	20000	920	180	---	4800	2.10
MW-24BR	03-Dec-13	---	---	4700	---	460	46.0	---	120	3.30	---	3200	---
MW-25	09-Dec-13	-9.02	-68.72	310	ND (0.500)	140	160	980	98.0	20.0	8.20	220	0.430
	02-Dec-14	-9.21	-67.90	350	ND (0.500)	140	150	970	100	19.0	7.70	210	0.390
MW-26	04-Dec-13	-8.41	-64.08	890	1.00	520	110	2600	160	41.0	12.0	670	0.930
	15-Dec-14	-8.33	-67.30	910	1.10	530	110	2700	150	33.0	---	470	0.790
	15-Dec-14 FD	-8.31	-66.90	910	1.00	530	110	2700	150	34.0	---	450	0.820
MW-27-20	04-Nov-14	---	---	84.0	ND (0.500)	220	150	650	78.0	23.0	---	89.0	0.100
MW-27-60	04-Nov-14	---	---	77.0	ND (0.500)	110	320	650	92.0	20.0	---	100	0.120
	04-Nov-14 FD	---	---	76.0	ND (0.500)	110	320	640	98.0	21.0	---	110	0.160
MW-27-85	04-Nov-14	---	---	2400	ND (1.00)	940	240	5800	230	39.0	---	1900	1.00
MW-28-25	11-Nov-14	---	---	91.0	ND (0.500)	250	200	730	100	27.0	---	86.0	0.140
MW-28-90	11-Nov-14	---	---	1800	ND (1.00)	550	260	3900	260	39.0	---	1200	0.850
MW-29	10-Nov-14	---	---	270	ND (0.500)	420	420	1500	150	51.0	---	330	0.390
MW-30-30	10-Nov-14	---	---	2200	0.700	1700	970	5800	130	85.0	---	2300	2.20
MW-30-50	10-Nov-14	-12.42	-104.02	120	ND (0.500)	200	190	700	64.0	15.0	---	140	0.160
	10-Nov-14 FD	-12.51	-102.50	120	ND (0.500)	200	160	700	64.0	15.0	---	140	0.180
MW-31-60	03-Dec-13	-8.56	-66.39	870	ND (0.500)	220	78.0	1900	140	24.0	6.40	520	0.480
	03-Dec-14	-8.83	-68.50	790	ND (0.500)	210	140	1700	120	19.0	5.20	430	0.400
MW-31-135	05-Nov-14	-9.49	-74.65	3700	ND (1.00)	450	36.0	6700	360	20.0	---	2200	1.10
MW-32-20	16-Dec-13	---	---	13000	---	5400	1500	---	970	530	---	11000	---

TABLE D-4

Additional Water Quality Characterization, December 2013 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-32-35	11-Nov-14	-10.39	-87.84	3100	ND (0.500)	1500	550	5800	450	170	18.0	2000	1.10
MW-33-40	03-Dec-13	---	---	2600	---	930	320	---	38.0	47.0	---	2200	---
	11-Nov-14	---	---	4000	ND (0.500)	1500	420	8000	79.0	85.0	---	3400	2.70
MW-33-90	03-Dec-13	-9.74	-76.95	3000	---	720	74.0	---	320	29.0	---	1900	---
	12-Nov-14	-9.90	-76.72	2900	ND (2.50)	710	100	4500	320	25.0	---	1800	0.940
MW-33-150	03-Dec-13	-10.30	-79.68	5500	---	890	52.0	---	550	52.0	---	3500	---
	12-Nov-14	-10.15	-77.66	4800	ND (2.50)	800	55.0	8400	410	39.0	---	3000	1.00
MW-33-210	03-Dec-13	-10.46	-81.24	6400	---	1200	57.0	---	600	60.0	---	3800	---
	03-Dec-13 FD	-11.01	-82.58	6300	---	1200	57.0	---	620	61.0	---	4100	---
	12-Nov-14	-10.74	-81.88	6400	ND (2.50)	1300	59.0	9000	630	59.0	---	3900	1.30
MW-34-55	06-Nov-14	-12.43	-101.86	76.0	ND (0.500)	200	140	640	72.0	20.0	4.00	85.0	ND (0.100)
MW-34-80	06-Nov-14	-11.60	-90.90	---	---	---	280 J	---	240	50.0	12.0	1200	0.840
MW-34-100	01-Dec-14	-9.97	-76.95	5400	ND (1.00)	1100	95.0	9900	140	5.60	30.0	3900	2.20
	01-Dec-14 FD	-10.10	-77.20	5500	ND (1.00)	1100	100	9900	140	5.60	32.0	4000	2.00
MW-35-60	13-Nov-14	-10.15	-73.74	2100	ND (2.50)	350	54.0	3600	310	30.0	---	1200	0.680
MW-35-135	13-Nov-14	-10.00	-80.90	3000	ND (1.00)	660	47.0	5500	280	28.0	---	1800	0.680
MW-36-20	15-Dec-14	---	---	1700	0.540	2400	1300	7700	120	150	---	2100	1.60
MW-36-50	15-Dec-14	---	---	130	ND (0.500)	190	200	720	82.0	17.0	---	100	0.180
MW-36-100	16-Dec-13	-11.19	-88.64	2200	---	720	240	---	210	32.0	---	1800	---
	13-Nov-14	-12.47	-93.11	2100	ND (0.500)	660	250	4400	180	23.0	---	1400	0.920
MW-37D	02-Dec-13	---	---	5000	---	630	33.0	---	420	22.0	---	3100	---
	02-Dec-14	---	---	5000	ND (2.50)	650	36.0	7400	420	18.0	---	2900	1.40
MW-37S	12-Nov-14	---	---	1600	ND (1.00)	290	42.0	3100	200	22.0	---	1000	0.700

TABLE D-4

Additional Water Quality Characterization, December 2013 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-38D	14-May-14	---	---	---	---	---	31.0	14000	---	---	---	---	---
	05-Nov-14	---	---	7600	ND (2.50)	690	30.0	12000	400	6.80	---	2400	2.20
MW-38S	03-Dec-13	---	---	270	---	200	190	---	29.0	5.60	---	340	---
	14-May-14	---	---	---	---	---	190	950	---	---	---	---	---
	05-Nov-14	---	---	280	0.580	160	180	950	26.0	4.30	---	300	0.920
MW-39-70	16-Dec-14	-12.41	-99.40	320	ND (0.500)	250	260	1200	27.0	5.40	---	440	0.330
MW-39-100	04-Dec-13	-10.41	-80.70	4800	---	1500	300	---	580	82.0	---	3300	---
	04-Dec-13 FD	-10.38	-80.92	4800	---	1400	300	---	510	81.0	---	3400	---
	01-Dec-14	-10.36	-81.16	4800	ND (2.50)	1400	270	9500	500	65.0	---	3200	1.80
MW-40D	02-Dec-13	---	---	5000	---	710	46.0	---	390	40.0	---	3100	---
	04-Dec-14	---	---	5200	ND (2.50)	690	47.0	10000	400	32.0	---	3100	1.60
MW-41D	17-Dec-14	---	---	7400	ND (2.50)	750	39.0	14000	400	22.0	---	3700	1.50
MW-41M	04-Nov-14	---	---	4800	ND (2.50)	520	---	8700	420	28.0	---	2800	1.10
	04-Nov-14 FD	---	---	4800	ND (2.50)	510	28.0 J	8200	440	29.0	---	2800	1.20
MW-41S	04-Nov-14	---	---	1600	ND (0.500)	270	52.0	3100	130	15.0	---	950	0.740
MW-42-30	05-Nov-14	-11.52	-95.09	---	---	---	---	---	---	---	---	---	---
MW-42-65	06-Nov-14	-12.06	-97.57	1600	ND (0.500)	550	400	3900	140	27.0	---	1300	0.750
MW-43-25	05-Nov-14	---	---	140	0.510	340	270	1000	110	53.0	---	140	0.140
MW-43-90	05-Nov-14	---	---	5300	ND (2.50)	1500	280	11000	560	160	---	3400	1.70
MW-44-70	02-Dec-13	-12.06	-97.56	350	---	240	280	---	41.0	7.00	---	430	---
	11-Nov-14	-11.94	-99.23	340	ND (0.500)	230	270	1200	41.0	6.80	---	400	0.350
MW-44-115	02-Dec-13	-10.29	-81.86	3200	---	770	76.0	---	110	6.30	---	2400	---
	12-Nov-14	-10.90	-81.64	3300	ND (0.500)	820	92.0	6400	120	5.70	---	2300	1.60

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Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-44-125	02-Dec-13	-10.65	-83.10	3100	---	630	93.0 J	---	110	9.10	---	2500	---
	02-Dec-13 FD	-10.46	-82.86	3300	---	630	120 J	---	99.0	8.20	---	2300	---
MW-45-095a	02-Dec-13	---	---	2400	---	680	160	---	160	22.0	---	1900	---
MW-46-175	13-Nov-14	-9.88	-79.89	5700	ND (2.50)	780	39.0	9900	120	2.60	---	3900	1.90
MW-47-55	11-Nov-14	-8.46	-70.06	1400	ND (1.00)	260	62.0	2600	220	27.0	---	730	0.540
MW-47-115	11-Nov-14	-10.10	-78.08	4400	ND (2.50)	750	51.0	6500	420	30.0	---	2600	1.00
MW-49-135	22-Dec-14	-10.43	-81.30	4200	ND (2.50)	700	59.0	7100	310	25.0	---	2500	0.660
MW-49-275	17-Dec-14	-10.63	-82.80	8800	ND (2.50)	1400	37.0	16000	230	4.60	---	4900	2.10
MW-50-095	11-Nov-14	---	---	1400	ND (0.500)	280	55.0	3000	130	12.0	---	950	0.750
MW-50-200	17-Dec-13	---	---	6800	---	940	39.0	---	570	30.0	---	4300	---
	16-Dec-14	---	---	6800	ND (2.50)	870	36.0	13000	510	25.0	---	3400	1.50
MW-51	11-Dec-13	---	---	3100	---	670	96.0	---	250	16.0	---	2300	---
	15-Dec-14	---	---	3400	ND (1.00)	660	94.0	7200	240	14.0	---	2100	1.30
MW-54-85	18-Nov-14	---	---	3350	2.53	636	158	6320	168	97.4	---	2000	1.16
	18-Nov-14 FD	---	---	3330	2.00	634	151	6020	170	84.5	---	2010	1.14
MW-54-140	18-Nov-14	---	---	4260	2.77	571	97.8	7470	132	12.6	---	2710	1.66
MW-54-195	18-Nov-14	---	---	6610	4.20	1080	58.3	13300	119	4.58	---	4500	2.55
MW-55-45	18-Nov-14	---	---	325	ND (0.500)	62.1	198	784	38.4	9.98	---	259	0.561
MW-55-120	18-Nov-14	---	---	2870	1.42	341	60.5	5120	86.2	1.92	---	1800	1.59
MW-57-070	12-Dec-13	---	---	610	---	100	89.0	---	300	20.0	---	96.0	---
MW-58BR	17-Dec-13	---	---	2700	---	510	43.0	---	550	28.0	---	1400	---
	09-Dec-14	---	---	2900	ND (2.50)	540	39.0	6000	550	26.0	---	1400	0.940
MW-59-100	10-Dec-13	---	---	2900	---	640	120	---	690	21.0	---	1500	---

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Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-59-100	15-Dec-14	---	---	3100	ND (5.00)	650	120	6900	680	18.0	---	1400	1.10
	15-Dec-14 FD	---	---	3100	ND (5.00)	650	120	6800	720	19.0	---	1400	1.10
MW-60-125	04-Dec-13	---	---	2700	---	470	47.0	---	550	26.0	---	1500	---
MW-60BR-245	04-Dec-13	---	---	5800	---	770	28.0	---	420	6.30	---	3800	---
MW-61-110	05-Dec-13	---	---	5300	---	700	45.0	---	720	19.0	---	3100	---
	05-Dec-13 FD	---	---	5100	---	720	47.0	---	730	20.0	---	3200	---
MW-62-065	11-Dec-13	---	---	1700	---	400	100	---	230	25.0	---	1100	---
MW-63-065	04-Dec-13	---	---	1800	---	590	190	---	200	21.0	---	1400	---
MW-64BR	16-Dec-13	---	---	4400	---	580	56.0	---	420	17.0	---	2800	---
	08-Dec-14	---	---	4700	ND (2.50)	610	57.0	9100	430	16.0	---	2700	1.70
MW-65-160	02-Dec-13	---	---	930	---	450	120	---	230	30.0	---	590	---
	03-Dec-14	---	---	900	ND (1.00)	430	130	2400	230	25.0	---	510	0.850
MW-65-225	02-Dec-13	---	---	3100	---	760	93.0	---	370	20.0	---	2200	---
	03-Dec-14	---	---	5200	ND (2.50)	870	56.0	10000	480	17.0	---	3400	2.10
MW-66-165	03-Dec-13	---	---	1100	---	480	87.0	---	290	53.0	---	610	---
	10-Dec-14	---	---	1000	ND (2.50)	490	91.0	2800	290	48.0	---	530	0.600
MW-66-230	12-Dec-13	---	---	6200	---	1100	36.0	---	440	5.80	---	4100	---
	22-Dec-14	---	---	6200	ND (2.50)	1100	32.0	12000	430	4.60	---	3900	1.70
MW-66BR-270	17-Dec-13	---	---	6200	---	280	17.2	---	310	18.0	---	3900	---
MW-67-185	04-Dec-13	---	---	1400	---	590	110	---	270	52.0	---	890	---
	11-Dec-14	---	---	1600	3.70	570	100	4000	350	60.0	---	870	0.750
MW-67-225	09-Dec-13	---	---	1600	---	1000	140	---	170	8.60	---	1600	---
	11-Dec-14	---	---	1500	1.30	1100	150	4500	140	6.80	---	1400	1.30

TABLE D-4

Additional Water Quality Characterization, December 2013 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
MW-67-260	09-Dec-13	---	---	5600	---	790	33.0	---	320	3.30	---	4100	---
	11-Dec-14	---	---	6000	ND (2.50)	790	30.0	11000	320	3.60	---	3500	2.60
MW-68-180	12-Dec-13	---	---	740	---	950	79.0	---	380	38.0	---	570 J	---
	12-Dec-13 FD	---	---	780	---	970	77.0	---	390	39.0	---	340 J	---
	09-Dec-14	---	---	820	ND (2.50)	1100	84.0	3400	420	40.0	---	530	0.450
MW-68-240	04-Dec-13	---	---	5600	---	890	62.0	---	570	19.0	---	3300	---
	18-Dec-14	---	---	5200	ND (2.50)	850	67.0	11000	530	17.0	---	3100 J	1.70
MW-68BR-280	18-Dec-13	---	---	6900	---	720	25.0	---	390	4.90	---	4400	---
MW-69-195	03-Dec-13	---	---	600	---	630	230	---	120	12.0	---	710	---
MW-70-105	04-Dec-13	---	---	900	---	240	90.0	---	90.0	9.10	---	650	---
MW-70BR-225	10-Dec-13	---	---	4200	---	770	35.0	---	750	30.0	---	2200	---
MW-71-035	11-Dec-13	---	---	2500	---	570	72.0	---	340	25.0	---	1600	---
	06-Nov-14	---	---	5500	ND (5.00)	1200	240	11000	880	68.0	---	3100	2.20
MW-72-080	04-Dec-13	---	---	5100	---	710	45.0	---	370	9.40	---	3400	---
MW-73-080	05-Dec-13	---	---	3500	---	430	85.0	---	530	33.0	---	2100	---
MW-74-240	05-Dec-13	---	---	130	---	77.0	150	---	9.40	1.20	---	200	---
OW-3D	12-Nov-14	---	---	2900	ND (1.00)	420	35.0	5000	220	15.0	---	1900	1.20
OW-3M	12-Nov-14	---	---	1700	ND (0.500)	320	50.0	3000	110	8.00	---	1200	0.910
PE-1	03-Dec-13	---	---	1160	---	408	238 J	2560	115	23.5	---	890	---
	07-Jan-14	---	---	1120	---	429	221	2680	100	21.3	---	866	---
	04-Feb-14	---	---	1110	---	418	217	2630	118	23.7	---	747	---
	04-Mar-14	---	---	1090	---	391	215	2510	106	24.8	---	773	---
	08-Apr-14	---	---	1050	---	376	218	2700	119	24.2	---	817	---
	06-May-14	---	---	1170	---	395	178	2680	126	23.4	---	802	---

TABLE D-4

Additional Water Quality Characterization, December 2013 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
PE-1	03-Jun-14	---	---	1140	---	396	224	2610	110	24.0	---	762	---
	01-Jul-14	---	---	1060	---	379	237	2500	106	22.7	---	805	---
	05-Aug-14	---	---	1030	---	385	221	2560	112	24.4	---	786	---
	02-Sep-14	---	---	1140	---	387	215	2610	104	21.0	---	848	---
	07-Oct-14	---	---	962	---	391	216	2580	110	23.5	---	772	---
	04-Nov-14	---	---	970	---	387	220	2500	101	24.0	---	723	---
	02-Dec-14	---	---	1040	---	385	227	2560	108	24.7	---	794	---
PGE-7BR	10-Dec-13	---	---	6900	---	520	6.60	---	480	11.0	---	4400	---
PGE-8	18-Dec-13	---	---	6000	---	1800	52.0	---	760	18.0	---	3800	---
Park Moabi-3	19-Dec-13	---	---	290	---	61.0	95.0	---	72.0	14.0	---	150	---
Park Moabi-4	19-Dec-13	---	---	530	---	110	65.0	---	97.0	18.0	---	280	---
R-28	20-Nov-14	-12.26	-99.96	85.0	ND (0.500)	230	130	620	68.0	23.0	4.50	88.0	0.130
TW-1	17-Dec-13	---	---	1900	---	760	110	---	310	21.0	---	1300	---
TW-2D	19-Dec-13	---	---	2400	---	490	180	---	250	37.0	---	1700	---
TW-2S	19-Dec-13	---	---	850	---	230	140	---	74.0	17.0	---	370	---
TW-3D	03-Dec-13	---	---	2470	---	550	148 J	4860	231	32.3	---	1620	---
	07-Jan-14	---	---	2660	---	560	137	5140	220	32.0	---	1540	---
	04-Feb-14	---	---	2630	---	577	135	5190	230	37.2	---	1800	---
	04-Mar-14	---	---	2560	---	558	150	5050	234	39.2	---	1490	---
	08-Apr-14	---	---	2440	---	528	145	5210	235	35.7	---	1490	---
	06-May-14	---	---	2520	---	541	77.0	4820	236	30.4	---	1480	---
	03-Jun-14	---	---	2360	---	535	134 J	4750	212	31.7	---	1540	---
	01-Jul-14	---	---	2410	---	531	136	4970	198	30.0	---	1570	---
	05-Aug-14	---	---	2370	---	536	154	4830	213	30.6	---	1620	---

TABLE D-4

Additional Water Quality Characterization, December 2013 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Metals (mg/L)				
									Calcium	Magnesium	Potassium	Sodium	Boron
TW-3D	02-Sep-14	---	---	2360	---	525	134	5150	211	28.3	---	1640	---
	07-Oct-14	---	---	2340	---	540	136	5000	215	33.0	---	1510	---
	04-Nov-14	---	---	2440	---	478	157	4980	208	31.4	---	1350	---
	02-Dec-14	---	---	2440	---	547	143	4810	212	34.6	---	1580	---

Notes:

(---) = data not collected, rejected, or available.
0/00 = differences from global standards in parts per thousand.
FD = field duplicate sample.
J = concentration or reporting limit estimated by laboratory or data validation.
mg/L = milligrams per liter
ND = not detected at the listed reporting limit.

Alkalinity (total) reported as calcium carbonate.

TABLE D-5
Additional Results from Trial Wells for Fourth Quarter 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date		Total Dissolved Solids	Specific Conductance	General Chemistry				Alkalinity (total)	Dissolved Metals (µg/L)										
					Chloride	Sulfate	Nitrate/Nitrite	Bromide		Hexavalent Chromium	Chromium Total	Arsenic	Boron	Calcium	Iron	Magnesium	Manganese	Molybdenum	Sodium	Selenium
MW-38D	05-Nov-14	MP	13000	20000	7700	690	ND (0.050)	ND (2.5)	31.0	18.0	17.0	7.00	2.30	440	ND (0.020)	5.90	73.0	90.0	2300	ND (2.5)
	05-Nov-14	3V	12000	20000	7600	690	0.0680	ND (2.5)	30.0	17.0	15.0	7.40	2.20	400	0.0220	6.80	88.0	86.0	2400	ND (12)
MW-38S	05-Nov-14	MP	940	1600	270	170	ND (0.050)	0.580	180	ND (0.20)	ND (1.0)	16.0	0.990	28.0	0.0820	4.60	220	49.0	300	ND (0.50)
	05-Nov-14	3V	950	1500	280	160	ND (0.050)	0.580	180	ND (0.20)	ND (1.0)	13.0	0.920	26.0	0.0840	4.30	210	46.0	300	ND (0.50)
MW-40D	04-Dec-14	MP	10000	13000	5200	690	3.30	ND (2.5)	47.0	160	140	4.50	1.60	400	ND (0.020)	32.0	ND (0.50)	59.0	3100	1.70
	04-Dec-14	H	10000	13000	5500	640	3.10	ND (2.5)	53.0	73.0	67.0	6.00	1.80	410	ND (0.020)	23.0	7.40	66.0	3300	ND (2.5)
MW-40S	04-Dec-14	MP	---	2100	---	---	3.80	---	---	7.60	7.10	1.20	---	---	---	---	ND (0.50)	8.50	---	2.00
	04-Dec-14	H	---	2100	---	---	3.80	---	---	7.00	6.70	1.20	---	---	---	---	ND (0.50)	7.60	---	1.70

NOTES:

ND =parameter not detected at the listed reporting limit.
--- = data not collected or available.
3V = three volume.
H = hydrosleeve
MP = minimal drawdown/micro purge.
µg/L = micrograms per liter.

General chemistry results in milligrams per liter (mg/L), except Specific conductance which is in µS/cm.

Nitrate and Nitrate/Nitrite reported as Nitrogen.

Alkalinity bicarbonate result equals Alkalinity (total) result. Alkalinity (total) shown on table. Alkanlity carbonate result and hydroxide result are ND at 5 mg/L.

Appendix E
Hydraulic Data for Interim Measures Reporting Period

TABLE E-1

Average Monthly and Quarterly Groundwater Elevations, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	November 2014	December 2014	Quarter Average	Days in Quarter Average
I-3	River Station	454.22	452.93	453.56	61
MW-20-070	Shallow Zone	453.32	452.57	452.94	61
MW-20-100	Middle Zone	452.84	452.41	INC	37
MW-20-130	Deep Zone	452.47	452.19	INC	31
MW-22	Shallow Zone	454.28	453.78	454.03	61
MW-25	Shallow Zone	454.98	454.44	454.71	61
MW-26	Shallow Zone	454.70	454.19	454.44	61
MW-27-020	Shallow Zone	454.09	453.15	453.74	47
MW-27-060	Middle Zone	454.08	452.95	453.51	61
MW-27-085	Deep Zone	454.11	452.99	453.54	61
MW-28-025	Shallow Zone	454.10	452.96	453.52	61
MW-28-090	Deep Zone	454.23	453.13	453.67	61
MW-30-050	Middle Zone	453.86	452.88	453.36	61
MW-31-060	Shallow Zone	454.12	453.33	453.72	61
MW-31-135	Deep Zone	453.43	452.61	453.01	61
MW-32-035	Shallow Zone	453.97	453.06	453.51	61
MW-33-040	Shallow Zone	454.13	453.17	453.64	61
MW-33-090	Middle Zone	454.41	453.44	453.92	61
MW-33-150	Deep Zone	454.42	453.53	453.97	61
MW-34-055	Middle Zone	454.13	452.95	453.53	61
MW-34-080	Deep Zone	454.23	452.99	453.60	61
MW-34-100	Deep Zone	453.86	452.74	453.29	61
MW-35-060	Shallow Zone	454.67	453.68	454.17	61
MW-35-135	Deep Zone	455.16	454.35	454.75	61
MW-36-020	Shallow Zone	454.04	453.03	453.53	61
MW-36-040	Shallow Zone	453.93	452.86	453.39	61
MW-36-050	Middle Zone	453.86	452.80	453.32	61
MW-36-070	Middle Zone	453.93	452.81	453.36	61
MW-36-090	Deep Zone	453.09	452.09	452.58	61
MW-36-100	Deep Zone	453.38	452.38	452.87	61
MW-39-040	Shallow Zone	453.85	452.84	453.33	61
MW-39-050	Middle Zone	453.68	452.69	453.18	61
MW-39-060	Middle Zone	453.51	452.54	453.02	61
MW-39-070	Middle Zone	453.15	452.22	452.67	61
MW-39-080	Deep Zone	453.29	452.37	452.82	61
MW-39-100	Deep Zone	453.84	452.90	453.36	61
MW-42-030	Shallow Zone	453.72	453.11	INC	36
MW-42-065	Middle Zone	453.86	452.86	453.35	61
MW-43-025	Shallow Zone	454.04	452.90	453.46	61
MW-43-090	Deep Zone	454.42	453.26	453.83	61
MW-44-070	Middle Zone	454.03	452.91	453.46	61
MW-44-115	Deep Zone	453.65	452.68	453.16	61
MW-44-125	Deep Zone	454.18	453.19	453.68	61
MW-45-095a	Deep Zone	452.77	451.66	452.21	61
MW-46-175	Deep Zone	454.33	453.41	453.86	61
MW-47-055	Shallow Zone	454.66	453.80	454.22	61
MW-47-115	Deep Zone	454.75	453.92	454.33	61
MW-49-135	Deep Zone	454.77	453.83	454.29	61

TABLE E-1

Average Monthly and Quarterly Groundwater Elevations, Fourth Quarter 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	November 2014	December 2014	Quarter Average	Days in Quarter Average
MW-50-095	Middle Zone	454.42	453.98	INC	37
MW-51	Middle Zone	454.67	454.13	454.40	61
MW-54-085	Deep Zone	454.56	453.45	454.00	60
MW-54-140	Deep Zone	454.86	454.43	INC	33
MW-54-195	Deep Zone	455.00	454.20	454.60	60
MW-55-045	Middle Zone	455.37	455.05	455.21	60
MW-55-120	Deep Zone	455.42	455.10	455.26	60
PT2D	Deep Zone	INC	451.85	INC	22
PT5D	Deep Zone	453.42	452.46	452.93	61
PT6D	Deep Zone	453.47	452.52	452.99	61
RRB	River Station	454.56	453.44	INC	48

Notes:

Averages reported in ft amsl (feet above mean sea level).

Quarterly Average = average of daily averages over reporting period.

INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction.

TABLE E-2

Average, Minimum, and Maximum Groundwater Elevations, January 2014 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Minimum[a] (ft amsl)	Maximum[a] (ft amsl)	Average[a] (ft amsl)	Number of Days Reporting Data
I-3	River Station	452.25	457.90	455.32	365
MW-20-070	Shallow Zone	452.07	456.27	454.08	365
MW-20-100	Middle Zone	451.51	456.44	453.73	341
MW-20-130	Deep Zone	450.94	456.25	453.20	289
MW-22	Shallow Zone	453.29	456.55	454.97	365
MW-25	Shallow Zone	454.00	456.68	455.53	365
MW-26	Shallow Zone	453.64	456.38	455.21	365
MW-27-020	Shallow Zone	452.54	457.69	455.30	314
MW-27-060	Middle Zone	452.38	457.57	455.12	365
MW-27-085	Deep Zone	452.42	457.62	455.14	365
MW-28-025	Shallow Zone	452.39	457.59	455.17	365
MW-28-090	Deep Zone	452.54	457.50	455.23	365
MW-30-050	Middle Zone	452.28	457.13	454.81	365
MW-31-060	Shallow Zone	452.88	456.68	454.82	332
MW-31-135	Deep Zone	452.11	456.83	454.25	365
MW-32-035	Shallow Zone	452.57	457.15	454.95	365
MW-33-040	Shallow Zone	452.64	457.04	455.15	359
MW-33-090	Middle Zone	452.97	457.21	455.35	365
MW-33-150	Deep Zone	453.02	457.34	455.31	365
MW-34-055	Middle Zone	452.35	457.59	455.18	365
MW-34-080	Deep Zone	452.41	457.63	455.20	365
MW-34-100	Deep Zone	452.16	457.61	454.92	365
MW-35-060	Shallow Zone	453.19	457.73	455.51	325
MW-35-135	Deep Zone	453.90	457.46	455.87	330
MW-36-020	Shallow Zone	452.50	456.96	454.96	365
MW-36-040	Shallow Zone	452.31	457.23	454.93	365
MW-36-050	Middle Zone	452.24	457.20	454.87	365
MW-36-070	Middle Zone	452.23	457.00	454.71	325
MW-36-090	Deep Zone	451.55	457.04	454.04	365
MW-36-100	Deep Zone	451.75	457.39	454.31	365
MW-39-040	Shallow Zone	452.29	457.15	454.81	365
MW-39-050	Middle Zone	452.18	457.01	454.77	338
MW-39-060	Middle Zone	451.98	456.95	454.44	365
MW-39-070	Middle Zone	451.67	456.77	454.01	365
MW-39-080	Deep Zone	451.82	456.46	453.99	326
MW-39-100	Deep Zone	452.07	457.25	454.61	365
MW-42-030	Shallow Zone	452.23	456.86	454.83	341
MW-42-065	Middle Zone	452.33	456.97	454.81	365
MW-43-025	Shallow Zone	452.34	457.69	455.15	365
MW-43-090	Deep Zone	452.70	458.07	455.49	365
MW-44-070	Middle Zone	452.33	457.36	454.95	365
MW-44-115	Deep Zone	452.11	457.14	454.59	365
MW-44-125	Deep Zone	452.61	457.67	455.11	365
MW-45-095a	Deep Zone	451.05	458.86	453.82	365
MW-46-175	Deep Zone	452.78	457.24	455.20	359
MW-47-055	Shallow Zone	453.32	457.14	455.50	365
MW-47-115	Deep Zone	453.37	457.01	455.52	365
MW-49-135	Deep Zone	453.32	457.51	455.66	365

TABLE E-2

Average, Minimum, and Maximum Groundwater Elevations, January 2014 through December 2014
Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

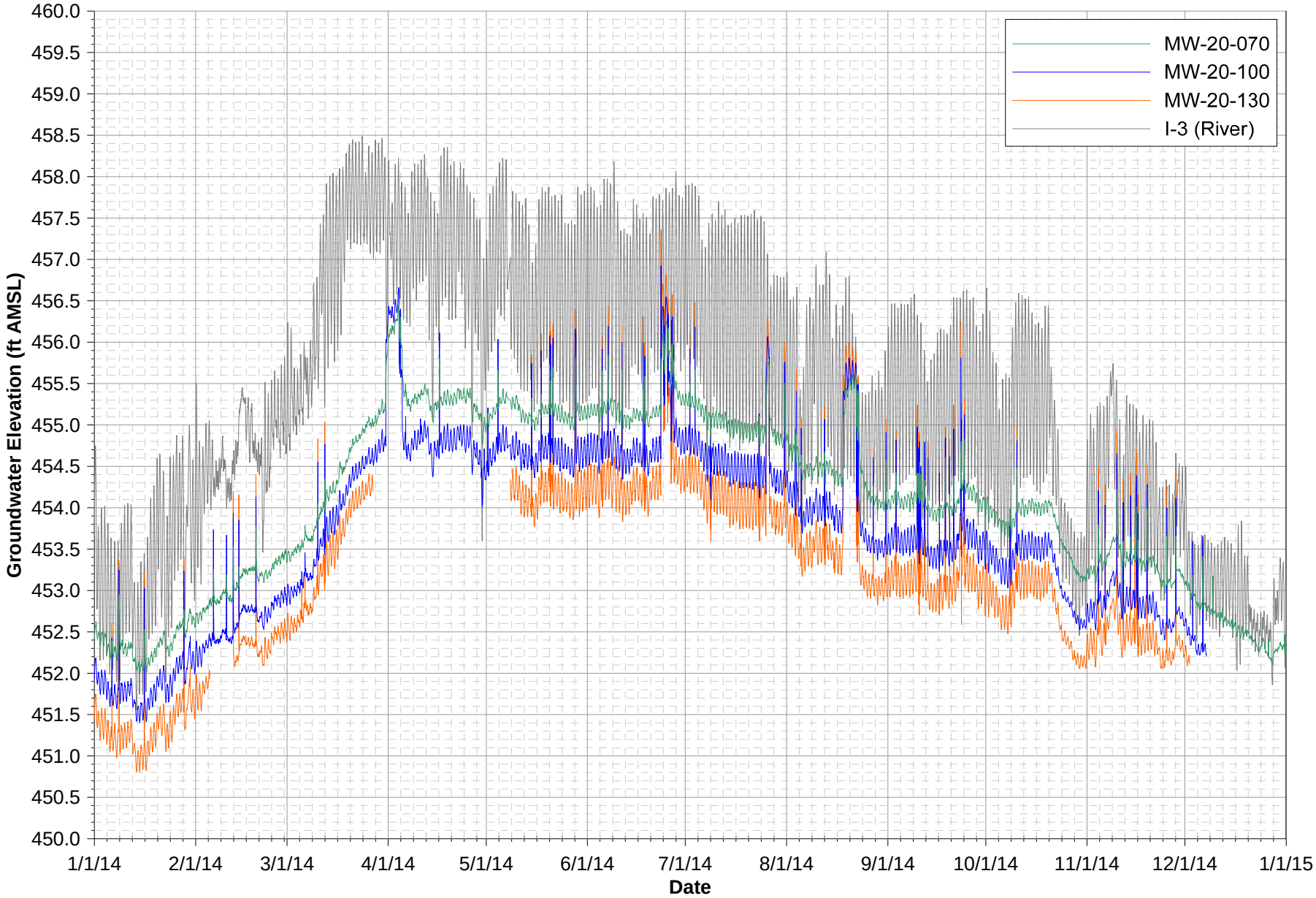
Well ID	Aquifer Zone	Minimum[a] (ft amsl)	Maximum[a] (ft amsl)	Average[a] (ft amsl)	Number of Days Reporting Data
MW-50-095	Middle Zone	453.18	456.58	455.25	342
MW-51	Middle Zone	453.61	456.39	455.18	365
MW-54-085	Deep Zone	452.92	458.05	455.42	275
MW-54-140	Deep Zone	453.55	457.90	455.95	337
MW-54-195	Deep Zone	453.78	458.06	455.93	338
MW-55-045	Middle Zone	454.78	457.60	456.16	365
MW-55-120	Deep Zone	454.86	457.41	456.13	365
PT2D	Deep Zone	451.35	456.83	453.96	322
PT5D	Deep Zone	451.88	457.12	454.30	365
PT6D	Deep Zone	451.94	457.22	454.36	365
RRB	River Station	453.12	458.27	455.82	339

Notes:

[a] minimium, maximum and average of daily groundwater elevation averages.

Averages include data collected from 1/1/2014 through 12/31/2014.

ft amsl = feet above mean sea level.
INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction.



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-20-100 data unavailable from December 7-31, 2014 due to transducer malfunction.
4. MW-20-130 data unavailable from February 5-12, 2014, April 1, 2014 through May 8, 2014 and December 2-31, 2014 due to transducer malfunction.

FIGURE E-1A
MW-20 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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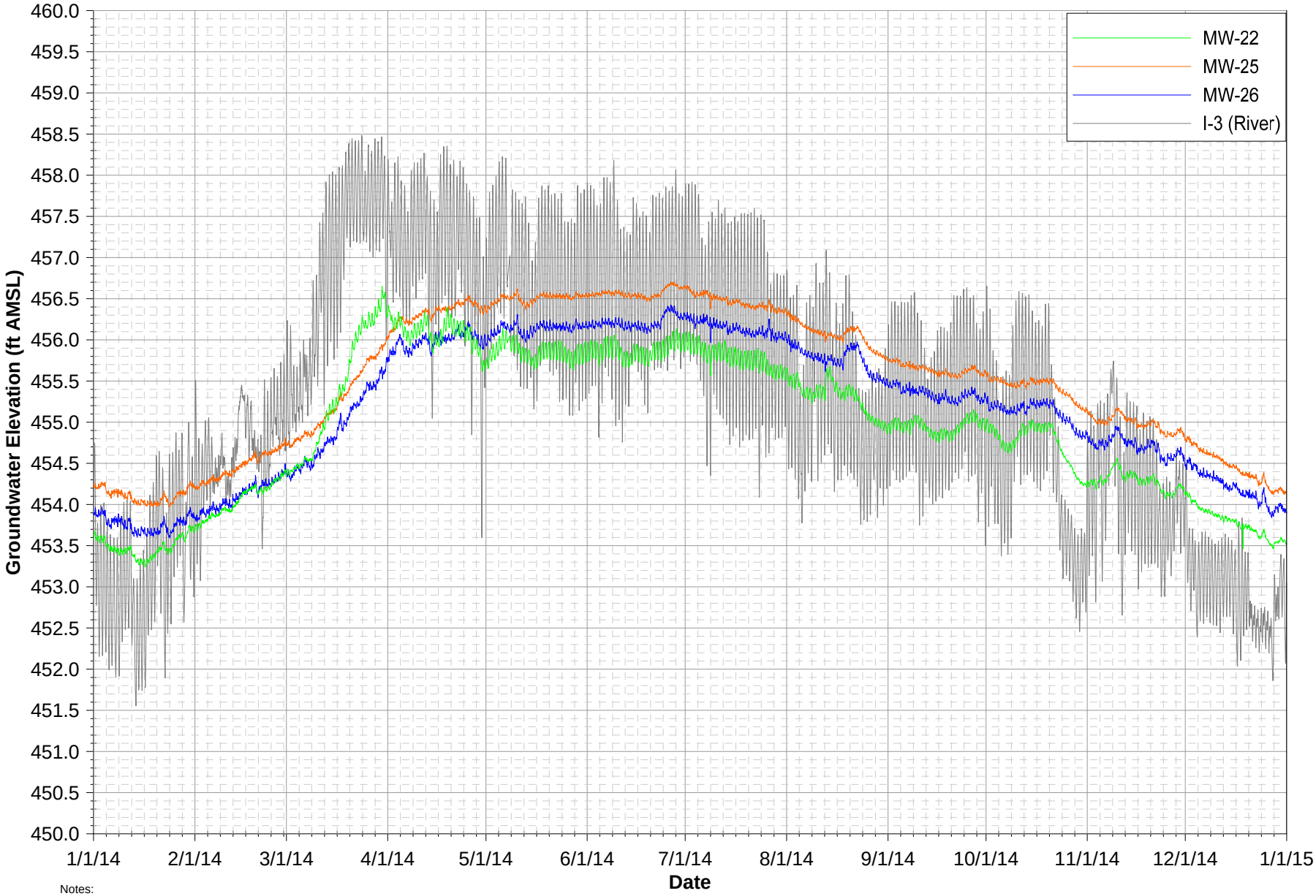


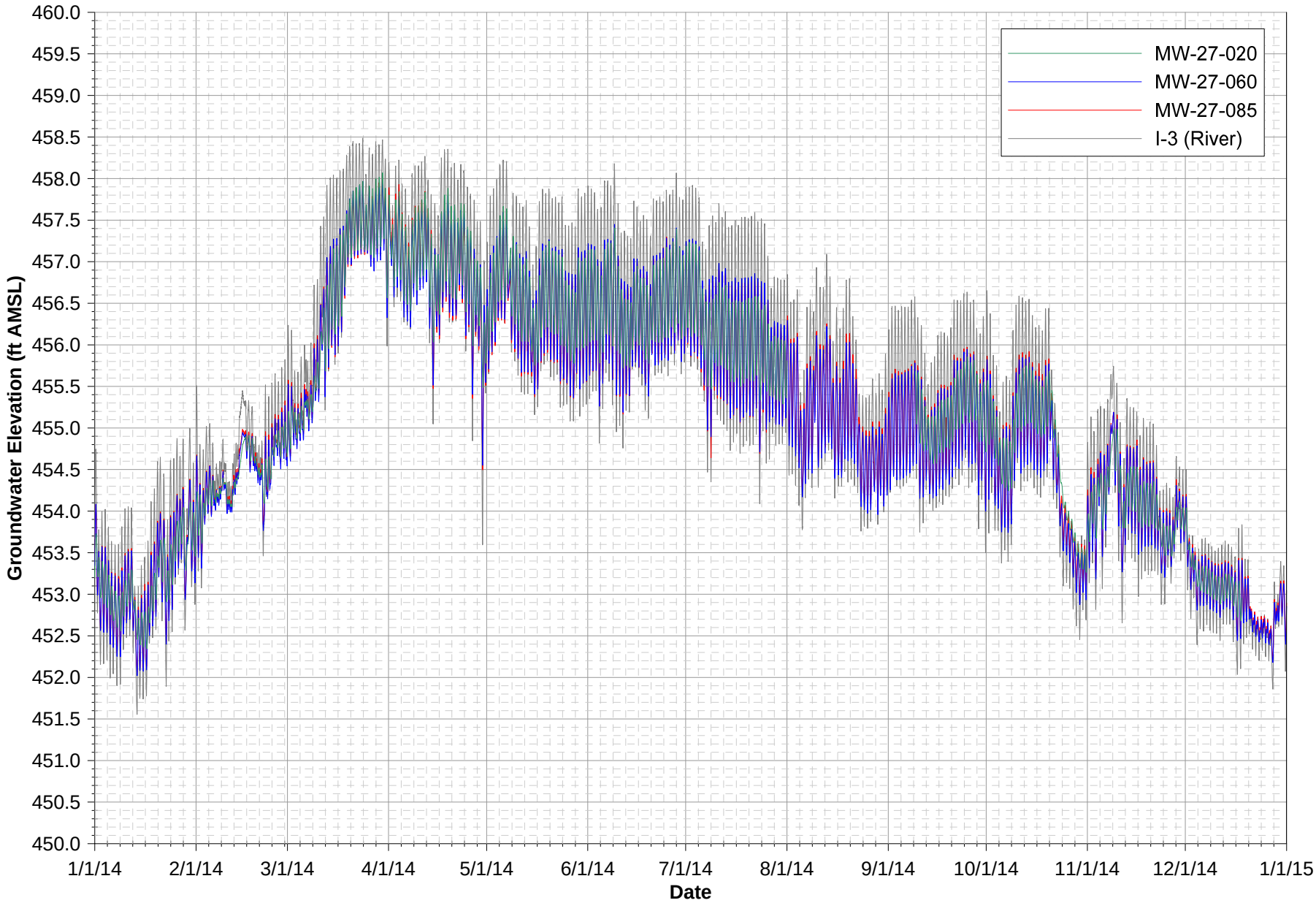
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1B

MW-22, MW-25, AND MW-26 HYDROGRAPHS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

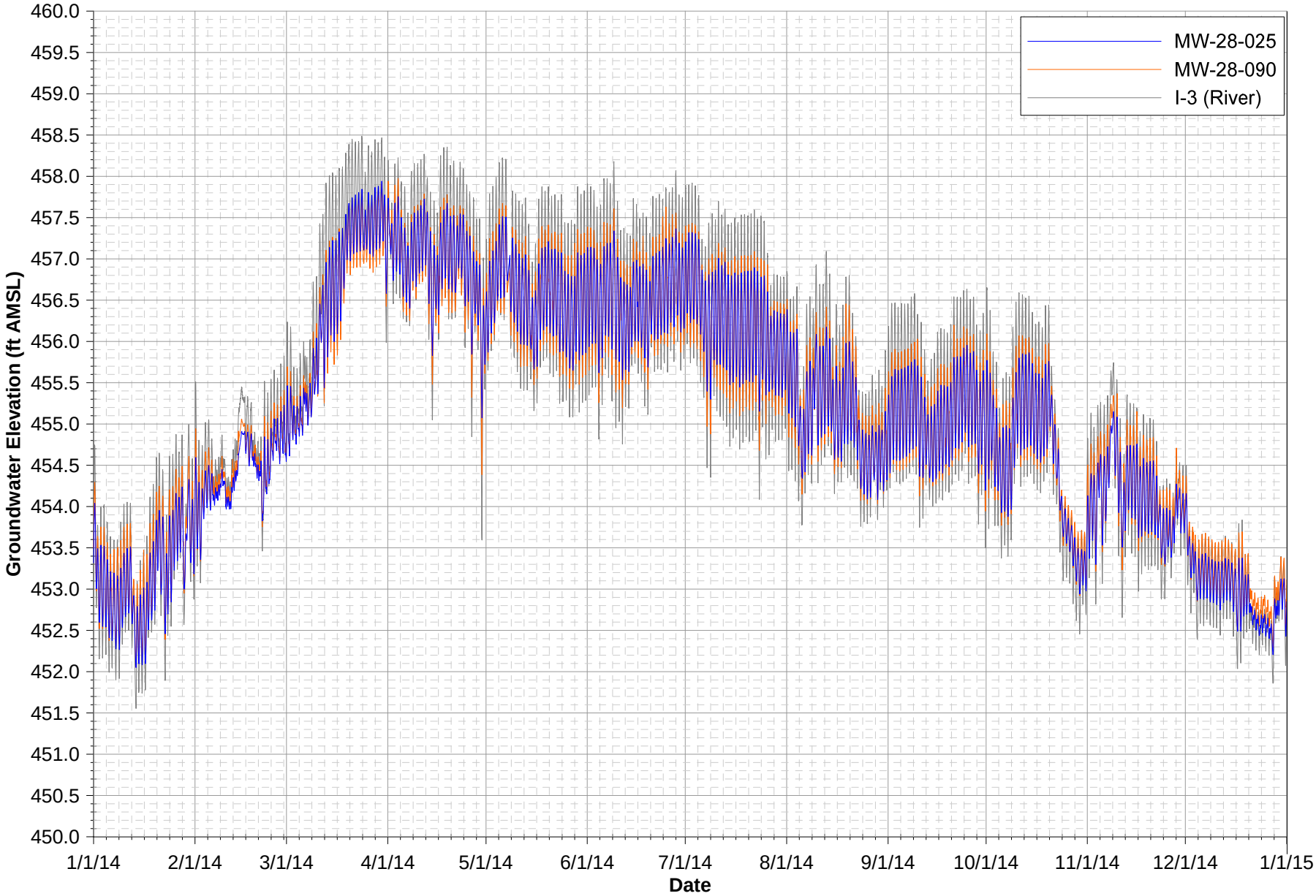
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-27-20 data unavailable from August 1, 2014 through September 9, 2014 due to transducer malfunction.

FIGURE E-1C
MW-27 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

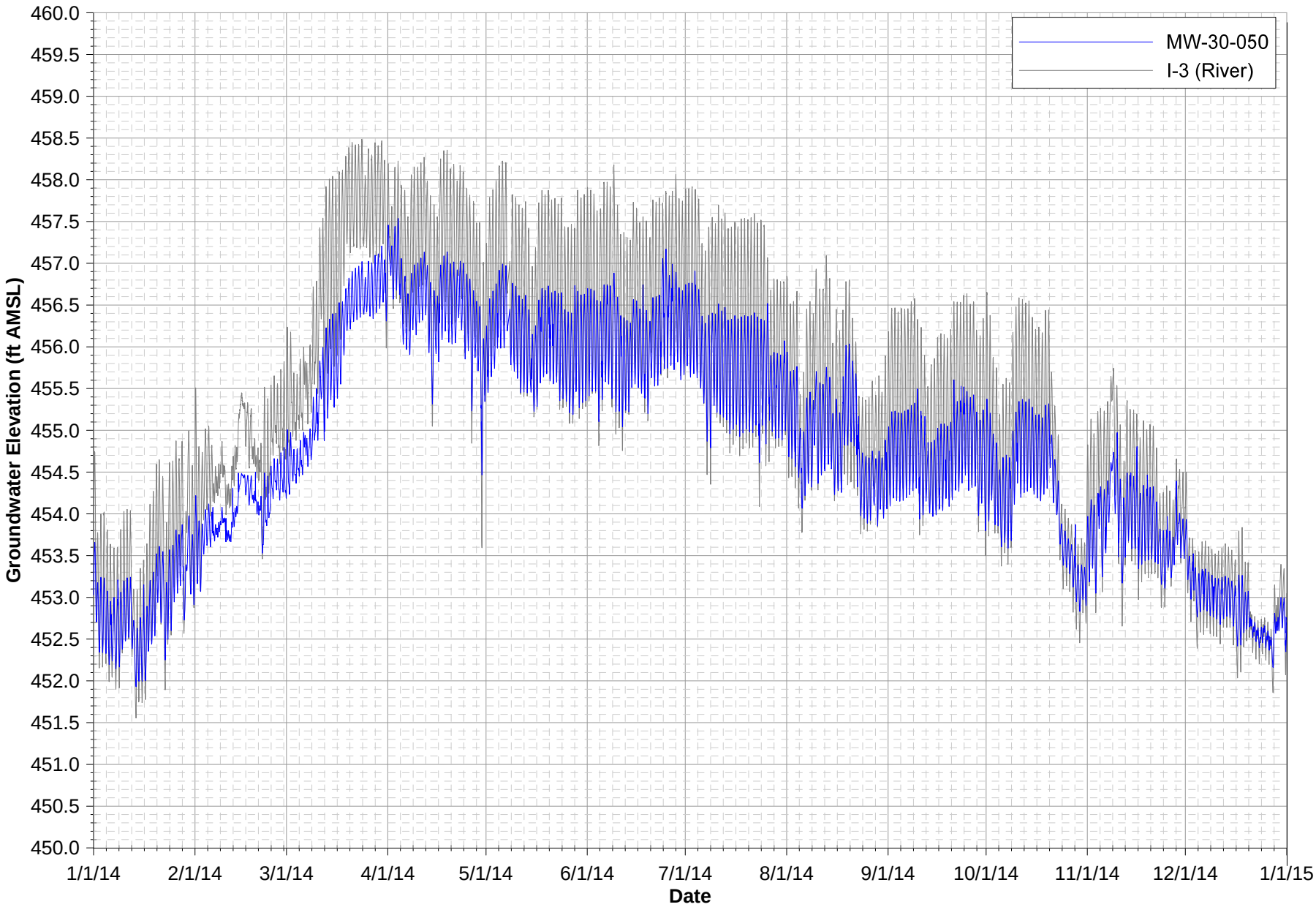
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1D
MW-28 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

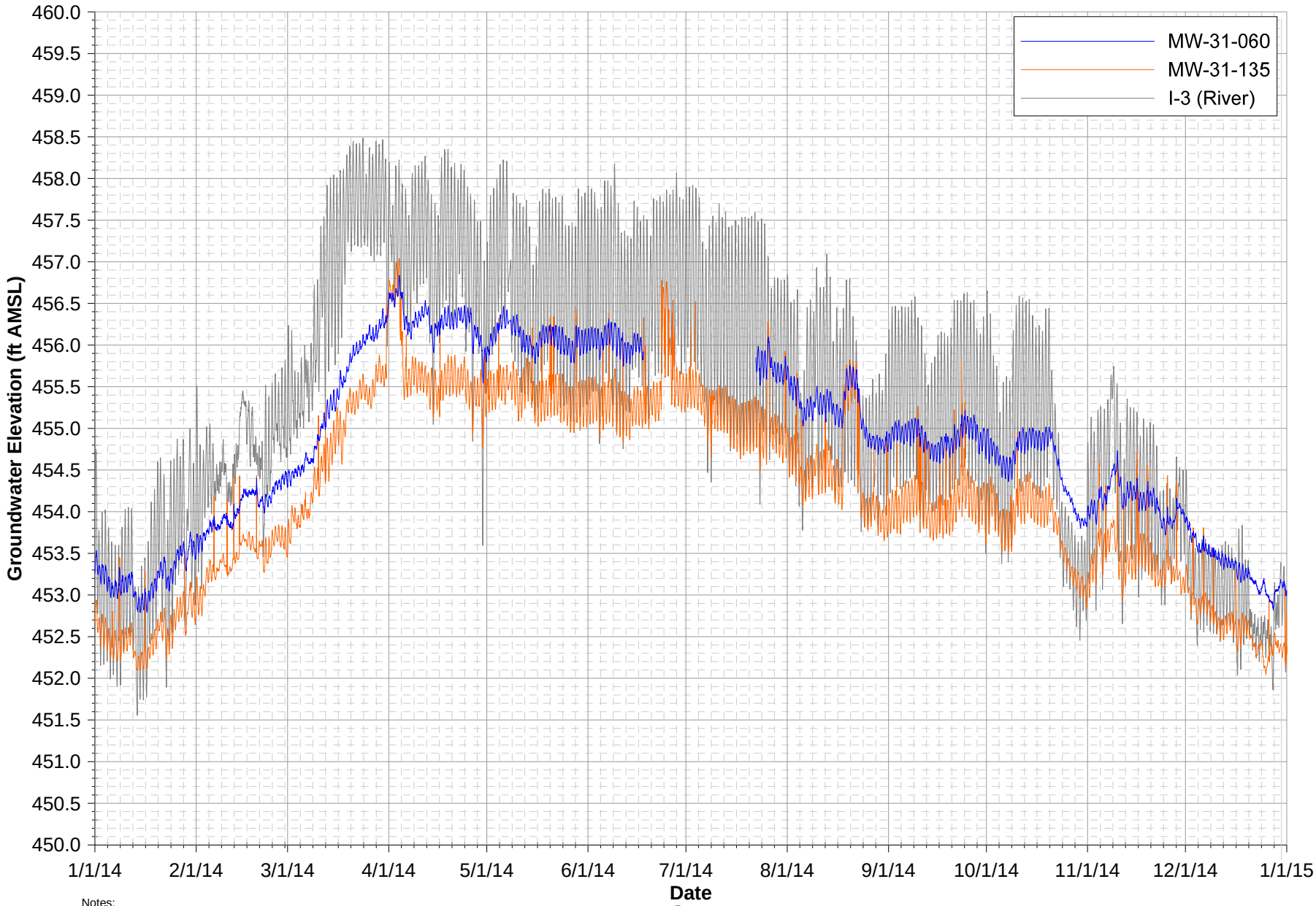
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1E
MW-30-50 HYDROGRAPH
FOURTH QUARTER 2014 AND ANNUAL INTERIMMEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

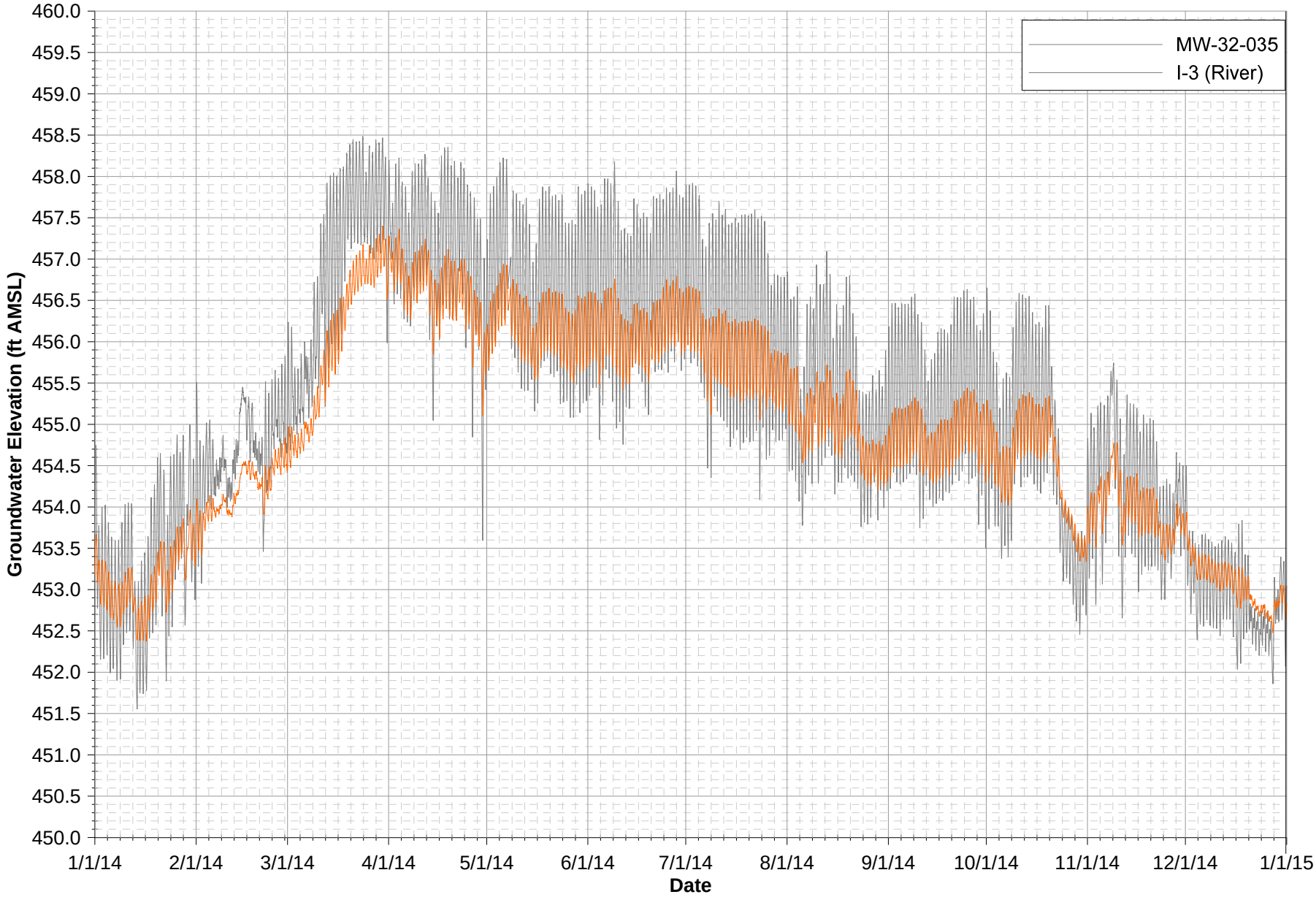
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-31-60 data unavailable from June 18, 2014 through July 22, 2014 due to transducer malfunction.

FIGURE E-1F
MW-31 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIMMEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

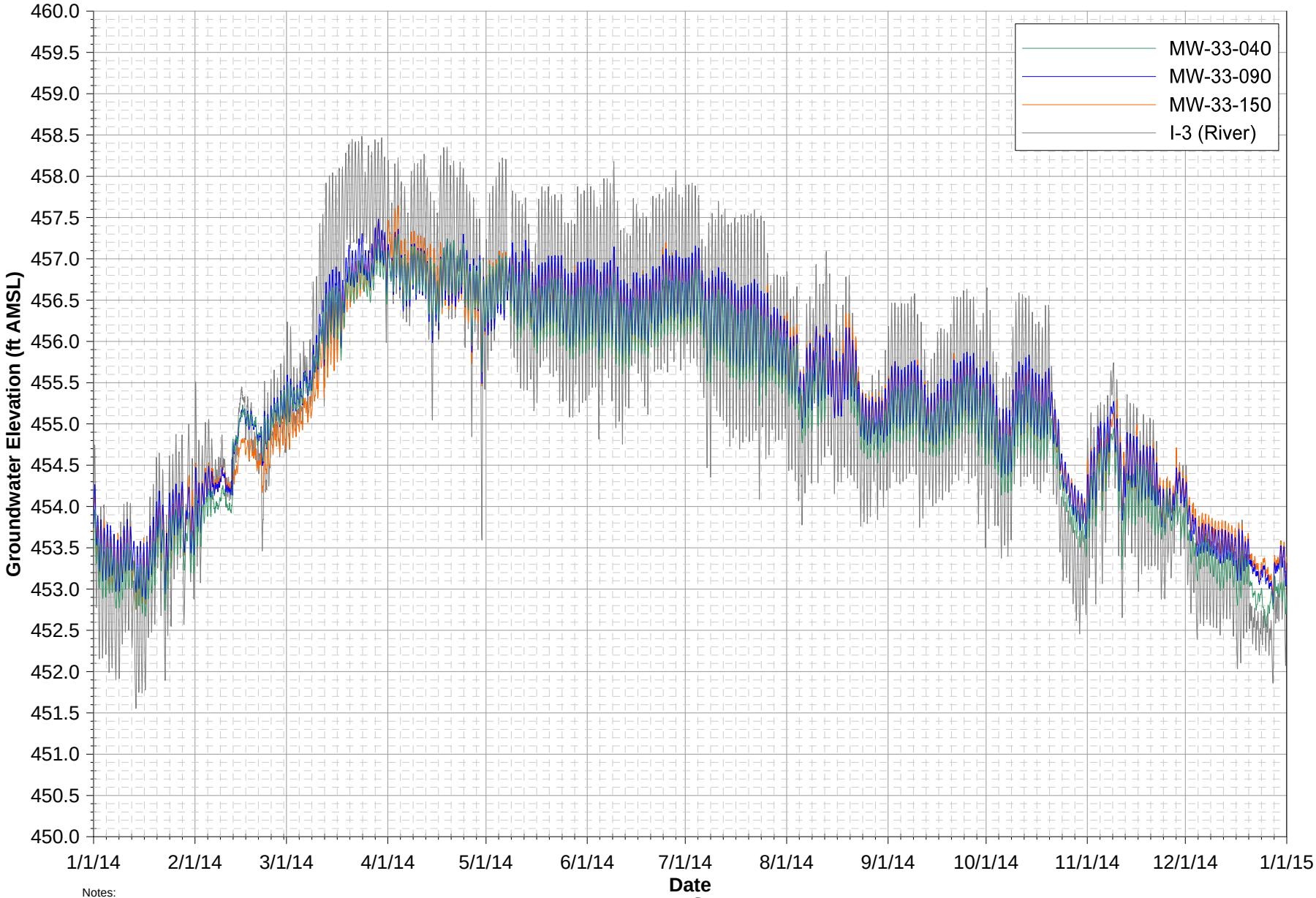
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1G
MW-32 HYDROGRAPH
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



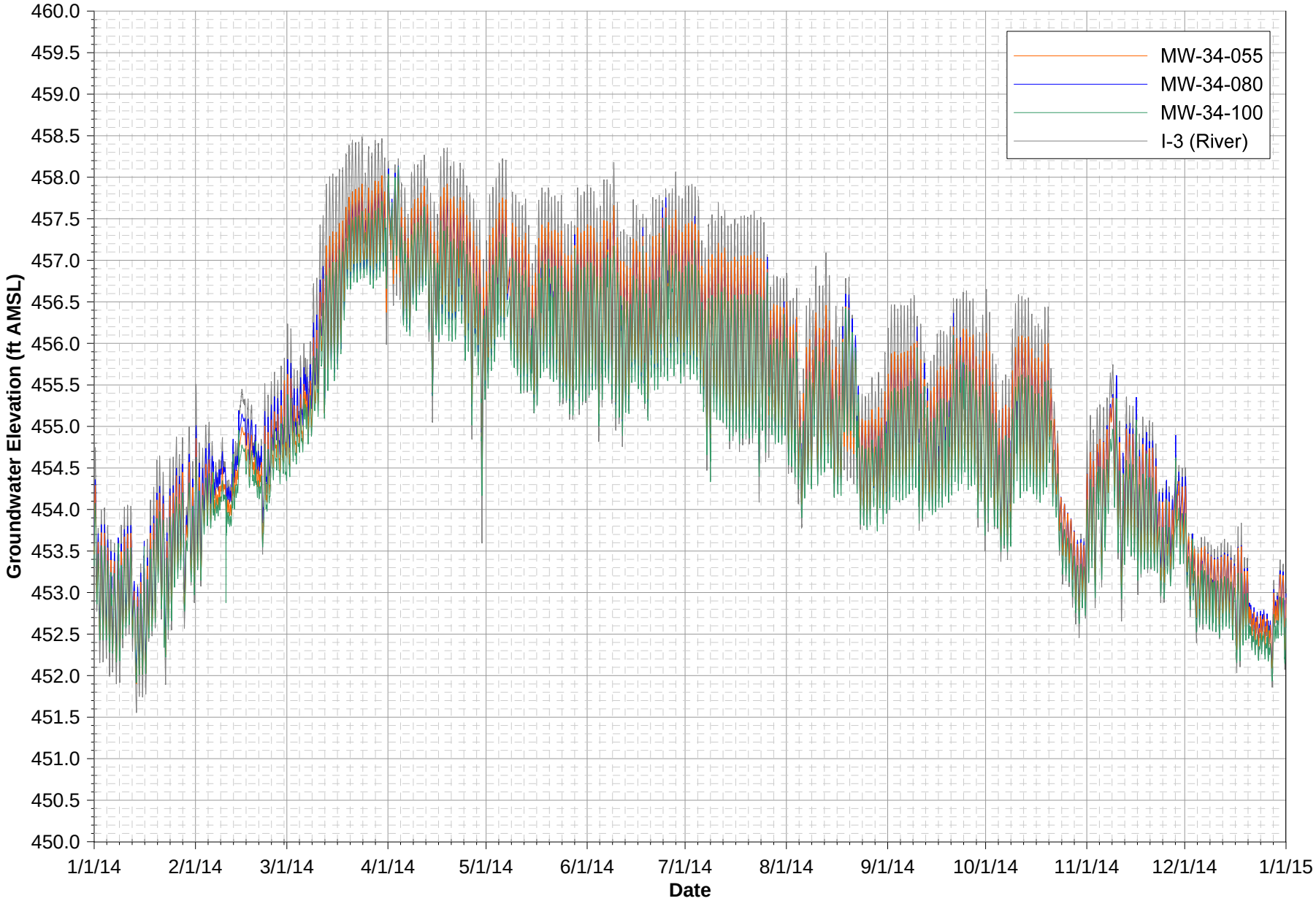
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-33-40 data unavailable from August 13, 2014 through August 20, 2014 due to transducer malfunction

FIGURE E-1H

MW-33 CLUSTER HYDROGRAPHS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

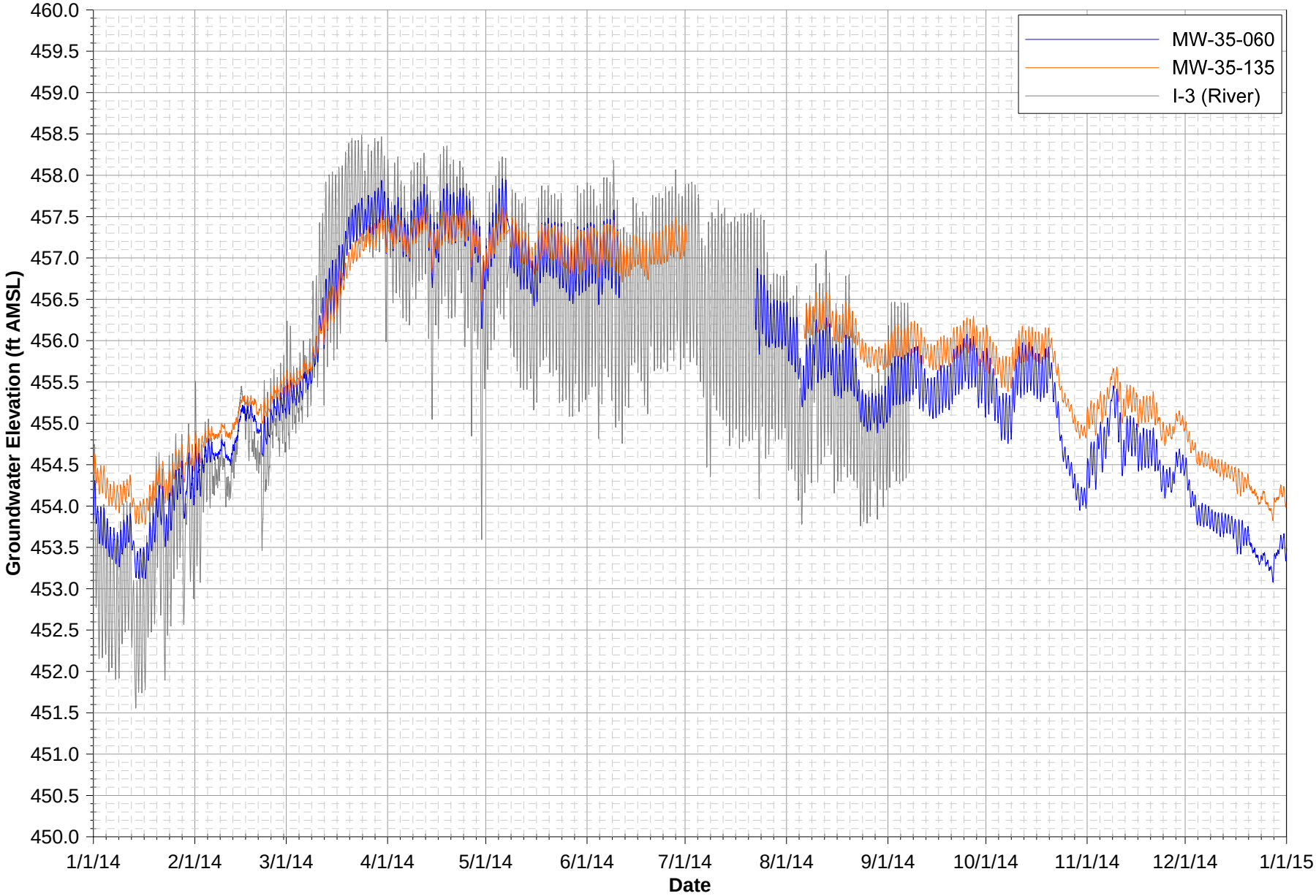
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1I
MW-34 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



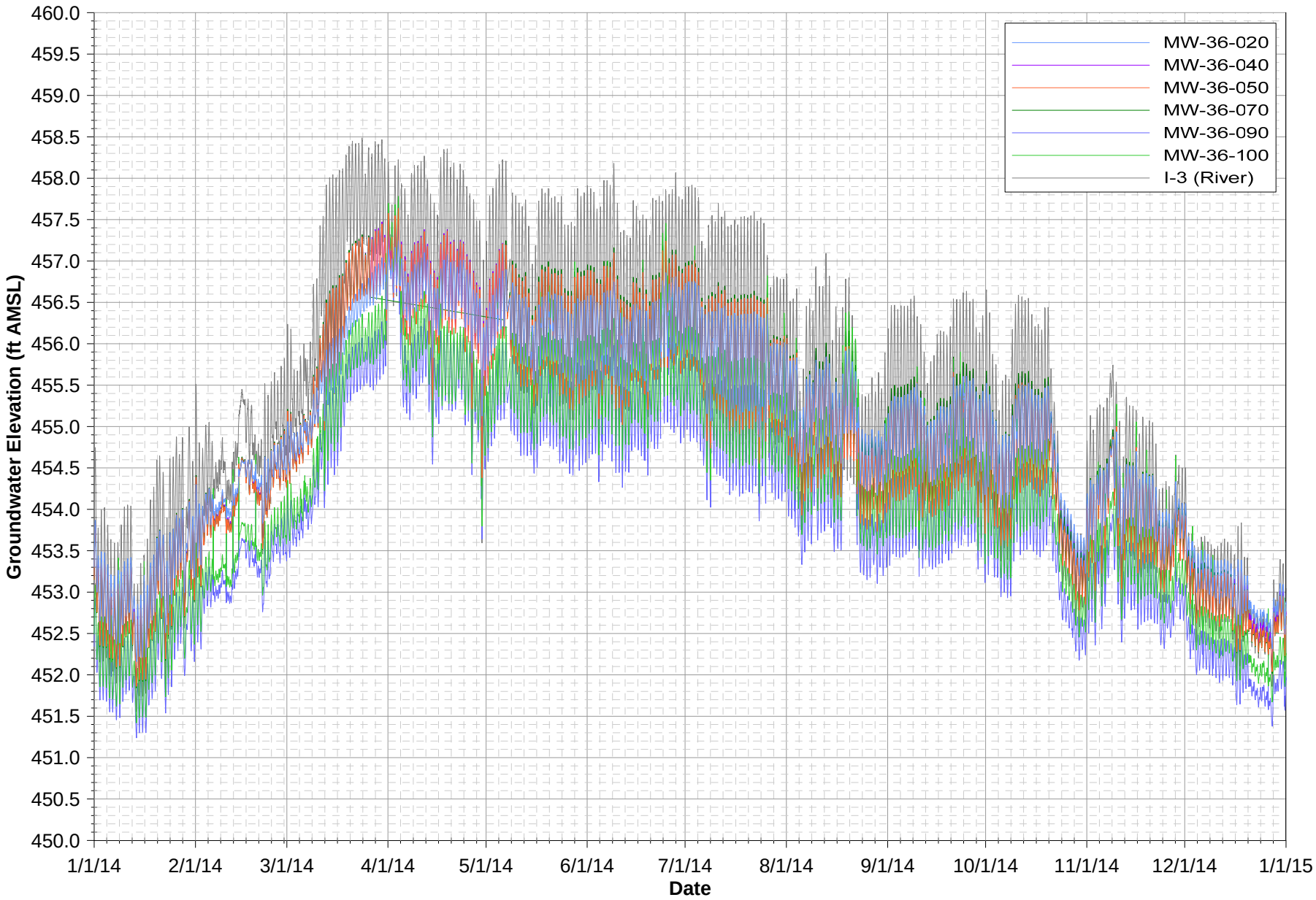
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-35-60 data unavailable from June 11, 2014 through July 22, 2014 due to transducer malfunction.
4. MW-35-135 data unavailable from July 1, 2014 through August 6, 2014 due to transducer malfunction.

FIGURE E-1J

MW-35 CLUSTER HYDROGRAPHS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

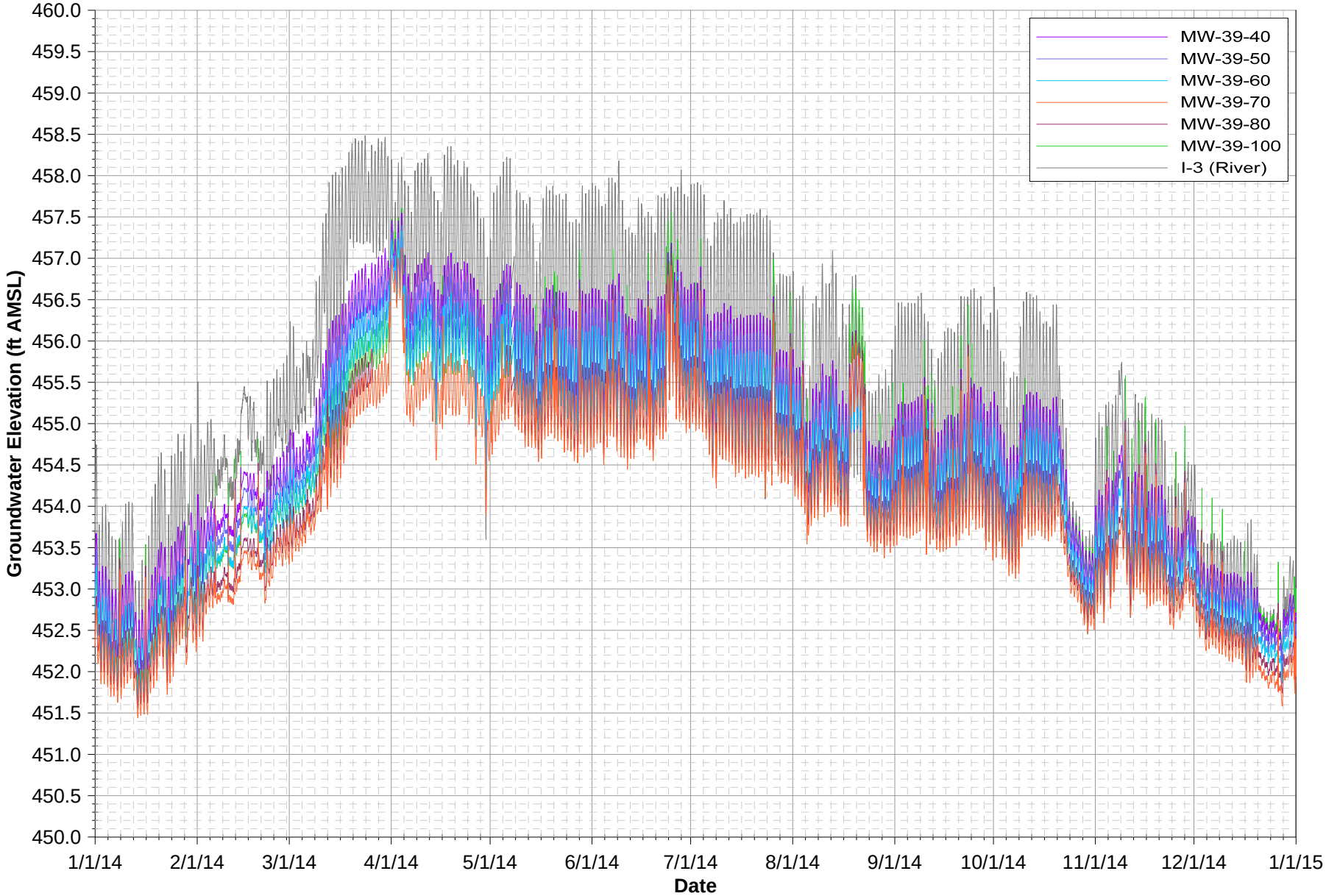
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1K
MW-36 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

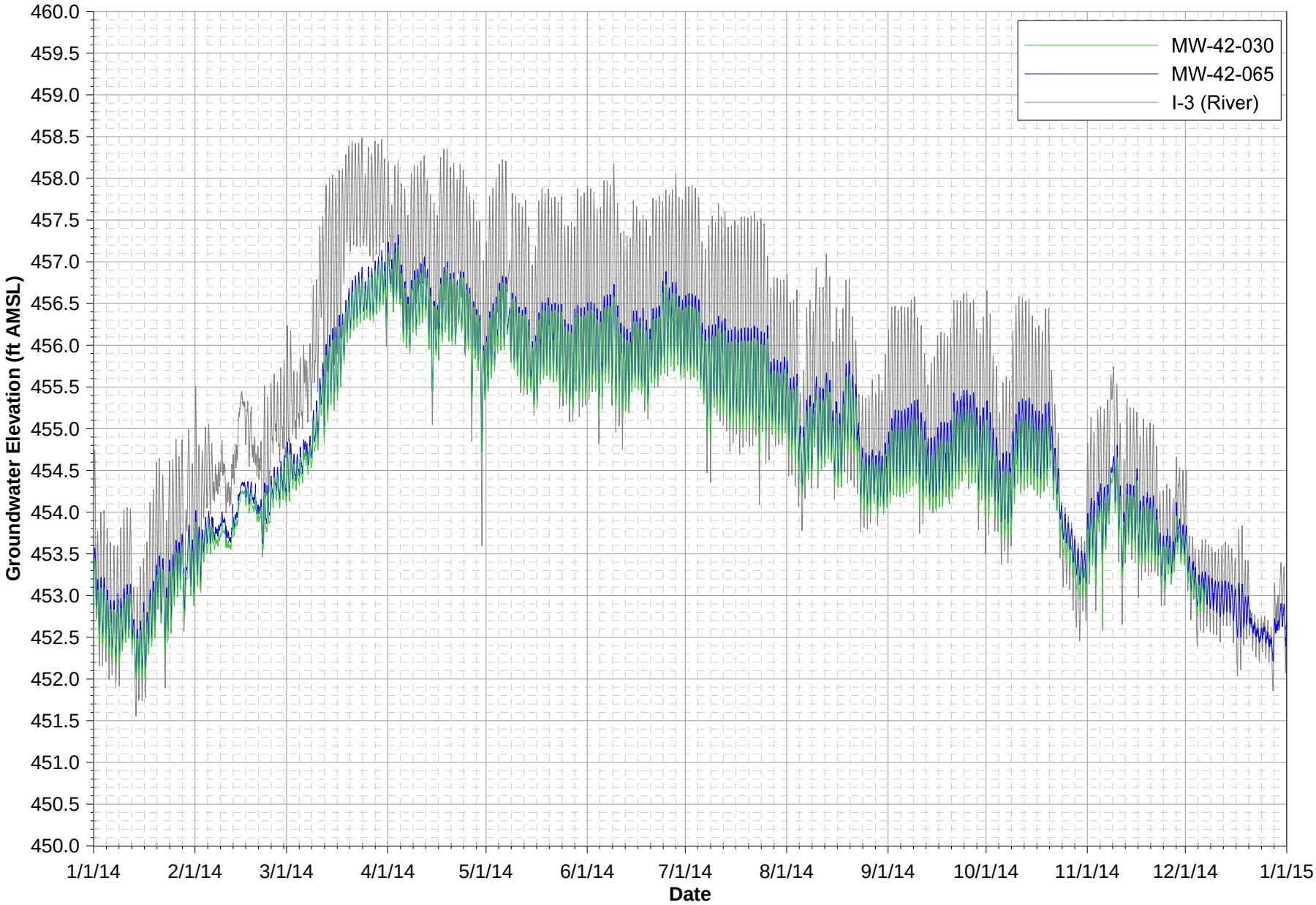
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-39-50 data unavailable from January 6, 2014 through February 3, 2014 due to transducer failure.
4. MW-39-80 data unavailable from March 26, 2014 through May 5, 2014 due to transducer failure.

FIGURE E-1L
MW-39 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

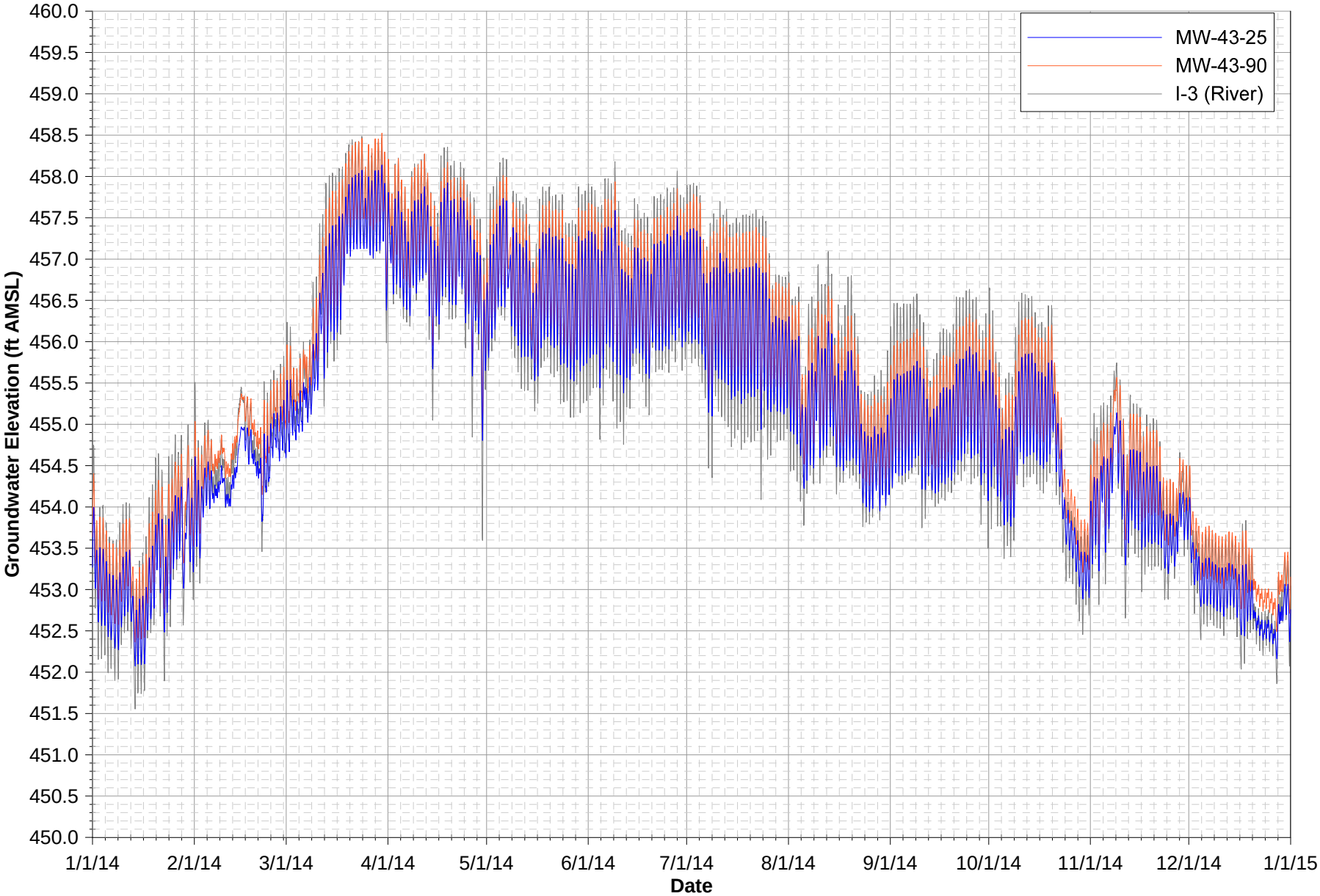
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-42-30 data unavailable from December 7-31, 2014 due to transducer failure.

FIGURE E-1M
MW-42 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

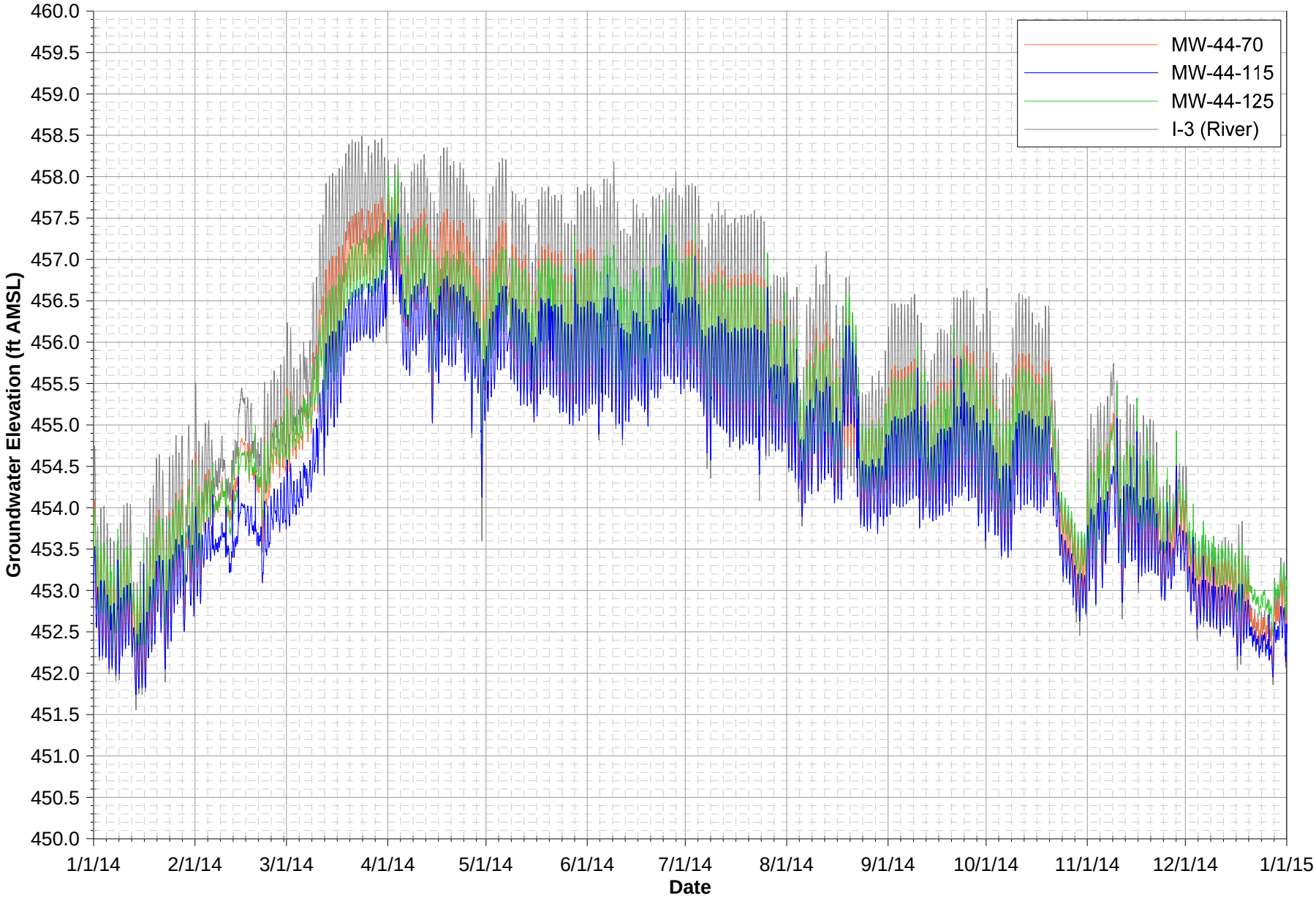
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1N
MW-43 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

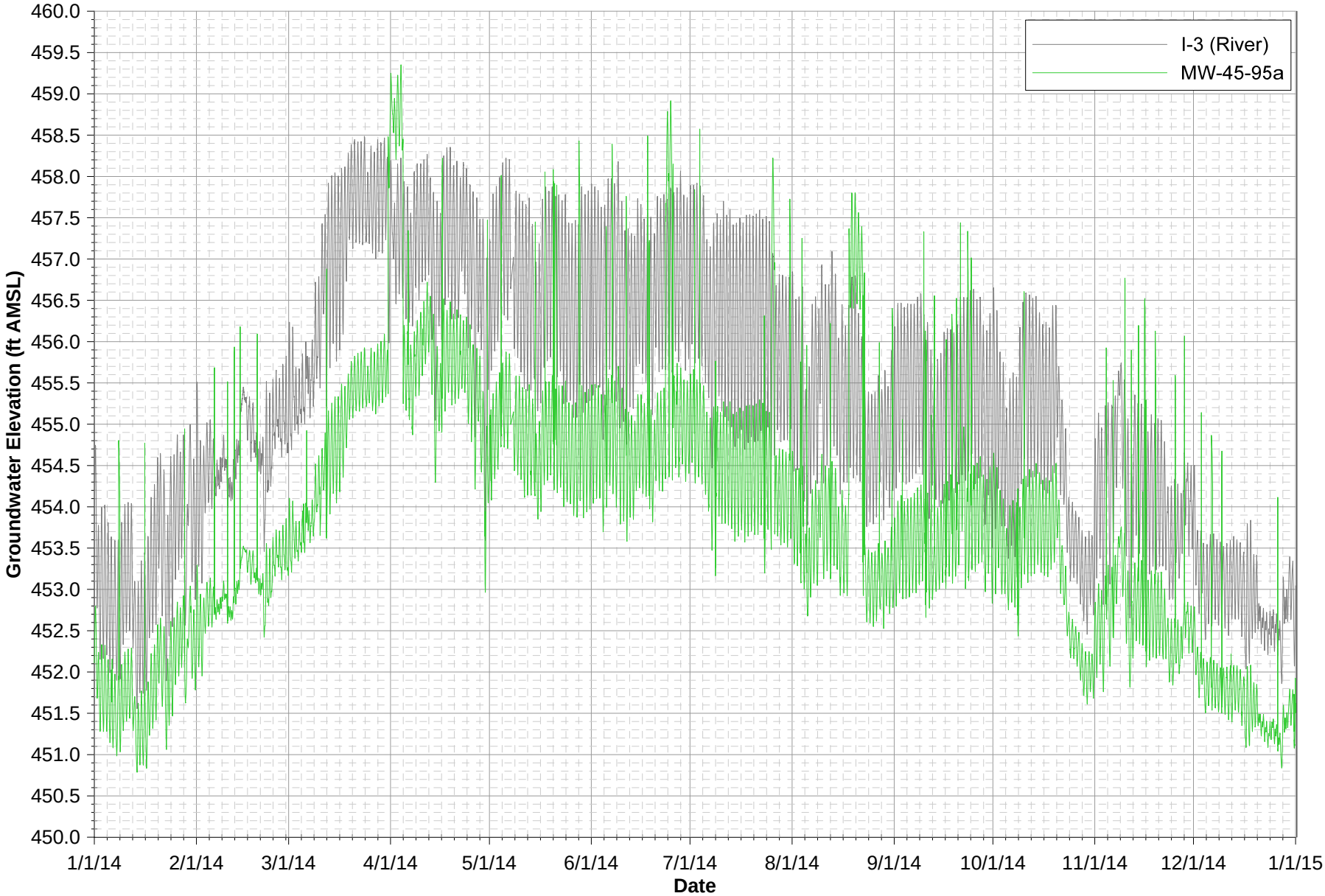
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1O
MW-44 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

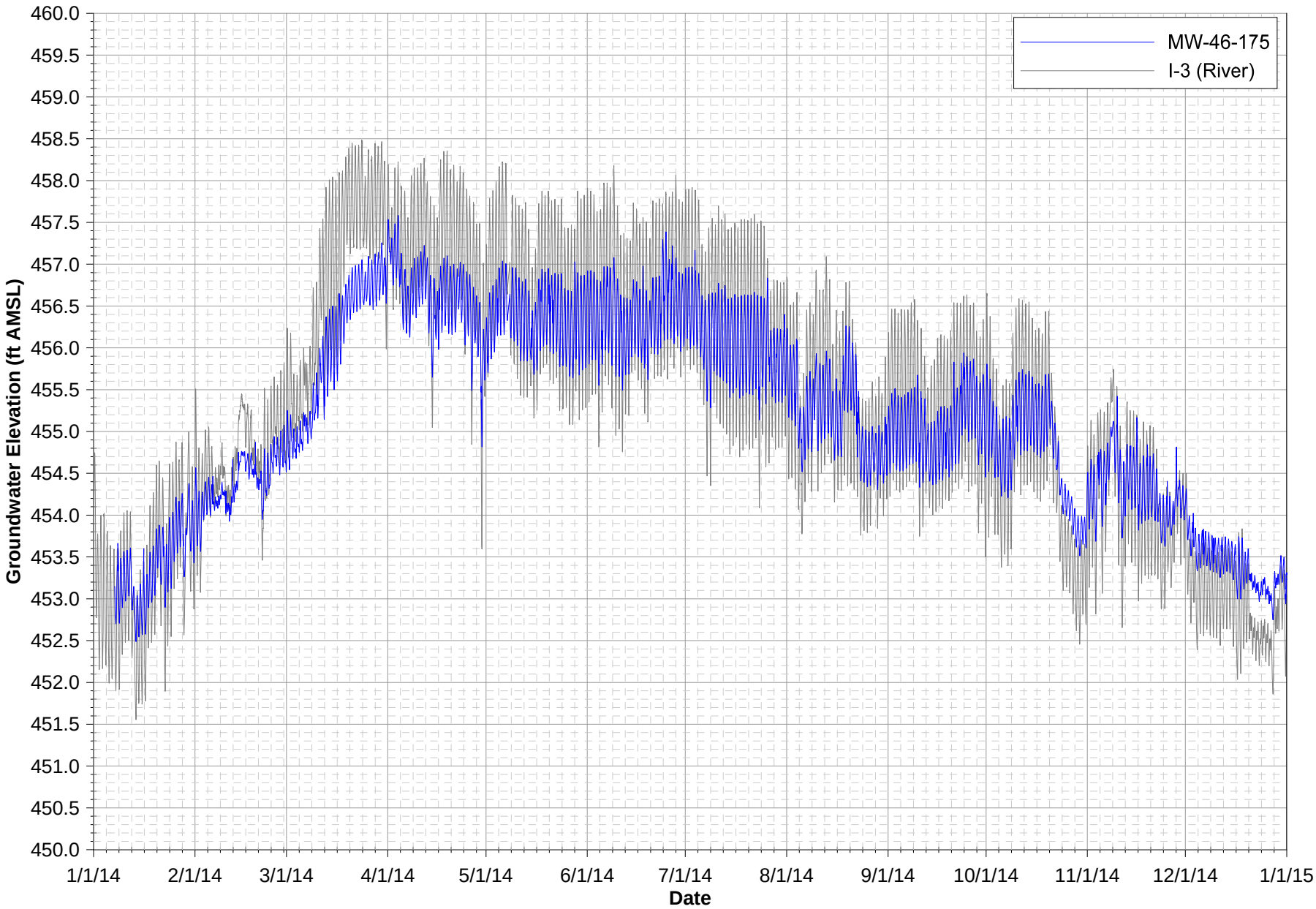
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1P
MW-45-95a HYDROGRAPH
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

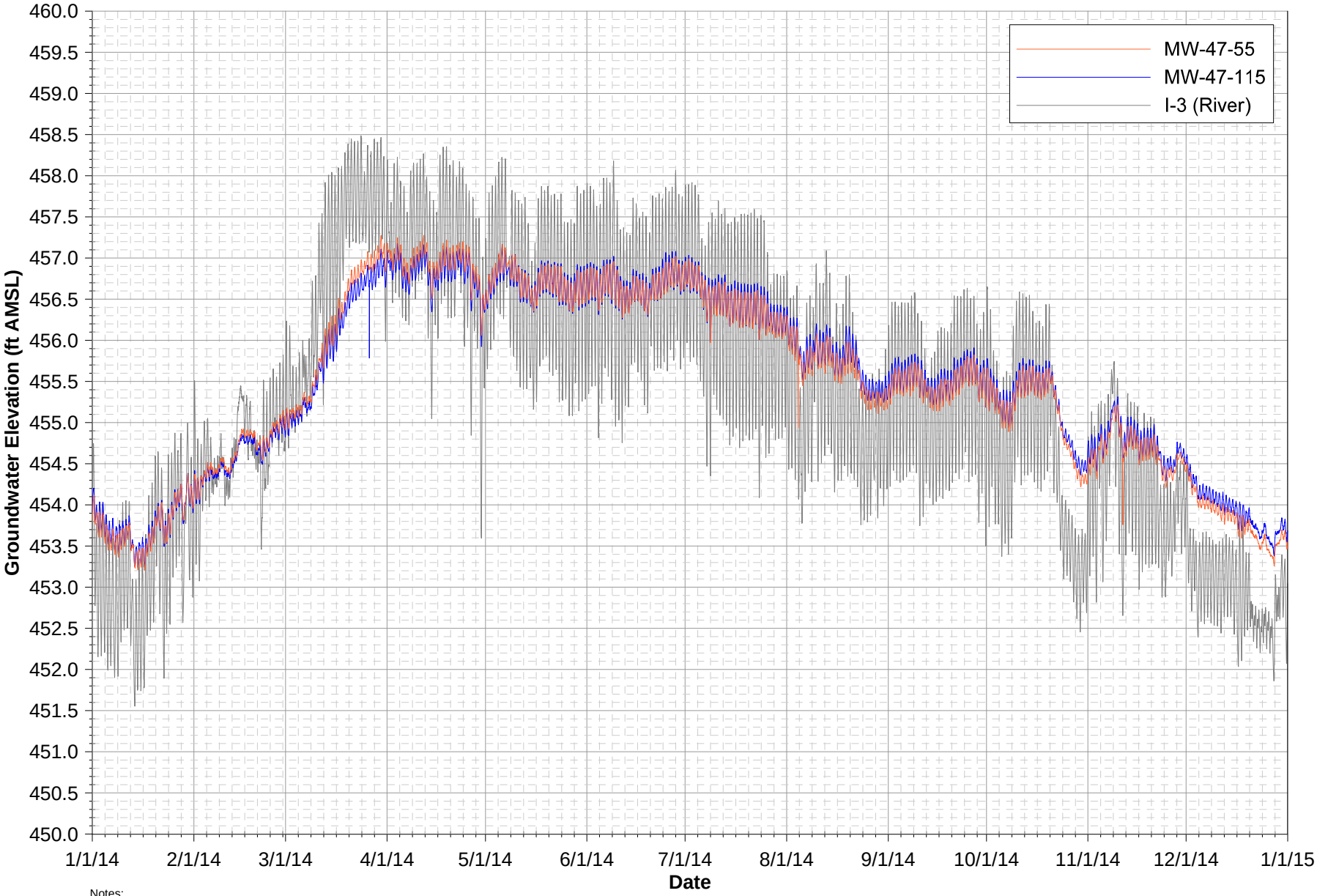
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-46-175 data unavailable from January 1-7, 2014 due to transducer failure.

FIGURE E-1Q
MW-46 HYDROGRAPH
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

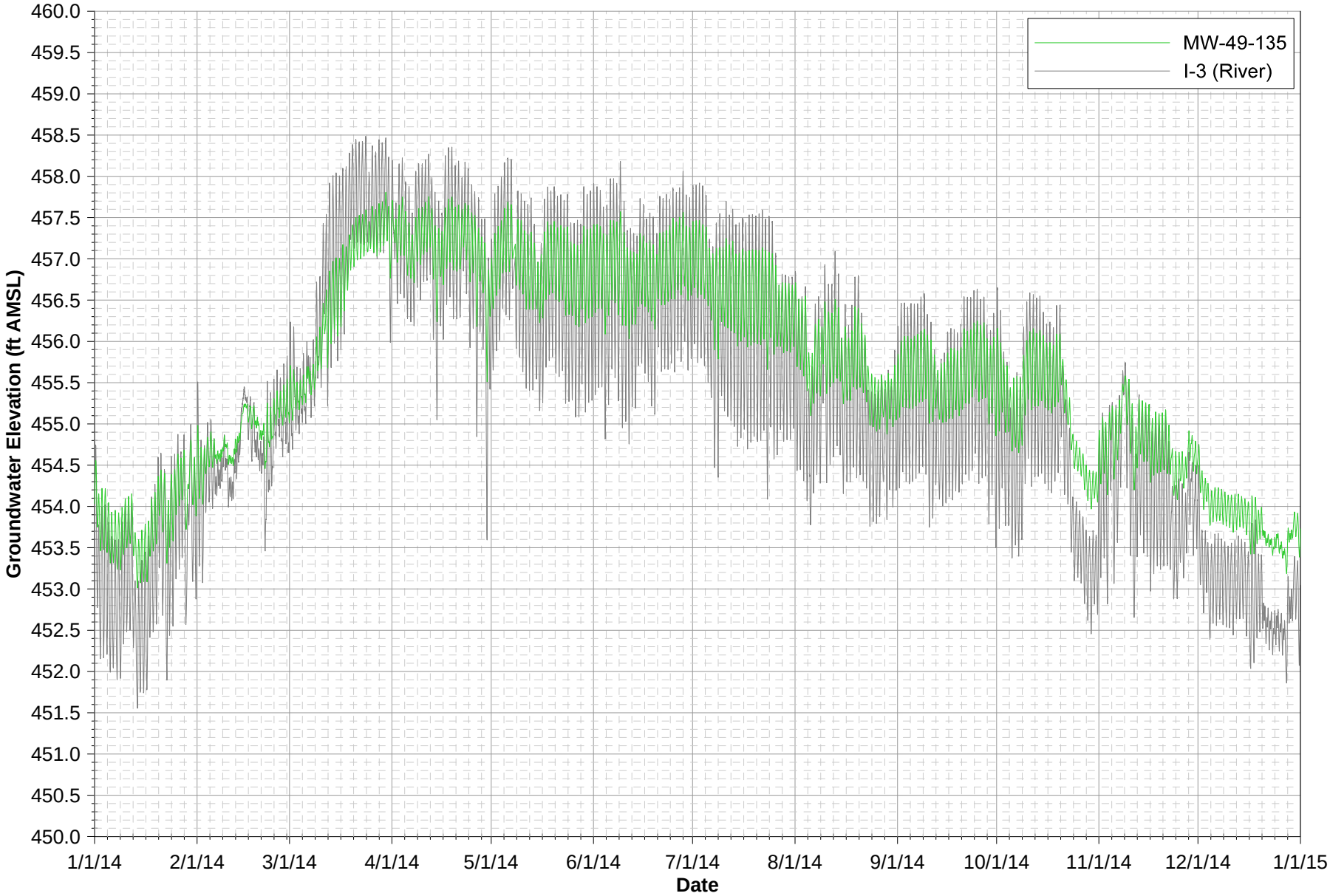
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1R
MW-47 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

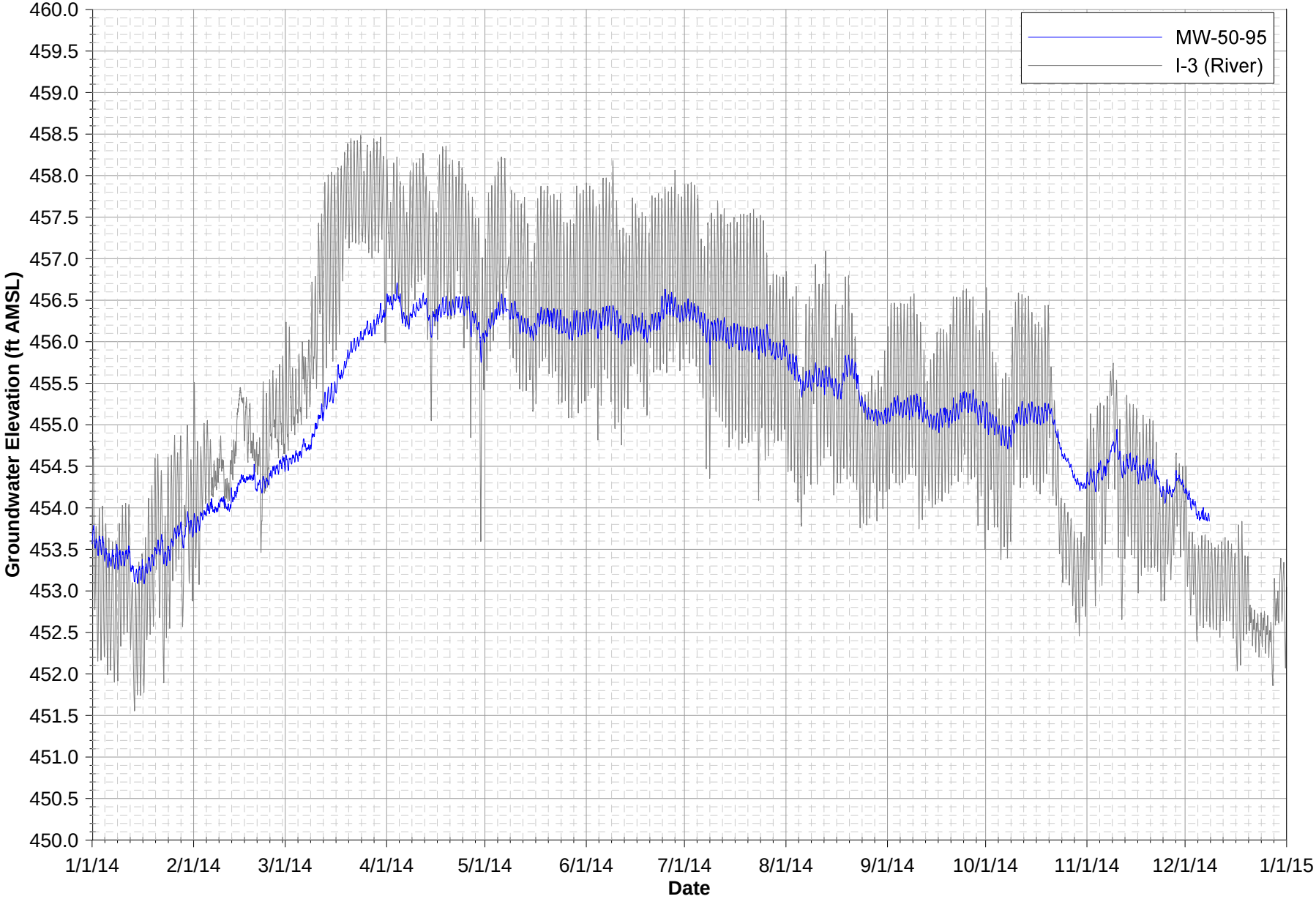
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1S
MW-49 HYDROGRAPH
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

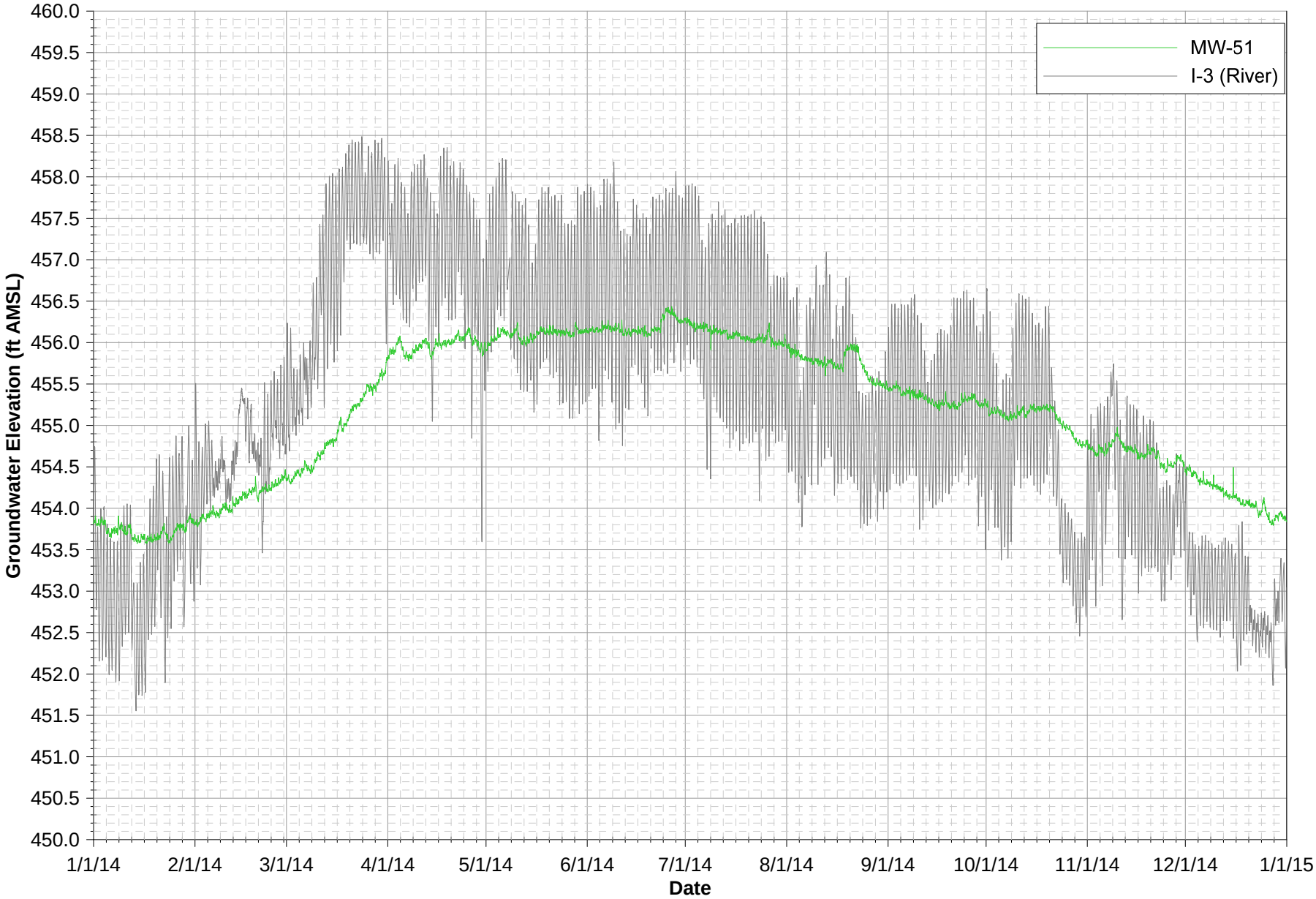
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-50-95 data unavailable from December 8-31, 2014 due to transducer malfunction.

FIGURE E-1T
MW-50 HYDROGRAPH
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



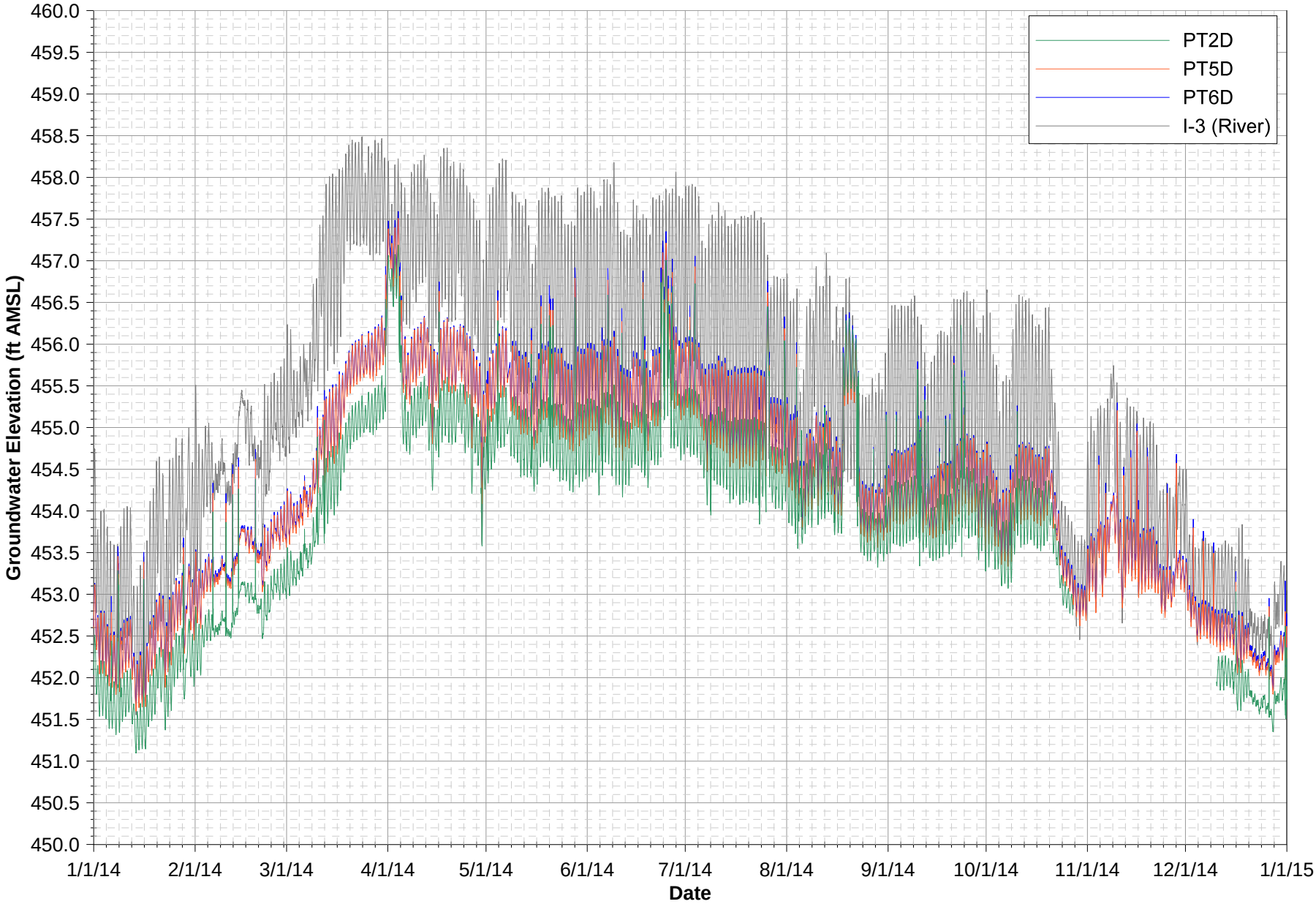
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE E-1U

MW-26 & MW-51 HYDROGRAPHS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Note:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. PT2D data unavailable from October 27, 2014 through December 10, 2014 due to equipment malfunction.

FIGURE E-1V

INSITU PILOT STUDY WELL HYDROGRAPHS

FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

Appendix F
Groundwater Monitoring Data for Groundwater Monitoring Plan and Performance Monitoring Program

TABLE F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-70	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1.0)	81.7	198	55.4	9.89	431	0.412
	15-Jun-05	1980	-7.0	-60.0	749	388	9.79	ND (1.0)	73.8	189	55.4	10.5	433	0.414
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1.0)	71.3	204	60.7	11.4	468	0.445
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	69.9	198	49.9	14.6	323	0.402
	15-Dec-05	1830	-7.1	-49.0	645	326	9.90	ND (1.0)	77.8	138	42.3	14.5	267	0.441
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.50)	82.2	161	48.6	9.22	424	0.427
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	74.5	162	49.2	9.55	461	0.476
	03-Oct-06	1890	-8.1	-60.4	677	357	13.0	ND (5.0)	85.0	158	47.6	9.82	472	0.535
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5.0)	80.0	154	45.9	9.51	466	0.515
	13-Dec-06	1910	-7.6	-61.2	678	352	12.7	0.699	77.5	149	44.3	9.09	458	0.459
	14-Mar-07	1740	-8.5	-64.3	689	358	13.7	0.641	80.0	139	42.2	8.83	451	0.503
	03-May-07	1750	-8.4	-66.7	697	344	25.1	ND (1.0)	77.5	139	41.2	8.65	390	0.477
	11-Oct-07	1820	-8.2	-63.9	699	367	15.6	ND (1.0)	80.0	130	39.1	11.0	600	0.540
	12-Mar-08	1790	-7.6	-65.2	695	360	22.1	ND (1.0)	77.0	139	41.2	10.7	403	0.510
	07-Oct-08	1900	-8.5	-64.4	650	360	15.0	0.610	83.0	136	37.9	10.5	400	0.608
	12-Mar-09	1900	-7.74	-60.8	670	330	17.0	ND (1.0)	79.0	128	40.2	9.95	496	0.549
	25-Sep-09	1700	-8.7	-66.4	700	310	16.0	ND (2.5)	74.0	130	33.0	9.70	390	0.420
	16-Dec-10	1700	-7.5	-62.3	680	320	16.0	0.510	79.0	130	33.0	12.0	400	0.510
	07-Dec-11	1400	-7.9	-61.9	540	330	11.0	ND (0.50)	71.0	100	25.0	---	380	---
	04-Oct-12	---	---	---	430	290	8.40	---	---	76.2	22.9	---	346	---
	27-Nov-12	1400	-7.8	-62.6	450	290	10.6 *	ND (0.50)	89.0	79.2	22.2	8.07	350	0.484
	12-Mar-13	---	---	---	440	290	8.60 *	---	87.0	82.8	22.3	---	358	---
	11-Dec-13	1200	-8.12	-63.9	390	260	8.05 *	ND (0.50)	91.0	70.0	17.0	15.0	580	0.510
	15-Dec-14	1100	-8.07	-63.1	330	230	7.70 *	ND (0.50)	100	49.0	12.0	4.40	310	0.430
MW-20-100	10-Mar-05	2490	-5.2	-49.0	466	511	9.98	ND (1.0)	84.2	133	19.8	8.98	712	0.859

TABLE F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-100	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1.0)	84.0	137	21.3	9.06	592	0.713
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	82.3	170	23.7	15.2	500	0.718
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1.0)	82.7	136	21.4	14.8	406	0.709
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.50)	92.5	171	27.0	7.75	597	0.803
	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1.0)	82.5	193	32.0	10.8	577	0.716
	03-Oct-06	2320	-5.8	-51.5	863	456	13.4	ND (5.0)	90.0	202	34.4	10.9 J	568	0.874
	13-Dec-06	1960	-6.2	-54.4	861	459	12.3	0.830	97.5	205	32.2	11.4	579	0.889
	13-Dec-06 FD	2200	-6.2	-54.5	874	457	12.2	0.851	92.5	205	32.2	9.55	575	0.881
	14-Mar-07	2180	-6.8	-57.8	847	477	14.2	0.785	87.5	194	31.7	9.90	521	0.715
	03-May-07	2300	-7.3	-59.2	879	493	23.2	ND (1.0)	87.5	209	36.0	12.0 J	559	0.699
	03-May-07 FD	2330	-6.7	-59.3	888	484	19.7	ND (1.0)	87.5	208	34.6	9.63 J	532	0.686
	10-Oct-07	2160	-7.2	-57.2	858	468	3.25	ND (1.0)	92.0	190	32.0	15.0	560	0.810
	12-Mar-08	2470	-6.9	-58.3	827	442	19.2	ND (1.0)	870	218	35.4	11.9	469	0.702
	08-Oct-08	2200	-7.9	-60.2	760	420	16.0	ND (1.0)	90.0	215	36.8	10.3	453	0.669
	13-Mar-09	2200	-7.08	-58.2	770	420	16.0	ND (1.0)	97.0	213	36.4	11.6	543	0.890
	25-Sep-09	2000	-7.67	-62.8	750	400	16.0	ND (2.5)	89.0	200	30.0	12.0	430	0.700
	10-Feb-11 [a]	1800	-7.0	-58.8	610	380	15.0	0.570	120	180	28.0	14.0	400	0.810
	08-Dec-11	1700	-6.7	-55.6	580	380	13.0	ND (0.50)	120	170	25.0	---	390	---
	04-Oct-12	---	---	---	570	390	12.0	---	---	157	27.8	---	400	---
	29-Nov-12	1700	-7.0	-56.6	570	350	12.9 *	ND (0.50)	110	149	30.6	9.64	376	0.952
	13-Mar-13	---	---	---	560	370	6.27 *	---	120	164	27.8	---	388	---
	11-Dec-13	1600	-7.46	-55.9	550	290	9.50 *	ND (0.50)	110	140	23.0	8.20	400	1.00
	15-Dec-14	1500	-7.62	-60.2	530	260	8.90 *	ND (0.50)	120	120	18.0	6.40	340	0.760
MW-20-130	09-Mar-05	5520	-5.8	-56.0	3120	1080	10.9	ND (1.0)	68.9	219	12.1	24.7	2250	1.90
	09-Mar-05 FD	6200	-5.4	-51.0	3080	1080	10.9	ND (1.0)	68.9	231	12.8	25.4	2390	1.99

TABLE F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2014

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PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-130	15-Jun-05	7790	-5.0	-48.0	3410	1230	11.1	ND (1.0)	68.7	352	23.2	31.3	2980	2.75
	07-Oct-05	7330	-5.0	-47.0	3010	1210	10.9	1.04 J	72.4	349	13.9	38.4	2070	2.41
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	63.2	324	16.3	44.4	1780	1.98
	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.50)	74.5	312	18.9	27.7	2730	2.03
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1.0)	69.2	349	20.3	27.7	2810	2.40
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5.0)	70.0	358	20.9	28.0	2870	2.28
	13-Dec-06	7890	-6.0	-54.9	3970	1250	10.6	0.896	72.5	335	19.7	27.6	2900	2.31
	13-Dec-06 FD	8250	-5.9	-54.4	3950	1260	10.5	1.09	72.5	328	19.1	27.3	2830	2.24
	08-Mar-07	8450	-6.5	-57.7	3930	1240	11.3	1.08	70.0	353	21.3	27.0	2760	2.24
	08-Mar-07 FD	8510	-6.6	-57.4	3900	1210	11.3	1.06	72.5	351	21.3	26.8	2750	2.19
	03-May-07	8150	-7.7	-60.0	4020	1310	9.80 J	ND (1.0)	75.0	338	22.5	27.8	2550	2.49
	03-May-07 FD	8100	-6.9	-60.1	3950	1290	20.4 J	ND (1.0)	72.5	338	21.9	27.3	2550	2.47
	05-Oct-07	7980	-7.0	-57.5	3670	1070	11.6	ND (1.0)	77.0	310	19.0	31.0	2900	2.40
	12-Mar-08	8460	-6.2	-58.7	3690	1220	14.3	ND (1.0)	75.0	342	23.4	47.0	2260	2.07
	08-Oct-08	7800	-7.3	-59.6	3500	1200	12.0	ND (2.5)	81.0	329	22.0	40.1	1990	2.23
	13-Mar-09	8100	-6.58	-56.4	3600	1100	11.0	ND (2.5)	79.0	350	22.7	41.4	2550	2.16
	25-Sep-09	6500	-7.59	-61.7	3500	1100	13.0	ND (2.5)	76.0	280	17.0	33.0	2400	2.00
	10-Feb-11 [a]	5900	-6.6	-59.0	3100	1100	13.0	1.00	80.0	310	18.0	50.0	2100	2.20
	09-Dec-11	6200	-6.6	-57.2	3300	1200	12.0	ND (2.5)	74.0	340	22.0	33.0	2400	2.40
	09-Oct-12	---	---	---	3200	1100	12.0	---	79.0	283	19.1	---	2140	---
	29-Nov-12	7400	-6.6	-59.5	3300	1100	14.1 *	ND (2.5)	80.0	286	24.0	32.7	2310	2.13
	29-Nov-12 FD	7400	-6.6	-60.4	3400	1100	14.1 *	ND (2.5)	79.0	284	24.2	32.9	2410	2.06
	14-Mar-13	---	---	---	3400	1100	6.32 *	---	76.0	311	21.7	---	2260	---
	17-Dec-13	7400	-6.4	-57.7	3200	1100	12.4 *	ND (1.0)	80.0	330	22.0	26.0	2300	2.30
	17-Dec-13 FD	7300	-6.52	-59.2	3200	1100	12.9 *	ND (1.0)	78.0	330	21.0	27.0	2400	2.70

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Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

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Monitoring Wells														
MW-20-130	15-Dec-14	6900	-6.7	-59.6	2800	1100	14.0 *	ND (2.5)	85.0	310	21.0	24.0	1800	1.90
	15-Dec-14 FD	6800	-6.76	-59.6	2900	1100	15.0 *	ND (2.5)	85.0	290	20.0	21.0	1700	1.80
MW-25	09-Mar-05	877	-8.4	-62.0	247	169	3.64	ND (0.50)	158	77.6	16.1	6.24	211	0.441
	14-Jun-05	942	-8.6	-61.0	289	183	3.89	ND (0.50)	137	93.5	20.0	8.91	253	0.464
	14-Jun-05 FD	980	-7.2	-59.0	294	185	3.94	ND (0.50)	137	100	20.9	9.06	268	0.475
	04-Oct-05	950	-8.2	-68.0	252	171	3.77	ND (0.50)	141	83.3	14.9	9.93	164	0.362
	04-Oct-05 FD	910	-8.3	-60.0	251	171	3.75	ND (0.50)	146	94.6	15.3	10.2	185	0.371
	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.50)	153	75.5	14.5	9.80	143	0.396
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.50)	156	73.0	14.1	9.71	151	0.382
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.50)	170	76.4	15.6	6.97	210	0.390
	03-May-06	907	-9.0	-59.4	272	172	3.95	ND (0.50)	150	78.0	17.3	7.38	222	0.418
	03-May-06 FD	924	-9.0	-61.0	274	173	3.94	ND (0.50)	155	79.7	17.8	7.53	245	0.431
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.50)	163	73.3	15.0	7.25	206	0.466
	06-Mar-07	843	-9.0	-66.9	221	164	3.95	ND (0.50)	160	72.9	14.4	6.85	203	0.459
	02-Oct-07	796	-9.0	-65.8	189	155	4.58	ND (1.0)	180	66.0	14.0	7.90	200	0.490
	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	190	63.0	13.0	7.70	220	0.460
	07-Oct-08	740	-9.9	-68.5	170	150	4.30	ND (0.50)	200	59.2	12.9	9.89	143	0.559
	07-Oct-08 FD	730	-10.1	-69.1	170	150	4.40	ND (0.50)	210	58.4	12.9	10.2	144	0.559
	21-Sep-09	660	-8.91	-69.9	180	130	4.30	ND (0.50)	200	64.0	12.0	7.20	180	0.460
	21-Sep-09 FD	650	-8.87	-69.5	180	130	4.30	ND (0.50)	200	64.0	12.0	7.90	190	0.470
	07-Dec-10	780	-9.4	-68.9	220	120	4.80	ND (1.0)	180	74.0	15.0	10.0	180	0.430
	15-Dec-11	860	-9.2	-68.6	270	120	5.90	ND (1.0)	170	89.0	19.0	8.50	210	0.490
	15-Dec-11 FD	890	-8.9	-66.7	280	120	6.00	ND (0.50)	170	91.0	19.0	8.00	220	0.500
	11-Dec-12	970	-9.1	-67.6	340	140	7.25 *	ND (0.50)	160	90.0	19.0	7.90	200	0.380
	09-Dec-13	980	-9.02	-68.7	310	140	6.99 *	ND (0.50)	160	98.0	20.0	8.20	220	0.430

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Monitoring Wells														
MW-25	02-Dec-14	970	-9.21	-67.9	350	140	8.90 *	ND (0.50)	150	100	19.0	7.70	210	0.390
MW-26	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.50)	98.7	166	41.6	10.7	439	0.557
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.50)	96.1	166	40.9	11.4	438	0.559
	13-Jun-05	2130	-8.2	-65.0	847	371	4.90	ND (0.50)	103	178	44.6	14.0	511	0.663
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	109	166	40.4	19.8	352	0.526
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	99.7	162	39.9	20.3	349	0.613
	08-Mar-06	2070	-8.6	-60.4	772	324	4.90	ND (0.50)	121	155	38.1	11.7	434 J	0.621
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.50)	121	165	42.0	12.8	555	0.723
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	105	170	43.9	12.8	510	0.692
	12-Mar-07	2280	-9.0	-67.0	917	387	6.02	0.646	90.0	163	41.6	12.9	621	0.622
	02-Oct-07	2180	-8.6	-66.3	945	391	7.84	ND (1.0)	100	170	42.0	15.0	620	0.660
	12-Mar-08	2500	-8.1	-67.2	908	398	10.7 J	ND (1.0)	103	176	44.1 J	16.2 J	498	0.589
	12-Mar-08 FD	2420	-8.9	-68.2	905	398	7.61 J	ND (1.0)	102	160	32.8 J	12.7 J	462	0.601
	08-Oct-08	2400	-8.7	-66.5	930	440	10.0	ND (1.0)	110	183	45.8	14.6	555	0.591
	10-Mar-09	2300	-8.41	-65.3	870	440 J	9.80	1.40	100	172	47.9	14.8	585	0.604
	10-Mar-09 FD	2300	-8.68	-65.8	860	440 J	9.70	1.50	100	174	46.2	15.6	631	0.650
	22-Sep-09	2200	-9.04	-68.3	870	450	10.0	ND (1.0)	100	170	39.0	14.0	550	0.590
	15-Dec-10	---	---	---	900	480	12.0	---	100	180	40.0	---	560	---
	09-Dec-11	2300	-8.1	-65.2	930	530	14.0	1.20	94.0	210	47.0	15.0	690	0.890
	04-Oct-12	---	---	---	920	520	14.0	---	---	178	46.2	---	637	---
	27-Nov-12	---	---	---	930	520	15.6 *	---	100	168	45.0	---	564	---
	12-Mar-13	---	---	---	930	530	9.51 *	---	100	186	48.7	---	662	---
	04-Dec-13	2600	-8.41	-64.1	890	520	18.0 *	1.00	110	160	41.0	12.0	670	0.930
	15-Dec-14	2700	-8.33	-67.3	910	530	21.0 *	1.10	110	150	33.0	---	470	0.790
	15-Dec-14 FD	2700	-8.31	-66.9	910	530	22.0 *	1.00	110	150	34.0	---	450	0.820

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Monitoring Wells														
MW-27-20	08-Mar-05	1250	-12	-102.0	190	432	ND (0.50)	ND (0.50)	215	137	56.6	4.89	195	ND (0.20)
	18-Jul-05	---	-11.9	-98.0	81.9	228	ND (0.50)	ND (0.50)	160	96.1	30.1	4.27	94.8	ND (0.20)
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.50)	ND (0.50)	175	88.6	31.4	5.48	81.0	ND (0.20)
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.50)	ND (0.50)	216	116	41.8	6.96	116	ND (0.20)
	06-Mar-06	664	-12.1	-90.9	89.7	231	ND (0.20)	ND (0.20)	385	89.1	28.8	4.90	103	ND (0.20)
	14-Jun-06	730	-12	-89.8	98.3	272	ND (0.50)	ND (0.50)	195	91.1	28.5	2.79 J	96.9	ND (0.20)
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.50)	ND (0.50)	160	102	34.5	6.45	113	ND (0.20)
	02-Oct-07	802	-12.5	-96.3	102	320	ND (1.0)	ND (1.0)	170	97.0	34.0	5.30	150	0.220
	03-Oct-08	---	---	---	94.0	240	ND (0.50)	---	---	87.9	29.5	---	110	---
	01-Oct-09	---	---	---	88.0	230	ND (0.50)	---	130	84.0	25.0	---	87.0	---
	07-Dec-10	---	---	---	86.0	220	ND (0.50)	---	200	87.0	29.0	---	93.0	---
	05-Dec-11	---	---	---	83.0	220	ND (0.50)	---	150	83.0	25.0	---	83.0	---
	03-Dec-12	---	---	---	76.0	210	ND (0.010) *	---	150	76.0	24.0	---	76.0	---
	04-Nov-13	---	---	---	76.0	210	ND (0.010) *	---	150	73.0 J	23.0	---	80.0	---
	04-Nov-14	650	---	---	84.0	220	ND (0.050) *	ND (0.50)	150	78.0	23.0	---	89.0	0.100
MW-28-25	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.50)	ND (0.50)	204	129	36.3	3.50	122	ND (0.20)
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.50)	ND (0.50)	221	133	38.9	6.54	117	ND (0.20)
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.50)	ND (0.50)	197	123	37.0	6.61	88.7	ND (0.20)
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.50)	ND (0.50)	212	134	41.5	6.46	107	ND (0.20)
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.50)	ND (0.50)	244	98.5	27.5	4.15 J	88.5	ND (0.20)
	05-May-06	741	-11.4	-90.3	110	302	ND (0.50)	ND (0.50)	216	117	35.7	5.77	118	ND (0.20)
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.50)	ND (0.50)	225	133	40.8	5.47	132	ND (0.20)
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	230	120	37.0 J	4.80	150	0.260 J
	08-Oct-08	---	---	---	100	280	ND (0.50)	---	220	109	34.7	---	102	---
	24-Sep-09	---	---	---	94.0	240	ND (0.50)	---	200	100	27.0	---	100 J	---

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Monitoring Wells														
MW-28-25	08-Dec-10	---	---	---	90.0	230	ND (0.50)	---	190	110	31.0	---	95.0	---
	12-Dec-11	---	---	---	97.0	260	ND (0.50)	---	200	110	33.0	---	96.0	---
	05-Dec-12	---	---	---	87.0	240	0.0128 *	---	200	93.0	29.0	---	86.0	---
	05-Nov-13	---	---	---	1900	580	ND (0.010) *	---	250	100	29.0	---	83.0	---
	11-Nov-14	730	---	---	91.0	250	ND (0.050) *	ND (0.50)	200	100	27.0	---	86.0	0.140
MW-30-30	10-Mar-05	38800	-9.8	-79.0	16000	4270	ND (5.0)	7.91	421	1590	1600	95.4	13600	4.97
	07-Oct-05	36400	-8.5	-75.0	17600	4000	ND (0.50)	ND (10)	521	1020	842	93.6	7650	5.20
	15-Dec-05	35700	-8.7	-59.0	19700	4070	ND (1.0)	3.13	504	1060	894	110	8540	6.14
	13-Mar-06	39700 J	-8.8	-70.5	18600	4530	ND (0.50)	ND (50)	650	1050	892	77.2	11300	4.62
	02-May-06	32400	-10.3	-70.7	15400	3300	ND (0.50)	ND (5.0)	756	882	828	59.4	10300	3.95
	10-Oct-06	29400	-9.4	-68.7	17800	4400	ND (2.5)	ND (2.5)	550	729	653	55.0	10200	4.32
	08-Oct-07	27400	-9.0	-73.9	13700	3370	ND (1.0)	3.88	800	650	540	56.0	9600	4.50
	24-Sep-09	---	---	---	5800	1700	ND (5.0)	---	550	280	220	---	3800	---
	07-Dec-10	---	---	---	7200	1900	ND (1.0)	---	790	390	290	---	4800	---
	07-Dec-11	---	---	---	10000	3200	ND (5.0)	---	910	340	290	---	6300	---
	03-Dec-12	---	---	---	8700	3400	0.0269 *	---	1500	300	260	---	7000	---
	04-Nov-13	---	---	---	1200	600	0.0174 *	---	470	52.0	37.0	---	1100	---
	10-Nov-14	5800	---	---	2200	1700	ND (0.050) *	0.700	970	130	85.0	---	2300	2.20
MW-30-50	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.50)	1.03	324	335	107	16.5	2040	1.15
	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.50)	0.899 J	252	438	101	37.0	1780	1.27
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.50)	0.645	212	265	77.9	32.9	1260	1.19
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.50)	ND (0.50)	275	226	66.2	14.6	1640	1.18
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.50)	3.41	261	243	70.3	16.4	1750	1.22
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.50)	ND (0.50)	290	171	48.5	14.0	1370	1.11
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.50)	ND (0.50)	298	163	46.1	14.1	1340	1.08

TABLE F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-30-50	24-Sep-09	---	---	---	---	---	---	---	220	19.0	4.80	---	270	---
	07-Dec-10	---	-12.2	-97.5	140	220	ND (0.50)	---	200	15.0	4.20	---	260	---
	08-Dec-11	---	-12.3	-98.2	130	210	ND (0.50)	---	200	34.0	9.40	---	240	---
	03-Dec-12	---	-12.5	-103.0	110	200	ND (0.010) *	---	190	46.0	13.0	---	170	---
	04-Nov-13	---	-12.6	-101.0	110	200	ND (0.010) *	---	200	57.0	15.0	---	160	---
	10-Nov-14	700	-12.4	-104.0	120	200	ND (0.050) *	ND (0.50)	190	64.0	15.0	---	140	0.160
	10-Nov-14 FD	700	-12.5	-103.0	120	200	ND (0.050) *	ND (0.50)	160	64.0	15.0	---	140	0.180
MW-31-60	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.50)	76.6	108	17.3	5.97	424	0.401
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.50)	70.0	121	18.9	6.57	403	0.388
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.50)	77.3	109	16.5	9.75	308	0.462
	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.50)	73.0	87.0	15.4	9.32	275	0.359
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.50)	89.3	106	17.5	7.30	403	0.393
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.50)	81.9	101	16.8	6.94	391	0.383
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.50)	79.6	118	20.1	7.78	467	0.449
	05-Oct-06	1620	-9.4	-66.3	687	205	5.00	ND (0.50)	80.0	113	20.6	9.60 J	325	0.464
	12-Mar-07	1750	-9.3	-69.0	757	222	4.93	ND (0.50)	72.5	116	20.3	6.05	454	0.402 J
	04-Oct-07	1720	-9.4	-69.6	799	208	5.15	ND (1.0)	80.0	150	26.0	7.30	580	0.640
	06-Oct-08	2000	-10.2	-72.2	810	240	4.20	ND (1.0)	81.0	150	26.0	9.39	460	0.399
	21-Sep-09	1800	-9.23	-72.1	870	220	3.70	ND (1.0)	75.0	160	26.0	9.60	480	0.430
	15-Dec-10	2000	-9.0	-69.3	840	210	3.50	ND (0.50)	78.0	170	27.0	12.0	440	0.430
	06-Dec-11	1800	-8.8	-67.9	790	200	3.40	ND (1.0)	76.0	150	24.0	7.60	450	0.540
	13-Nov-12	1900	-9.2	-71.8	890	200	3.30 *	ND (0.50)	78.0	150	24.0	7.10	470	0.440
	03-Dec-13	1900	-8.56	-66.4	870	220	3.53 *	ND (0.50)	78.0	140	24.0	6.40	520	0.480
	03-Dec-14	1700	-8.83	-68.5	790	210	3.90 *	ND (0.50)	140	120	19.0	5.20	430	0.400
MW-32-20	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.50)	3.51	123	838	302	36.9	4000	2.76

TABLE F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2014

Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-32-20	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.50)	ND (2.5)	676	566	231	23.3	2620	1.75
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	733	1380 J	613 J	91.1 J	5400 J	4.75 J
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	861	1470	552	90.4	4950	4.16
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.50)	ND (0.50)	432	1350	530	56.1	6440	3.54
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.50)	2.35	218	937	445	46.0	4780	2.87
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	660	1870	1070	87.0	11300	6.34
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	825	1530	785	81.7	8420	4.98
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	765	1460	635	64.4	7110	3.92
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.20)	3.78	770	965	484	51.4	5520	3.02
	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	700	1800	1100	93.0	9900	5.70
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	800	1190	710	67.4	11600	2.31
	03-Oct-08	---	---	---	21000	3500	ND (5.0)	---	640	1700	1080	---	9550	---
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
	22-Sep-09	---	---	---	20000	3600	ND (5.0)	---	730	1800	740	---	9300	---
	08-Dec-10	---	---	---	17000	4100	ND (5.0)	---	830	1600	720	---	11000	---
	08-Dec-11	---	---	---	17000	4400	ND (5.0)	---	1000	1400	670	---	11000	---
	05-Dec-12	---	---	---	15000	6000	1.16 *	---	---	900	500	---	9800	---
	16-Dec-13	---	---	---	13000	5400	0.0427 *	---	1500	970	530	---	11000	---
MW-32-35	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.50)	0.845	260	312	85.5	13.0	944	1.07
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.50)	ND (2.5)	223	506	120	14.8	2110	1.18
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.50)	ND (5.0)	208	567	134	29.3	1530	1.26
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1.0)	1.02	219	606	128	30.0	1580	1.25
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.50)	ND (0.50)	234	654	129	19.2	2360	1.13
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.50)	ND (0.50)	218	693	148	19.5	2800	1.38
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	290	839	165	23.9	3260	1.48

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PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-32-35	11-Dec-06	10400	-9.0	-70.4	5090	1000	ND (0.50)	1.90	338	845	173	22.5	2620	1.43
	06-Mar-07	12600	-10.2	-75.4	6070	1200	ND (0.50)	2.65	360	1080	209	23.5	2910	1.35
	30-Apr-07	12100	-9.9	-78.7	6610	1280	ND (0.20)	2.60	475	1250	273	26.2	3280	1.35
	01-Oct-07	13700	-8.9	-72.7	6830	1120	ND (1.0)	2.62	490	1000	390	29.0	4000	1.70
	03-Oct-08	15000	-9.8	-73.1	7600	1300	ND (2.5)	3.10	550	829	150	52.3	3490	1.49
	22-Sep-09	13000	-9.32	-75.2	6900	1400	ND (2.5)	2.80	530	880	400	53.0	3100	1.70
	09-Dec-10	11000	-10.2	-84.2	5500	1600	ND (2.5)	ND (2.5)	590	750	390 J	51.0 J	3000	1.70 J
	09-Dec-11	8500	-10.8	-84.2	5000	1700	ND (2.5)	ND (2.5)	640	680	310	34.0	3100	1.70
	05-Dec-12	10000	-11	-89.0	4300	1700	0.0274 *	ND (5.0)	630	460	240	31.0	2700	1.30
	06-Nov-13	8300	-11	-87.2	3500	1600	0.0482 *	ND (2.5)	580	450	210	23.0	2500	1.20
	11-Nov-14	5800	-10.4	-87.8	3100	1500	---	ND (0.50)	550	450	170	18.0	2000	1.10
MW-34-55	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.50)	0.654	240	366	71.3	29.1	1900	1.19
	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.50)	ND (0.50)	242	247	52.0	16.5	1420	1.02
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.50)	ND (0.50)	232	272	59.1	25.8	1230	1.20
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.50)	0.588	236	217	45.0	27.2	965	0.937
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.50)	ND (0.50)	272	256	54.2	13.5	1640	0.956
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.50)	ND (0.50)	302	198	44.8	11.1	1360	0.846
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.50)	ND (0.50)	368	37.6	8.08	4.59	536	0.540
	03-Oct-07	730	-11.3	-96.6	109	266	ND (1.0)	ND (1.0)	190	15.0	3.30	3.30	290	0.260
	07-Oct-08	700	-13	-100.0	100	250	ND (0.50)	---	170	72.4	16.9	5.26	192	0.248
	30-Sep-09	700	-12.3	-101.0	---	---	---	---	160	77.0	17.0	4.40	120	0.150
	07-Dec-10	590	-12.1	-98.8	87.0	230	ND (0.50)	ND (0.50)	140	81.0	19.0	5.10	100	0.100
	06-Dec-11	630	-12.3	-101.0	83.0	220	ND (0.50)	ND (0.50)	160	81.0	19.0	4.60	100	0.190
	12-Dec-12	630	-12.7	-105.0	78.0	210	ND (0.010) *	ND (0.50)	140	75.0	20.0	3.70	100	0.150
	20-Nov-13	600	-13.1	-103.0	72.0	210	ND (0.010) *	ND (0.50)	150	69.0	19.0	4.30	88.0	0.130

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Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-55	06-Nov-14	640	-12.4	-102.0	76.0	200	ND (0.050) *	ND (0.50)	140	72.0	20.0	4.00	85.0	ND (0.10)
MW-34-80	08-Mar-05	6940	-10.4	-83.0	4180	1040	ND (0.50)	1.01	304	439	68.1	28.0	2750	1.65
	15-Mar-05	8980	---	---	3920	ND (5.0)	ND (1.0)	---	288	445	65.7	29.7	2990	---
	30-Jun-05	7840	-8.4	-82.0	3910	979	ND (0.50)	ND (0.50)	302	497	76.5	27.7	2670	1.66
	05-Oct-05	10200	-10.1	-85.0	3880	1060	ND (0.50)	ND (0.50)	302	429	72.5	47.4	1660	1.57
	14-Dec-05	8800	-10.2	-71.0	3700	880	ND (0.50)	0.854	297	432	68.3	54.9	1710	1.54
	09-Mar-06	7830	-9.9	-86.8	3520	986	ND (0.50)	ND (0.50)	313	383	65.8	24.0	2420	1.49
	03-May-06	7950	-11.7	-77.6	3700	921	ND (0.50)	ND (0.50)	297	425	70.3	23.9	2480	1.38
	04-Oct-06	7080	-11.3	-81.8	3210	786	ND (0.50)	0.737	268	341	65.4	21.1	2170	1.31
	12-Dec-06	6510	-10.5	-80.9	3190	789	ND (0.50)	0.742	288	298	62.9	18.9	2040	1.26
	05-Mar-07	6360 J	-11.5	-85.8	3300	783	ND (0.50)	0.720	205	315	68.3	19.4	2020	1.29
	30-Apr-07	6390	-11.5	-88.9	3320 J	889 J	ND (0.20)	ND (1.0)	245	282	57.0	18.6	2080	1.33
	03-Oct-07	5490	-11.3	-87.8	2630	696	ND (1.0)	ND (1.0)	240	220	53.0	21.0	2000	1.20
	13-Dec-07	5420	-10.9	-88.6	2380	698	ND (1.0)	ND (1.0)	264	193	49.1	25.4	1450	1.09
	12-Mar-08	5500	-11.4	-87.3	2510	739	ND (1.0)	ND (1.0)	238	237	52.6	19.2	2030	1.14
	06-May-08	5820	-11.4	-87.3	2460	753	ND (0.20)	0.525	216	230	49.0	30.0	1600	1.20
	07-Oct-08	5300	-11.8	-87.6	2400	720	ND (2.0)	ND (2.0)	250	223	46.3	22.0	1220	0.765
	10-Dec-08	5300	-11	-93.1	2190	698	ND (1.0)	ND (1.0)	253	147	45.2	20.6	3880	1.11
	10-Mar-09	5100	-10.9	-84.8	2300	700 J	ND (2.5)	ND (2.5)	240	219	46.3	22.2	1480	1.08
	30-Apr-09	5830	-11.5	-85.8	2340	768	ND (1.0)	ND (1.0)	237	219	50.0	24.6	1510	1.11
	30-Sep-09	4000	-10.8	-88.9	2300	710	ND (1.0)	ND (1.0)	230	240	46.0	22.0	1500	0.980
	10-Mar-10	4900	-12.1	-91.6	2100	660	ND (1.0)	ND (1.0)	240	220 J	41.0	28.0	1400 J	0.930
	07-Dec-10	4600	-11.1	-87.3	2300	700	ND (1.0)	ND (1.0)	220	240	47.0	24.0	1300	1.00
	06-Dec-11	3900	-11.1	-88.1	1900	640	ND (1.0)	ND (1.0)	230	220	43.0	16.0	1300	1.10
	12-Dec-12	4300	-11.2	-90.2	1800	630	ND (0.010) *	ND (1.0)	250	220	51.0	17.0	1300	1.00

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Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-80	12-Dec-12 FD	---	-11.1	-89.3	1800	630	ND (0.010) *	---	250	210	48.0	---	1300	---
	20-Nov-13	4500	-11.4	-88.0	1900	620	ND (0.010) *	ND (1.0)	260	210	52.0	14.0	1300	0.960
	20-Nov-13 FD	4600	-11.2	-88.4	1900	620	ND (0.010) *	ND (1.0)	260	210	56.0	14.0	1200	1.00
	06-Nov-14	---	-11.6	-90.9	---	---	---	---	280 J	240	50.0	12.0	1200	0.840
MW-34-100	14-Mar-05	10800	---	---	5010	1210	ND (1.0)	---	175	221	17.4	34.1	3600	---
	21-Jun-05	11300	-9.7	-75.0	5350	1270	1.05	ND (0.50)	179	229	17.4	27.1	3510	2.22
	21-Jun-05 FD	10900 J	-9.5	-77.0	4920	1180	1.03	ND (0.50)	179	243	18.2	32.1	3740	2.36
	05-Oct-05	10400	-9.9	-83.0	4530	1150	1.20	ND (0.50)	172	171	13.8	55.2	2450	2.57
	05-Oct-05 FD	10400	-9.9	-83.0	4680	1200	1.21	ND (0.50)	172	228	14.1	50.9	2730	2.57
	14-Dec-05	---	---	---	---	---	---	---	---	226	14.9	62.9	2530	2.32
	14-Dec-05 FD	---	---	---	---	---	---	---	---	220	15.1	64.2	2530	2.40
	08-Mar-06	10000	-11.4	-75.5 J	4720	1180	1.39	---	152	179	12.1	32.5	3580	2.41
	08-Mar-06 FD	10100	-10.1	-102 J	4920	1220	1.39	---	159	182	11.9	36.5	3530	2.46
	30-Apr-07	10600	-10.9	-80.7	5920	1040	1.38	---	123	186	12.0	31.5	3840	2.39
	30-Apr-07 FD	11900	-11.2	-82.1	5880	1050	1.37	---	123	189	12.0	32.1	3920	2.40
	03-Oct-07	10700	-10.2	-78.2	5350	970	1.19	ND (1.0)	120	170	11.0	44.0	4300	2.50
	03-Oct-07 FD	10500	-10.6	-78.4	5360	953	1.03	ND (1.0)	120	160	10.0	43.0	4300	2.40
	07-Oct-08	11000	-10.9	-80.8	5400	1200	ND (2.5)	ND (2.5)	140	158	10.6	54.5	2970 J	2.35
	07-Oct-08 FD	11000	-11	-81.3	5600	1200	ND (2.5)	ND (2.5)	140	184	11.5	56.7	3880 J	2.59
	30-Sep-09	---	---	---	5500	1300	ND (5.0)	---	170	200	11.0	73.0	3800	2.30
	08-Dec-10	10000	-9.8	-79.5	5800	1300	ND (2.5)	ND (2.5)	140 J	190	9.60	52.0 J	4100	2.60
	08-Dec-10 FD	9900	-10	-80.4	5700	1200	ND (1.0)	ND (1.0)	89.0 J	180	9.80	60.0 J	4000	2.50
	06-Dec-11	10000	-10.1	-79.2	5700	1300	ND (2.5)	ND (2.5)	120	170	7.60	43.0	4000	2.70
	06-Dec-11 FD	9400	-10	-79.5	5600	1200	ND (2.5)	ND (2.5)	120	160	7.40	43.0 J	3900	2.70
	26-Nov-12	11000	-10.1	-80.5	5900	1200	0.444 *	ND (2.5)	120	150	8.60	47.0	3100	2.60

TABLE F-1

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Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L) Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-100	26-Nov-12 FD	11000	-10.2	-80.9	5900	1200	0.421 *	ND (2.5)	130	150	8.20	47.0	3200	2.60
	20-Nov-13	10000	-10.2	-78.9	5300	1200	0.422 *	ND (2.5)	120	140	8.00	35.0	3900	2.60
	20-Nov-13 FD	10000	-9.81	-79.3	5300	1100	0.419 *	ND (2.5)	120	150	8.50	35.0	3900	2.70
	01-Dec-14	9900	-9.97	-77.0	5400	1100	0.580 J*	ND (1.0)	95.0	140	5.60	30.0	3900	2.20
	01-Dec-14 FD	9900	-10.1	-77.2	5500	1100	0.610 J*	ND (1.0)	100	140	5.60	32.0	4000	2.00
Surface Water Stations														
R-27	07-Mar-05	669	-12.3	-102.0	92.7	244	ND (0.50)	ND (0.50)	136	82.8	31.3	4.72	108	ND (0.20)
	14-Jun-05	686	-11.4	-92.0	90.9	266	ND (0.50)	ND (0.50)	127	81.9	29.8	6.04	98.9	ND (0.20)
	05-Oct-05	678	-11.6	-94.0	85.1	255	ND (0.50)	ND (0.50)	130	101	36.2	6.56	91.2	ND (0.20)
	16-Dec-05	718	-11.7	-87.0	87.9	253	ND (0.50)	ND (0.50)	126	85.5	29.5	5.99	75.6	ND (0.20)
	06-Mar-06	656	-11.8	-92.1	90.6	268	ND (0.50)	ND (0.50)	144	83.5	29.4	5.44 J	101	ND (0.20)
	03-May-06	567	-12.8	-93.9	93.1	267	ND (0.50)	ND (0.50)	139	87.0	31.1	3.12 J	106	ND (0.20)
	04-Oct-06	752 J	-12.2	-94.9	91.5	261	ND (0.50)	ND (0.50)	128	82.9	31.5	6.24 J	98.1	ND (0.20)
	20-Dec-06	680	-12.7	-98.1	94.5	266	ND (0.50)	ND (0.50)	138	83.2	30.9	3.64	106	ND (0.20)
	13-Mar-07	750 J	-13	-99.5	96.5	267	0.537	ND (0.50)	130	86.9	31.3	4.73	106	ND (0.20)
	08-May-07	715 J	-12.9	-104.0	92.6	269	ND (0.50)	ND (0.50)	143	84.3	29.8	5.55	100	ND (0.20)
	11-Sep-07	650	-12.5	-101.0	89.4	253	0.336	ND (0.20)	132	74.2	28.9	5.47	86.5	ND (0.20)
	05-Dec-07	---	-11.7	-99.0	94.7	256	ND (1.0)	ND (0.20)	137	89.8	31.7	6.60	93.4	0.157
	02-Apr-08	---	---	---	93.0	267	ND (1.0)	ND (1.0)	136	80.2	30.7	5.50	106	0.432
	17-Jun-08	682	-13	-101.0	91.6	254	ND (1.0)	ND (1.0)	134	76.2	31.8	6.69	89.7	ND (0.20)
R-28	08-Mar-05	651	-12.5	-102.0	90.4	231	ND (13)	ND (0.50)	132	83.7	31.4	5.02	107	ND (0.20)
	14-Jun-05	680	-11.6	-95.0	91.2	268	ND (0.50)	ND (0.50)	127	78.5	28.5	5.08	94.5	ND (0.20)
	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.50)	ND (0.50)	122	85.7	30.4	6.30	77.0	ND (0.20)
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.50)	ND (0.50)	126	87.2	29.8	6.11	76.8	ND (0.20)
	06-Mar-06	675	-12.3	-93.4	91.0	270	ND (0.50)	ND (0.50)	146	76.6	26.6	5.22 J	91.5	ND (0.20)

TABLE F-1

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PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (0/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Dissolved Metals (mg/L)				
										Calcium	Magnesium	Potassium	Sodium	Boron
Surface Water Stations														
R-28	03-May-06	586	-13	-92.1	93.4	270	ND (0.50)	ND (0.50)	136	88.1	31.4	4.04 J	107	ND (0.20)
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.50)	ND (0.50)	133	84.2	32.1	6.17 J	96.5	ND (0.20)
	20-Dec-06	615	-12.4	-99.6	93.3	262	ND (0.50)	ND (0.50)	143	85.7	32.0	4.66	108	ND (0.20)
	14-Mar-07	710	-12.8	-100.0	96.7	268	0.534	ND (0.50)	133	87.9	31.0	5.71	105	ND (0.20)
	09-May-07	690	-13	-102.0	95.8	271	ND (0.50)	ND (0.50)	143	86.1	30.5	5.92	103	ND (0.20)
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.20)	122	73.8	29.9	6.36	89.2	ND (0.20)
	06-Dec-07	---	-11.7	-98.6	96.5	258	0.345	ND (0.20)	139	75.7	30.4	6.62	79.4	ND (0.20)
	02-Apr-08	---	---	---	92.5	309	ND (1.0)	ND (1.0)	137	84.7	31.4	5.58	108	0.467
	18-Jun-08	672	-13.2	-102.0	89.4	248	ND (1.0)	ND (1.0)	132	43.3	31.1	6.95	93.9	ND (0.20)
	17-Sep-08	640	---	---	91.4	256	ND (0.50)	ND (0.50)	132	83.4	31.2	6.48	78.0	ND (0.20)
	04-Dec-08	649	-11.9	-97.0	97.4	260	ND (1.0)	ND (1.0)	135	81.7	30.0	5.95	114	0.262
	21-Jan-09	652	-12	-96.7	91.5	253	ND (0.50)	ND (0.50)	134	79.2	27.8	6.01	91.7	ND (0.20)
	09-Apr-09	643	-12.4	-97.8	92.7	250	ND (1.0)	ND (0.50)	138	79.6	28.8	5.44	97.0	ND (0.20)
	08-Jul-09	632	-12.8	-98.6	84.5	239	ND (0.50)	ND (0.50)	131	79.6	27.3	6.17	86.9	ND (0.20)
	09-Sep-09	640	-12.5	-99.1	86.0	236	ND (1.0)	ND (1.0)	131	74.8	26.2	6.01	78.7	ND (0.20)
	14-Dec-09	612	-13	-98.3	89.7	244	ND (1.0)	ND (1.0)	131	73.5	26.7	4.98	88.2	ND (0.20)
	21-Dec-10	602	-12.1	-102.0	91.0	223	ND (0.50)	ND (0.50)	133	69.1	24.8	4.75	87.8	ND (0.20)
	11-Jan-12	---	---	---	80.5	218	ND (0.50)	ND (0.50)	127	70.2	27.4	4.76	83.7	ND (0.20)
	01-Nov-12	499	-12.6	-102.0	75.4	212	ND (0.50)	ND (0.50)	132	71.3	27.5	4.12	79.3	ND (0.20)
	21-Nov-13	564	-12.8	-103.0	80.4	220	0.293 *	ND (0.50)	131	73.2	26.2	4.44	84.7	0.121
	20-Nov-14	620	-12.3	-100.0	85.0	230	0.290 *	ND (0.50)	130	68.0	23.0	4.50	88.0	0.130

TABLE F-1

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Notes:

(---) = data not collected or available.
0/00 = differences from global standards in parts per thousand.
FD = field duplicate sample.
J = concentration or reporting limit estimated by laboratory or data validation.
mg/L = milligrams per liter.
ND =parameter not detected at the listed reporting limit.

Alkalinity (total) reported as calcium carbonate.

[*] Nitrate as nitrogen was not requested. Nitrate/nitrite as nitrogen is shown.

[a] Data collected February 2011 due to field logistical issues.

Appendix G
Interim Measure Extraction System Operations Log, November 2014 through December 2014

APPENDIX G

Interim Measures Extraction System Operations Log, Fourth Quarter 2014, PG&E Topock Performance Monitoring Program

During Fourth Quarter 2014 (November and December), extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute, excluding periods of planned and unplanned downtime. Extraction well TW-2D ran for a short period of time on December 15, 2014 for sample collection during the fourth quarter groundwater monitoring program sampling event. Extraction well TW-2S was not operated during Fourth Quarter 2014 (November – December 2014). The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 98.1 percent during Fourth Quarter 2014. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 95.6 percent during the 2014 annual reporting period.

The Interim Measure Number 3 (IM-3) facility treated approximately 11,653,156 gallons of extracted groundwater during Fourth Quarter 2014. The IM-3 facility also treated approximately 750 gallons of water generated from the groundwater monitoring program and 7,200 gallons of water from IM-3 well backwashing. Four containers of solids from the IM-3 facility were transported offsite during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.9 percent of downtime during Fourth Quarter 2014) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (for example, water level data) at the site.

G.1 November 2014

- **November 4, 2014 (unplanned):** The extraction well system was offline from 10:10 a.m. to 11:58 a.m. due to loss of power from the City of Needles and the failure of the main programmable logic controller (PLC) uninterruptable power supply (UPS). Extraction system downtime was 1 hour, 48 minutes.
- **November 6, 2014 (planned):** The extraction well system was offline from 1:10 p.m. to 1:48 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 38 minutes.
- **November 10, 2014 (unplanned):** The extraction well system was offline from 2:04 a.m. to 4:08 a.m. and 4:42 a.m. to 4:52 a.m. due to shutdown of the air compressor. Extraction system downtime was 2 hours, 14 minutes.
- **November 12, 2014 (unplanned):** The extraction well system was offline from 1:46 a.m. to 2:24 a.m. to clean the microfilter strainer. Extraction system downtime was 38 minutes.
- **November 14, 2014 (unplanned):** The extraction well system was offline from 6:22 a.m. to 6:36 a.m. due to loss of power from the City of Needles. Extraction system downtime was 14 minutes.
- **November 15, 2014 (planned):** The extraction well system was offline from 1:32 p.m. to 1:56 p.m. to install a new UPS on the main PLC. Extraction system downtime was 24 minutes.
- **November 16, 2014 (unplanned):** The extraction well system was offline from 12:36 a.m. to 7:06 a.m. due to failure of the reverse osmosis PLC cards. Extraction system downtime was 6 hours, 30 minutes.
- **November 16, 2014 (unplanned):** The extraction well system was offline from 11:10 a.m. to 11:18 a.m. due to loss of power from the City of Needles. Extraction system downtime was 8 minutes.

- **November 16, 2014 (unplanned):** The extraction well system was offline from 12:50 p.m. to 1:22 p.m. to conduct tank level management in the Raw Water Storage Tank (T-100). Extraction system downtime was 32 minutes.
- **November 19, 2014 (planned):** The extraction well system was offline from 7:28 a.m. to 11:26 a.m. for Helix Electric to install a new surge protection device at IM-3. Extraction system downtime was 3 hours, 58 minutes.
- **November 25, 2014 (planned):** The extraction well system was offline from 9:30 a.m. to 11:58 a.m. for Helix Electric to install a new 4-20ma signal panel. Extraction system downtime was 2 hours, 28 minutes.
- **November 28, 2014 (unplanned):** The extraction well system was offline from 4:22 a.m. to 5:58 a.m. to replace the microfilter strainer. Extraction system downtime was 1 hour, 36 minutes.

G.2 December 2014

- **December 2, 2014 (unplanned):** The extraction well system was offline from 10:40 p.m. to 10:46 p.m. due to a required reset of the human-machine interface system. Extraction system downtime was 6 minutes.
- **December 3, 2014 (planned):** The extraction well system was offline from 8:50 a.m. to 9:30 a.m. and 9:46 a.m. to 9:48 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 42 minutes.
- **December 6, 2014 (unplanned):** The extraction well system was offline from 10:10 a.m. to 1:18 p.m. due to a power surge from the City of Needles causing the malfunction of several PLC cards. Extraction system downtime was 3 hours, 8 minutes.
- **December 9, 2014 (unplanned):** The extraction well system was offline from 1:26 p.m. to 2:56 p.m. to change the microfilter modules. Extraction system downtime was 1 hour, 30 minutes.
- **December 11, 2014 (unplanned):** The extraction well system was offline from 9:48 p.m. to 9:52 p.m. due to loss of power from the City of Needles. Extraction system downtime was 4 minutes.
- **December 12, 2014 (unplanned):** The extraction well system was offline from 9:06 a.m. to 9:20 a.m. and 8:06 p.m. to 8:16 p.m. to switch to/from backup generator power due to loss of power from the City of Needles. Extraction system downtime was 24 minutes.
- **December 26, 2014 (unplanned):** The extraction well system was offline from 1:22 p.m. to 1:38 a.m. to replace the microfilter strainer. Extraction system downtime was 16 minutes.
- **December 31, 2014 (unplanned):** The extraction well system was offline from 11:50 a.m. to 12:02 p.m. and from 2:22 p.m. to 2:28 p.m. to switch to/from backup generator power due to loss of power from the City of Needles. Extraction system downtime was 18 minutes.
- **December 31, 2014 (unplanned):** The extraction well system was offline from 10:00 p.m. to 10:02 p.m., 10:46 p.m. to 10:50 p.m., and 10:52 p.m. to 10:54 p.m. due to loss of power from the City of Needles. Extraction system downtime was 8 minutes.