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June 10, 2019

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Mr. Aaron Yue
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Subject: **May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup, PG&E Topock Compressor Station, Needles, California**
(Document ID: TPK_Monthly_Progress_Rpt_MAY_2019_20190610_Final)

Dear Ms. Innis and Mr. Yue:

In compliance with the *1996 Corrective Action Consent Agreement* (CACA) (Attachment 6, Part E, Section 9a and Attachment 7) and the *2013 Remedial Design/Remedial Action Consent Decree* (CD) (¶32 and Appendix C, Section 5), and pursuant to the *Construction/ Remedial Action Work Plan* (C/RAWP) (Section 2.6.3.1), this monthly report describes activities taken at Pacific Gas and Electric Company's (PG&E's) Topock Compressor Station during April 2019 as well as activities planned for the next six weeks (June 11 through July 18, 2019), and presents available results from sampling and testing performed in May 2019.

In addition, this report discusses material deviations from the approved design documents and/or the C/RAWP, if any, that PG&E has proposed to the California Department of Toxic Substances Control (DTSC) and the U.S. Department of the Interior (DOI), or that have been approved by DTSC and DOI. This report also highlights key personnel changes, if any, and summarizes activities performed and activities planned in support of DOI's 2012 Community Involvement Plan and DTSC's 2019 Community Outreach Plan, as well as contacts with the local community, representatives of the press, and/or public interest groups, if any. This report also includes data from samples collected as part of the sitewide groundwater monitoring program within 60 days of sample collection, as required by the Condition of Approval # xi in DTSC's approval letter dated August 24, 2018.

Please note that since activities conducted to comply with the project's Applicable or Relevant and Appropriate Requirement (ARARs) and the Subsequent Environmental Impact Report (SEIR) mitigation measures are currently reported in separate compliance reports, this information is not repeated in the monthly reports.

Monthly progress reports will be submitted to DTSC and DOI by the 10th day of the following month during construction and start-up of the groundwater remedy at the Topock Compressor Station which officially began on October 2, 2018. This is the eighth monthly progress report. Please contact me at (760) 791-5884 if you have any questions or comments regarding this submittal.

Sincerely,

Curt Russell
Topock Project Manager

Topock Project Executive Abstract

Document Title: *May 2019 Monthly Progress Report for the Groundwater Remedy Construction and Startup, PG&E Topock Compressor Station, Needles, California*

Submitting Agency: DOI, DTSC

Final Document? ☒ Yes ☐ No

Date of Document: 6/10/2019

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 & Input

☐ 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(RA)
- ☐ 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?

The consequence for not doing this item is PG&E will be out of compliance with the 1996 Corrective Action Consent Agreement (CACA) and the 2013 Remedial Design/ Remedial Action Consent Decree (CD), as well as the Construction/Remedial Action Work Plan (C/RAWP).

Other Justification/s:

☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

This monthly report describes activities taken during April 2019 and activities planned for the next six weeks (June 11 through July 18, 2019) and presents available results from sampling and testing in May 2019. In addition, this report discusses material deviations from the approved design documents and/or the *Construction/ Remedial Action Work Plan* (C/RAWP), if any, that PG&E has proposed to the California Department of Toxic Substances Control (DTSC) and the U.S. Department of the Interior (DOI) or that have been approved by DTSC and DOI. This report also highlights key personnel changes, if any, and summarizes activities performed and activities planned at the Topock Compressor Station in support of DOI's 2012 Community Involvement Plan and DTSC's 2019 Community Outreach Plan, as well as contacts with local community, representatives of the press, and/or public interest groups, if any.

Written by: Pacific Gas and Electric Company

Recommendations:

Provide input to PG&E.

How is this information related to the Final Remedy or Regulatory Requirements:

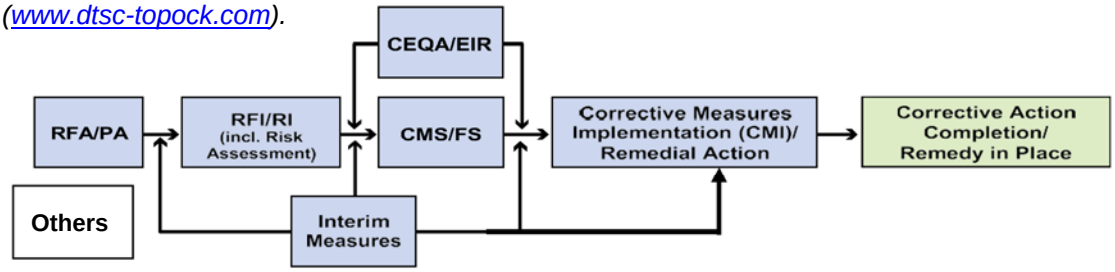
This submittal is required in compliance with the CACA, CD, and pursuant to the C/RAWP.

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

May 2019
Monthly Progress Report for the Final Groundwater Remedy Construction and Startup

PG&E Topock Compressor Station
Needles, California

Document ID: TPK_Monthly_Progress_Rpt_MAY_20190610_Final

June 2019

Prepared for
U.S. Department of the Interior and California Department of Toxic Substances Control

On Behalf of
Pacific Gas and Electric Company

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Acronyms and Abbreviations

µg/m^3	micrograms per cubic meter
AOC	Area of Concern
APE	Area of Potential Effect
ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BMP	best management practice
CACA	Corrective Action Consent Agreement
C/RAWP	Construction/Remedial Action Work Plan
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH2M	CH2M HILL, Inc.
CHQ	Construction Headquarters
DOI	United States Department of the Interior
DTSC	California Department of Toxic Substances Control
ERTC	Environmental Release to Construct
FCR	field contact representative
LOC	level of concern
NTH	National Trails Highway
PBA	Programmatic Biological Agreement
PG&E	Pacific Gas and Electric Company
RCRA	Resource Conservation and Recovery Act
SEIR	Subsequent Environmental Impact Report
SPY	Soil Processing Yard
SWPPP	Stormwater Pollution Prevention Plan
TCS	Topock Compressor Station
TRC	Technical Review Committee
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WEAT	Worker Environmental Awareness Training
WVR	Work Variance Request

1. Introduction

Pacific Gas and Electric Company (PG&E) is implementing the final groundwater remedy to address chromium in groundwater near the PG&E Topock Compressor Station (TCS), located in eastern San Bernardino County 15 miles southeast of the city of Needles, California.

The U.S. Department of the Interior (DOI) is the lead federal agency overseeing remedial actions at the TCS. PG&E and the United States executed a Remedial Design/Remedial Action Consent Decree (CD), on behalf of the DOI, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 2012, which was approved by the U.S. District Court for the Central District of California in November 2013 (DOI, 2013). Paragraph 32 and Appendix C (Section 5) of the CD requires PG&E to submit to DOI electronic progress reports during construction of the remedial action and on a quarterly basis after the selected remedy has been implemented and demonstrated to be operating as intended.

The California Department of Toxic Substances Control (DTSC) is the lead state agency overseeing corrective actions at the TCS. Remedial activities are being performed in conformance with the requirements of the Resource Conservation and Recovery Act (RCRA) Corrective Action pursuant to a Corrective Action Consent Agreement (CACA) entered into by PG&E and the DTSC in February 1996 (DTSC, 1996). Attachment 6, Part E, Section 9a and Attachment 7 of the CACA require PG&E to provide certain information in monthly progress reports during construction of the corrective action.

In compliance with the above CACA and CD requirements, PG&E proposed a template for the monthly progress reports in Exhibit 2.6-2 of the Construction/Remedial Action Work Plan (C/RAWP) (CH2M HILL, Inc. [CH2M], 2015b). The C/RAWP was approved by DOI on April 3, 2018 (DOI, 2018) and DTSC on April 24, 2018 (DTSC, 2018a).

This is the eighth of the monthly progress reports that will be submitted to DOI and DOI for the duration of the remedy construction and startup. This monthly progress report documents activities during May 2019, and follows the content and format described in Exhibit 2.6-2 of the approved C/RAWP. The report is organized as follows:

- **Section 2.1** describes completed construction activities; data collected, generated or received; nature and volume of waste generated; waste handling/disposal; issues encountered; actions taken to rectify problems/issues; personnel changes; and Work Variance Requests (WVRs; i.e., material deviations from the design documents, the C/RAWP, or other approved work plans), if any, as well as agencies' actions on those requests, and potential schedule impacts.
- **Section 2.2** summarizes contacts with representatives of the press, local community, or public interest groups during the reporting period, other activities provided to assist DTSC and/or DOI in support of the Community Outreach Plan (DTSC, 2019) and/or Community Involvement Plan (DOI, 2012), respectively, and anticipated near-term (approximately next six weeks) activities in support of the Community Outreach and Community Involvement Plans.
- **Section 2.3** describes the planned activities for the next six weeks (construction activities, sampling and monitoring events, etc.).
- **Section 2.4** provides information relating to the construction schedule progress, sequencing of activities, information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule, and a description of efforts made to mitigate those delays or anticipated delays, if any.
- **Section 3** lists the references cited in this report.

Please note that since activities conducted to comply with the project's Applicable or Relevant and Appropriate Requirement (ARARs) and the Subsequent Environmental Impact Report (SEIR; DTSC, 2018b) mitigation measures are currently reported in separate compliance reports, the same information is not repeated in the monthly reports.

2. Monthly Update

2.1 Description of Activities and Work Completed

2.1.1 Work Completed

Highlights of key activities related to the construction of the groundwater remedy completed during May 2019 include the following (in chronological order):

- On July 13, 2018, PG&E sent via email the first weekly six-week look-ahead schedule for the remedy construction field work. The weekly emails provide highlights of field activities in the previous week, field activities scheduled for the next week, and planned activities for the next six weeks. Recipients of the weekly emails are DOI, DTSC, the U.S. Fish and Wildlife Service (USFWS), Tribes, and the Technical Review Committee (TRC). PG&E continues to send these weekly emails to date. As of May 31, 2019, a total of 46 six-week look-ahead schedule emails have been sent. **Of those, five six-week look-ahead schedule emails were sent in May 2019 (on May 5, 12, 19, 26, and 30, 2019)**.
- On August 10, 2018, PG&E issued the first Environmental Release to Construct (ERTC) to contractors. As of May 31, 2019, a total of 45 ERTCs were issued for mobilization and construction activities (see Table 2-1). **Of those, two ERTCs were issued in May 2019.**
- Starting on October 4, 2018, PG&E has published a daily construction activities list and discussed the list at the morning tailboards with Tribes and agency representatives. This daily list is intended to inform and facilitate observation by Tribes and agency representatives on site on that day. PG&E continues to publish these daily lists and discuss the list at the daily morning tailboards to date. **In May 2019, a total of 25 daily construction activities lists were published and discussed at the morning tailboards.**
- In May 2019, PG&E completed the following construction activities (see Figures 2-1 and 2-2 for locations of key areas and wells, as well as select photos in **Attachment A**):
  - **Non-Well Construction Activities:**
    - a) Completed hydrostatic testing of most pipes in Pipeline C Segments C3, C4, C5 in the floodplain.
    - b) Potholed along remedy pipeline alignments inside TCS (in AOC 4) and near the Transwestern Bench (in AOC 11) to pre-characterize soil for purposes of pipeline installation.
  - **Pilot Boring/Well Installation Activities (Rotosonic drilling):**
    - a) Completed drilling pilot borehole at RB-3. Backfilled with sand.
    - b) Completed installation and development at MW-U.
    - c) Completed grading and placement of mats for drill rig access to RB-2 location.
  - **Remedy Well Installation Activities (Dual Rotary drilling):**
    - a) Completed remedy well installation at IRZ-25.
    - b) Completed development at IRZ-20.
    - c) See **Attachment B** for available information such as boring logs and water analytical results.
  - **Baseline/Opportunistic Soil Sampling Activities:**
    - Pursuant to the Baseline Soil Sampling and Analysis Plan (Appendix A of the Soil Management Plan [which is Appendix L of the C/RAWP]), one soil sample was collected at approximately 1 foot below ground surface (bgs) at MW-R (sampled on May 10, 2019).
    - See **Attachment C** for information about soil sampling locations and soil analytical results that are available at this time.

– **Perimeter Air Sampling Activities:**

a) Dust monitoring/observation was conducted through May 31, 2019 at the perimeter of select work areas.

b) Perimeter air sampling for hexavalent chromium is performed at the perimeter of the work areas (outside of the exclusion zone) that are inside Areas of Concern (AOCs) within the construction footprint where hexavalent chromium concentrations in soil have been historically reported. In May 2019, three air sampling events occurred during potholing activities to pre-characterize soil along remedy pipeline alignments in TCS (AOC 4) on May 14 and May 16, 2019, and near the Transwestern Bench (AOC 11) on May 15, 2019.

c) See **Attachment D** for information about previous air sampling locations and air analytical results.

– **Noise Monitoring Activities:**

a) Noise monitoring is conducted at pre-approved locations closest to the construction activities. Through May 31, 2019, noise monitoring was conducted at the following pre-approved locations:

- Location west of the mobile home park at Moabi Regional Park,
- Location Maze B Combined Area 1/2,
- Location Maze C Area 1,

b) See **Attachment E** for information about pre-approved noise monitoring locations and a summary of noise monitoring data available to date.

2.1.2 Work Already Underway and During Implementation

As of May 31, 2019, PG&E has started and will continue to perform the following activities:

- Continue to install concrete skirts at pipeline C3-C5 cleanouts and valve boxes.
- Continue to install the aggregate base access road in the floodplain.
- Started well installation at IRZ-21.
- Continue well installation at MW-M, MW-O, and MW-R.
- Complete site preparation for well installation at MW-C.
- Complete the upgrade of the Brine Tanks containment at MW-20 Bench.
- Continue to conduct noise and dust monitoring and inspection of Stormwater Pollution Prevention Plan (SWPPP) Best Management Practices (BMPs).
- Continue to track and manage waste generated.
- Continue to manage displaced soil per the approved Soil Management Plan (Appendix L of the C/RAWP).

2.1.3 Freshwater Usage, Waste Generation and Management

As of May 31, 2019, the volumes of freshwater used for remedy construction and waste streams generated from remedy construction (starting on October 2, 2018) are as follows:

<u>Freshwater Usage and Wastewater Management</u>

- Approximately 1,545,200 gallons (4.75 acre-feet) of freshwater was used, of which an approximate 3 percent was for pilot boring/well installation and general construction, 2 percent for hydrostatic testing of pipeline, and 95 percent was for fugitive dust suppression.

- Approximately 31,600 gallons of hydrostatic testing water was discharged to land. The discharge complies with the substantive requirements of State Water Resources Control Board (SWRCB) Water Quality Order 2003-0003-DWQ.
- Approximately 79,627 gallons of wastewater generated from drilling operations were discharged to Compressor Station evaporation pond #4. The discharge complies with the Waste Discharge Requirements (WDRs) of the California Regional Water Quality Control Board (CRWQCB), Colorado River Basin Region, Order No. R7-2018-0022.

  At each sonic drilling location, the wastewater is initially stored in a holding tank in the primary work zone, and is transferred from the primary work zone, as needed, to 20,000-gallon frac tanks located at the MW-20 Bench. Each transfer load is tracked. At each dual rotary drilling location, freshwater and wastewater are conveyed between the frac tanks and the drilling location via pipes. Once a frac tank is full, its contents will be characterized and managed in accordance with the approved Waste Management Plan (Appendix R of the C/RAWP).

  – One wastewater frac tank was sampled on April 25, 2019. Analytical results indicated that the wastewater is of acceptable quality for disposal at the Compressor Station evaporation pond #4. Approximately 2,115 gallons (one load) and 15,411 gallons (6 loads) of wastewater were discharged to pond #4 on May 1 and 2, 2019, respectively.
  – One wastewater frac tank was sampled on May 8, 2019. Analytical results indicated that the wastewater is of acceptable quality for disposal at the Compressor Station evaporation pond #4. Approximately 12,000 gallons (4 loads) and 1,624 gallons (one load) of wastewater was discharged to pond #4 on May 15 and May 30, 2019, respectively.
  – One wastewater frac tank was sampled on May 17, 2019. Additional wastewater was later added to the tank; therefore, the tank was sampled again on May 31, 2019. Analytical results are pending.

Displaced Materials and Soils

- Approximately 192.3 cubic yards of drill cuttings were generated from well drilling and geotechnical investigation. Of those, approximately 1.3 cubic yards are clay from Pipeline F geotechnical investigation. Drill cuttings are typically stored in roll-off bins with closed tops. Samples are collected from the bins for characterization and analyzed in accordance with the Soil Management Plan. Based on analytical results obtained to date, soil that has been classified as clean is stockpiled at the SPY for reuse onsite.
  - The clay collected from the Pipeline F geotechnical investigation is stockpiled at the SPY, separate from the other clean soil, in accordance with the revised clay handling protocol in Addendum to the Soil Management Plan (dated May 28, 2019).
- Approximately 20 cubic yards of displaced soil was generated from the potholing activities along remedy pipeline alignments. Samples were collected for characterization. Analytical results are pending.
- Approximately 100 cubic yards of displaced soil was generated from excavation for the brine tanks containment upgrade at the MW-20 Bench. Samples were collected for characterization and analyzed in accordance with the Soil Management Plan. This soil is currently stockpiled on a plastic liner at the SPY. A decision on the final disposition of this soil is forthcoming.
- Approximately 20 cubic yards of displaced soil was generated from potholing activities to a) daylight the Frontier telecom line along Pipeline C on NTH and b) pre-characterize soil in preparation for construction activities at the MW-20 Bench. Samples were collected for characterization and analyzed in accordance with the Soil Management Plan. This soil is currently stored in bins at the SPY. A decision on the final disposition of this soil is forthcoming.

General Construction Waste, Sanitary Waste, and Recyclables

- In May 2019, approximately 30 cubic yards of general construction waste, 18 cubic yards of recyclables, and 8.5 tons of construction debris (e.g., concrete from wash outs, deteriorated wattles,

plastic, and general trash) were generated and transported to Republic Services in Lake Havasu City for disposal and management.

- Sanitary waste from construction trailers/portable toilets is hauled offsite as needed.

2.1.4 Worker Training and Education

- PG&E continues to provide the mandatory Site Health and Safety Training for its employees and contractors on a daily basis. As of May 31, 2019, a total of 81 health and safety training sessions were held and 303 employees and contractors received the training. **Of those, in May 2019, eight sessions were conducted and 18 employees/contractors were trained.** After the training, the attendees signed the training roster.
- PG&E continues to provide the mandatory Worker Environmental Awareness Training (WEAT) to its employees and contractors that will be involved in the remedy construction project. The training is offered regularly on Mondays and Thursdays, and more frequently as needed. As of May 31, 2019, a total of 83 WEAT sessions were conducted and 348 employees and contractors received the training. **Of those, in May 2019, 9 sessions were conducted (on 5/9 (twice), 5/13, 5/16, 5/20, 5/22, 5/23, 5/28, and 5/30) and 18 employees/contractors were trained**. Educational brochures are made available to attendees of the training; they are designed to reinforce the key topics and highlight the take-aways discussed during the classroom training. After the training, the attendees signed the training roster.
- PG&E's onsite biologist also trained Field Contact Representatives (FCRs), who will be responsible for compliance with biological avoidance and mitigation measures. As of May 31, 2019, a total of 10 FCR training sessions were conducted and 54 employees and contractors received the training. **No FCR training was conducted in May 2019.**
- Training records are kept electronically and at the temporary construction trailers at the SPY. The records are available upon request.

2.1.5 Status of Work Variance Requests (WVRs)

PG&E submitted two requests for work variance (WVRs #5 [Remedy Produced Water System Phase 1] and #6 [Pipeline F Realignment]) in May 2019. See Table 2-2 for information regarding activities related to previously proposed WVRs (i.e., material deviations from the design documents, the C/RAWP, or other approved work plans), and agencies' actions on those requests.

2.1.6 Use of Future Activity Allowance

There was no proposed use of Future Activity Allowance (FAA) to date.

2.1.7 Issues Encountered and Actions Taken to Rectify Issues/Problems

- On May 30, 2019, an active bird nest was detected in the exhaust pipe of the support rig at MW-M location. The migratory bird species was identified as phainopepla. Drilling activities were stopped until June 3, 2019, when the nest was determined by PG&E to be abandoned. Kevin Russell, USFWS biologist, was first notified of the detection on May 30 and later, of the nest abandonment on June 3. PG&E continues to correspond with the agencies on the measures taken to minimize disturbance to the nest after detection and potential measures to prevent bird nests in pipes, including rig exhaust pipes, from reoccurrence.
- PG&E continues to work with Frontier to resolve the conflict between their telecom line and Pipeline C segments C13, C15, and C16, in the shoulder of NTH.
- PG&E continues to work with Kinder Morgan to resolve the conflict between their gas pipeline and Pipeline C segment C17, north of the Transwestern Bench.
- PG&E is working with potential subcontractors on the details of an installation plan for the jack-and-bore under NTH.

- PG&E is evaluating options to dewater during installation of Pipeline C8 in the floodplain, south of BNSF bridge.
- On May 29, 2019, a biological monitor noticed that one of the frac tanks on the MW-20 Bench (Tank #1) was leaking from the tank valve. This tank contained well drilling wastewater. It was noticed that water had also leaked from Tank #1 onto its containment pad and flowed over the partially collapsed containment pad berm, due to an HDPE pipeline resting on top of the berm. Approximately 200 gallons of freshwater/aquifer water mixture, containing 8.1 ppb of Cr6+ and low levels of TPH-diesel and motor oil, was released into the secondary containment and onto the ground. The water in the secondary containment was pumped into other frac tanks on the MW-20 Bench. PG&E notified DTSC and DOI representatives onsite. At the agencies' direction, the wet soil resulting from the release will be left in place and PG&E will conduct soil verification sampling after construction activities at the MW-20 bench is complete.
    - **Root cause** – The valve on Tank #1 began to leak overnight because there was not a hose or cap on the valve. The containment leaked because there was pipe resting on top of the berm collapsing part of the containment.
    - **Corrective action to prevent reoccurrence** – During the 5/29/19 and 6/1/19 morning drilling meetings, procedures that include sandbagging the berms under pipes crossing containment walls and using leak prevention redundancy were discussed, including a closed valve and a plug, cap or blind flange.

      Administrative Control: Clean Harbors notified all sub-contractors that at no time is anyone to remove, adjust or tamper with the piping and hose manifolds on the waste water frac tanks without notifying Clean Harbors management first.

      Engineering Control: Safety backups such as camlock plugs need to be chained or secured to individual lines once hoses or manifolds are removed. Make sure nothing is breaching the walls of the containment (hose, pipe, or other equipment) without proper engineering controls (sandbag, pipe rack, or equivalent equipment). Regular inspections of the secondary containment will be made to make sure that the containment is intact and not breached or compromised in any way. The secondary containment has been fixed. Pipe rack is on order for better housekeeping.
- On May 31, 2019, a PIVOX equipment operator was operating United Rentals backhoe, and the spotter noticed a damaged hydraulic hose leaking from the right outrigger. The operator immediately shut down machine, utilized a spill kit and visqueen to contain and clean-up leak. The supervisor was notified and reported the damaged hydraulic hose. Although most of the fluid leaked onto the machine, approximately 12 ounces hit the ground/sand. All appropriate notifications were made via telephone and area was cleaned up with absorbent pads. Approximately 0.4 cubic feet of sand was put in a 5-gallon waste bucket, properly labeled and stored in proper staging soils area.
    - **Root cause** – A heavy equipment safety inspection was completed prior to use of equipment, no defects found. The equipment operator completed all required steps in the event process. All proper on-site notifications were made for project documentation. All collected spill material was properly containerized, labeled and taken to IM3 for off-site disposal. Equipment was taken out of service and staged in a safe area for repair on visqueen containment.
    - **Corrective action to prevent reoccurrence** – Equipment was taken out of service and proper repairs were made by the end of the day and returned to service. Upon use of equipment on June 3, 2019, field crew notice minor residual drips on visqueen over the weekend. Suspect fluid assumed to be from minor fluid on frame of unit. Fluid was wiped off; a visual inspection of the machine was completed with it running before putting into operation.

2.1.8 Key Personnel Changes

There was no change to key PG&E project personnel in May 2019.

2.2 Communication with the Public

PG&E does not have any key communications with the public in May 2019:

2.3 Planned Activities for Next Six Weeks

The planned activities for next six weeks (June 11 through July 18, 2019) include the following:

- Well installation activities:
  - Complete installation of wells MW-C, MW-D, MW-O, MW-R, IRZ-21, IRZ-23, and RB-5.
  - Site preparation for MW-X did not occur as forecast in the April 2019 Monthly Progress Report but anticipate to start within the next six weeks.
  - Start site preparation and drilling well MW-Y'.
  - Complete drilling of pilot borings at RB-2 and IRZ-37.
  - Complete development at MW-M, MW-R, IRZ-21, and IRZ-25.
- Non-well construction activities:
  - Complete surface installation of pull boxes, cleanouts, valve boxes, and leak detection at Pipeline C segments C3, C4, and C5.
  - Complete CHQ fence installation.
  - Complete installation of access road in the floodplain.
  - Start installation of Pipeline C segments C6, C8, and C17.
  - Complete potholing along Pipeline B.
  - Continue to conduct noise and dust monitoring and inspection of SWPPP BMPs.
  - Continue to log and manage waste generated.
  - Continue to manage displaced soil per the approved Soil Management Plan.

Attachment F contains the six-week look-ahead schedule available at this time. Any adjustments to the schedule will occur as needed via the weekly emails (sent at the end of each week) and/or the daily list of construction activities (published daily and discussed with agency and Tribal representatives on site on that day).

2.4 Construction Schedule Review

Phase 1 of the groundwater remedy construction started on October 2, 2018. Table 2-3 presents a summary of the percent completeness for key construction activities as of May 31, 2019. PG&E continues to evaluate and optimize the construction schedule.

2.5 Available Sitewide Groundwater Monitoring Data (DTSC Condition of Approval xi)

Pursuant to Condition of Approval # xi in DTSC's approval letter dated August 24, 2018 (DTSC, 2018a), PG&E is required to report data from samples collected as part of the sitewide groundwater monitoring program within 60 days of sample collection. In compliance with this requirement, PG&E submitted validated data to DTSC via monthly emails. For ease of recordkeeping and to minimize the number of ad-hoc compliance reports/emails, PG&E has included validated data in each monthly progress report starting with the November 2018 report (see **Attachment G**).

3. References

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Tables

Table 2-1 Summary of Environmental Release-To-Constructions (ERTCs) Issued to Contractors

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup

PG&E Topock Compressor Station, Needles, California

ERTC No.	Brief Description of Covered Areas and Scope of Authorized Activities	Issue Date
Non-Well ERTCs		
1	Initial mobilization activities at the Construction Headquarters (CHQ), Soil Processing Yard (SPY), and three staging areas (#9 Parking area off I-40, #18 MW-20 Bench, and #23 Transwestern Bench). Scope included installation of temporary construction trailers, portable generators, SWPPP BMPs, construction signages, and temporary construction fencing, as well as equipment staging and truck inspections.	August 10, 2018
Addendum 1 to ERTC #1	Scope included setup of wastewater and freshwater storage tanks at MW-20 Bench, improvement of the access road at the CHQ, installation of perimeter fence at the SPY, and grading at SPY.	September 21, 2018
Addendum 2 to ERTC #1	Scope included grading for drill rig setup at IRZ-20.	October 4, 2018
Addendum 3 to ERTC #1	Scope included geotechnical investigation in the footprint of the future Carbon Amendment building at the MW-20 Bench.	October 9, 2018
Addendum 4 to ERTC #1	Scope included the installation of a temporary handrail along the walkway from the MW-20 Bench to the floodplain.	December 28, 2018
2	Scope included the installation of the temporary construction water system and construction water tanks at Area #25 Route 66 Welcome Sign.	September 28, 2018
3	Scope included the installation of the Public Information Trailer, a fugitive dust sign, an information kiosk, and a construction delivery sign at the northwest corner of Park Moabi Road and National Trails Highway (NTH).	September 4, 2018
4	Scope included the installation of a truck containment pad at the TCS evaporation ponds and maintenance of the access road to the ponds.	September 24, 2018
6	Scope included the geotechnical investigation along Pipeline F alignment (on the Compressor Station entrance road).	October 3, 2018
7	Scope included the installation of traffic control along the southern end of NTH per the Traffic Control Plan.	September 17, 2018
9	Scope included the transplantation and planting of sensitive plants.	November 9, 2018
10	Scope included potholing activities along approved pipeline alignments and in building footprints, that are also in AOCs/SMWUs. The purpose is to pre-characterize soil in preparation for construction.	March 29, 2019
11	Scope included preparation of temporary staging areas, vegetation clearance, placement of stabilization mats, potholing in select locations, and installation of Pipeline C segments C1 through C6 in the floodplain.	January 3, 2019
11a	Scope included preparation of temporary staging areas, vegetation clearance, placement of stabilization mats, potholing in select locations, and installation of Pipeline C segments C7-C10, and C17 in the floodplain.	February 11, 2019
11b	Scope included installation of Pipelines B, F, and J.	May 31, 2019
12	Scope included non-intrusive site preparation work for the brine tanks containment upgrade on the MW-20 Bench (per Work Variance Request #1, see Table 2-2). A forthcoming addendum to this ERTC will be issued to include the actual upgrade activities.	January 10, 2019
12a	Scope included the actual brine tanks containment upgrade activities which include intrusive work on the MW-20 Bench (per Work Variance Request #1, see Table 2-2).	February 6, 2019
Well ERTCs		
5a	Scope included the site setup, drilling, testing, and demobilization at MW-L.	September 27, 2018
5b	Scope included the placement of soil stabilization mats in the floodplain, setup of a temporary staging area near the north end of the access route in the floodplain, rig setup, installation of snow fence to protect plants, drilling, testing, and demobilization at IRZ-15.	October 12, 2018
5c	Scope included the site setup, drilling, testing, and demobilization at IRZ-20 on the MW-20 Bench.	October 15, 2018

Table 2-1 Summary of Environmental Release-To-Constructions (ERTCs) Issued to Contractors

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup

PG&E Topock Compressor Station, Needles, California

ERTC No.	Brief Description of Covered Areas and Scope of Authorized Activities	Issue Date
5d	Scope included the site setup, drilling, testing, and demobilization at MW-E on the MW-20 Bench.	October 29, 2018
5e	Scope included the site setup, drilling, testing, and demobilization at MW-N in the upland.	November 15, 2018
5f	Scope included the site setup, drilling, testing, and demobilization at IRZ-13 in the floodplain.	November 7, 2018
5g	Scope included the site setup, drilling, testing, and demobilization at IRZ-23 on the MW-20 Bench.	November 8, 2018
5h	Scope included the site setup, drilling, testing, and demobilization at MW-M in the upland.	January 15, 2019
5i	Scope included the site setup, drilling, testing, and demobilization at IRZ-9 in the floodplain.	November 28, 2018
5j	Scope included the site setup, drilling, testing, and demobilization at IRZ-25 on the MW-20 Bench.	December 3, 2018
5k	Scope included the site setup, drilling, testing, and demobilization at IRZ-21 on the MW-20 Bench.	December 9, 2018
5l	Scope included the site setup, drilling, testing, and demobilization at MW-B in the floodplain.	December 10, 2018
Addendum to ERTC #5l	Scope included the setup of an additional temporary equipment and material staging area in the floodplain.	December 13, 2018
5m	Scope included the site setup, drilling, testing, and demobilization at MW-F along NTH.	December 17, 2018
5n	Scope included the site setup, drilling, testing, and demobilization at IRZ-11 in the floodplain.	December 17, 2018
5o	Scope included the site setup, drilling, testing, and demobilization at MW-X and MW-Y' in Arizona.	April 23, 2019
5p	Scope included the site setup, drilling, testing, and demobilization at MW-G along NTH.	January 14, 2019
5q	Scope included the site setup, drilling, testing, and demobilization at IRZ-16 and IRZ-17 in the floodplain.	February 14, 2019
5r	Scope included the site setup, drilling, testing, and demobilization at IRZ-27 and IRZ-29 along NTH. Also included in the scope are potholing activities along Pipeline C Segments C13, C15, and C16 and on the MW-20 Bench.	March 9, 2019
Addendum #1 to ERTC #5r	Scope included the potholing to locate Transwestern Gas Pipeline within NTH (in support of Pipeline C installation).	April 24, 2019
5s	Scope included the site setup, drilling, testing, and demobilization at IRZ-39 in the low area, north of the Transwestern Bench.	March 12, 2019
5t	Scope included the site setup, drilling, testing, and demobilization at IRZ-27 along NTH.	March 19, 2019
5u	Scope included the site setup, drilling, testing, and demobilization at MW-U in I-40 median.	March 22, 2019
5v	Scope included the site setup, drilling, testing, and demobilization at MW-10D in Bat Cave Wash.	March 27, 2019
5w	Scope included the site setup, drilling, testing, and demobilization at MW-W in the floodplain.	March 22, 2019
5x	Scope included the site setup, drilling, testing, and demobilization at RB-1 through 5 wells and MW-O in the floodplain.	March 30, 2019
5y	Scope included the site setup, drilling, testing, and demobilization at MW-S on the access road to Bat Cave Wash.	April 12, 2019
5z	Scope included the site setup, drilling, testing, and demobilization at MW-R in the Upland.	May 8, 2019

Note:
ERTC 8 (Wastewater Management) is under development.

Table 2-2 Summary of Work Variance Requests (WVRs)

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

WVR No.	Brief Description of Work Variance Request	Approval Dates
1	This WVR addressed PG&E's proposed modification to the brine tanks containment for use by the remedy, specifically: • **Upgrade the existing lined containment to concrete** - The original synthetic liner material has degraded from exposure to UV light, heat, and abrasion and must be replaced. PG&E proposed to replace the synthetic-lined containment (including K-rails) with a concrete containment to support the groundwater remedy. The concrete color will be desert tan, and information on this proposed concrete color will be submitted to the agencies for review. The proposed concrete material will be similar to the material of the truck lane in the final remedy design (see Appendix E of the Final Basis of Design Report (CH2M, 2015a),* Section 033 00, Cast-In-Place Concrete). • **Shorten the length of the containment** - This containment will have the same height as the existing containment, but with a slightly smaller footprint (the length is 5 feet shorter). This smaller footprint still meets the required volume for a secondary containment and allows for more space for remedy construction at the tight MW-20 bench.	DOI approved WVR #1 on June 22, 2018 DTSC approved WVR #1 on July 5, 2018
2	PG&E proposed to relocate the tie-in point for remedy construction water to an aboveground location inside TCS and below the TCS Water Storage Tanks. This is to eliminate the risk of damaging the existing pressurized 6-inch water line and to avoid any interference with PG&E Gas Operations control of the Station's water supply. The WVR addressed this relocation, specifically: • **Relocate the construction water tie-in point to an aboveground location below the TCS Water Storage Tanks, inside TCS** – The final design calls for the temporary construction water line to hot-tap into the existing 6-inch steel water line just as the line turns southwest to continue to TCS. PG&E proposed to move the tie-in point to an aboveground valve manifold, located below the TCS Water Storage Tanks in the boneyard area. • **Extend the temporary construction water line to the new tie-in point, along Pipeline 300A access road** – The planned 4-inch high-density polyethylene (HDPE) temporary construction water line will be extended, following the route of the Pipeline 300A access road, to the new tie-in point inside TCS. This pipeline extension is approximately 1,950 feet and is also made of 4-inch HDPE. The pipe will be laid on ground surface and to the south of the 6-inch water line where possible. At the crossing with the SoCal Gas pipeline access road, the pipeline will be at grade with fill to allow for vehicle crossing.	DOI/DTSC approved WVR #2 on August 29, 2018
3	PG&E proposed changes within the CHQ fence line to avoid/minimize the overall amount of soil disturbance during construction, reduce the number of truck trips to haul wastewater, and allow for additional working space within the yard. There are no proposed changes to the CHQ footprint nor its fence line. The specifics are described below: • **Relocate the decontamination pad from the western fence to the northern fence (near the western corner)**. Based on recent survey data collected during construction, the difference in ground elevation between northern and southern end of the pad is about 4 feet. Moving the pad to the northern fence would eliminate the difference in ground elevation and reduce the amount of soil disturbance by at least 80 cubic yards. • **Bring the remedy-produced wastewater tank from belowground to aboveground, increase the tank volume from 1,000 to 2,500 gallons, and place the aboveground, double-walled tank adjacent to the decontamination pad.** The change from belowground to aboveground reduces the amount of soil disturbance by at least 50 cubic yards. The change to a bigger tank will reduce the amount of truck trips needed to haul wastewater. The placement of the tank adjacent to the decontamination pad allows for the pad to function as a secondary containment for the haul truck during off-loading of the wastewater. • **Defer construction of the underground sewage tanks.** Deferral of the underground tanks reduces the overall amount of soil disturbance by at least 800 cubic yards. All sanitary wastes will be managed in aboveground sewage tanks (similar to the ones currently used for the SPY trailers) or portable toilets. • **Swap the location of the construction trailers and the sunshade and change the configuration of the sunshade from a rectangle to a square.** This change will allow for more working space within the CHQ. All functions that would occur in the Workshop/Sampling Processing building will be conducted in the construction trailers.	DOI/DTSC approved WVR #3 on January 4, 2019
4	PG&E proposed to revise a segment of Pipeline C near the I-40 bridge, to meet the permit requirement in Caltrans Encroachment Permit No. 08-18-6-MW-0533. The revision involves relocating a small segment of Pipeline C to within National Trails Highway to meet a minimum distance of 10 feet from current and future I-40 bridge footings. The treatment measure specified	DOI/DTSC approved WVR #4 on May 14, 2019

Table 2-2 Summary of Work Variance Requests (WVRs)

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

WVR No.	Brief Description of Work Variance Request	Approval Dates
	for Segment X of National Trails Highway in the Cultural and Historic Property Management Plan will be implemented during installation of this pipeline segment.	
5	PG&E proposed to phase the remedy produced water conditioning system within the approved footprint inside TCS.	Pending
6	In early October 2018, PG&E conducted a geotechnical investigation along the Pipeline F alignment on the entrance road to the Topock Compressor Station (TCS) and the adjacent hill side. Based on the geotechnical results, the construction contractor (PIVOX) indicated that soldier piles and lagging would be requried for temporary shoring. Over 40 soldier piles would be installed by drilling using a 330-sized excavator or larger. A 330-sized excavator has a general width of 11 feet, and counter weight clearance of approximately 4 feet. During operation, this rig would occupy a minimum 15 to 16 feet width of the TCS entrance road for about 12 days. The paved width of the road is between 22 to 24 feet in the area of shoring (per review of the location via Google Earth). Assuming a minimum clearance of 1 foot (which is still less than the recommended clearance) from any operating equipment, there will be approximately 5 to 8 feet of available lane width for access by TCS traffic. Large vehicles (tractor-trailers, delivery trucks, construction equipment) will likely not be able to pass by the active operation, and passenger vehicles may also not be able to pass the active operation in locations where the road narrows. Also, the excavator cannot be repositioned while soldier piles are being drilled. In sum, access to TCS will be severely restricted for about 12 days. This is not acceptable for Compressor Station operations. Therefore, PG&E proposed to realign Pipeline F (starting from segment F3) along the approved alignment of Pipelines B and J. Construction of Pipelines F, B, and J would occur in the same alignment and at the same time.	DOI and DTSC approved WVR #6 on May 21 and May 22, 2019, respectively.

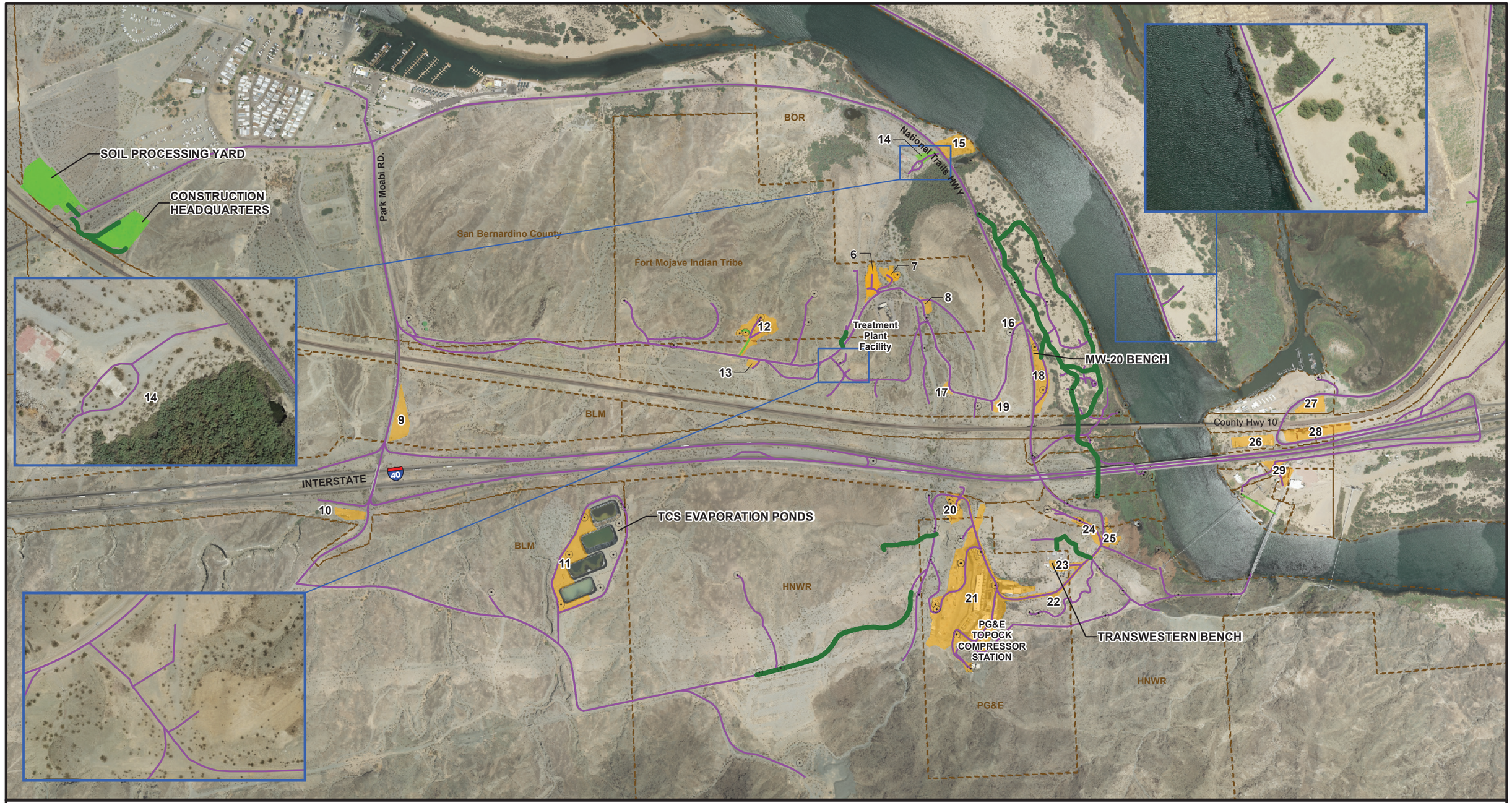
Note:
* CH2M HILL, Inc. (CH2M). 2015a. *Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. November 18.

Table 2-3 Summary of Percent Completeness of Key Construction Activities

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Activity	% Complete	Current Status of Construction Activities (as of May 31, 2019)
Project signage & Public Information Office	100%	Complete.
Staging Area 9 setup	100%	Complete.
Staging Area 23 setup	100%	Complete.
Staging Area 18 setup	100%	Complete.
Temporary construction offices at Soil Processing Yard	100%	Complete.
Soil Processing Yard setup for construction staging	100%	Complete.
National Trails Highway lane closure and traffic control installation	100%	Complete.
Temporary construction water line	100%	Complete.
TCS Ponds concrete containment pad	100%	Complete.
Construction Headquarters access road	100%	Complete.
MW-L	100%	Complete.
MW-N	100%	Complete.
MW-E	100%	Complete.
MW-W	100%	Complete.
MW-M	Not Available	Well construction complete. Surface completion and well development continues in June.
MW-F, MW-G, MW-10D	95%	Well construction complete. Surface completion in June.
MW-O, MW-R, MW-M	Not Available	In progress
MW-B	Not Available	Video survey complete in May.
RB-5, RB-4, RB-3, IRZ-9, 13, 15, 16, 17, 21, 23, 25, 27, and 39 pilot boring	100%	Complete.
IRZ-20 remedy well	Not Available	Well construction and development complete. Well testing in June.
Pipeline C Segments C3, C4, C5	Not Available	Pipeline and conduit installation complete. Hydrostatic testing complete. Installation of pull boxes, cleanouts, valve boxes, and leak detection underway.
Brine Tanks containment upgrade	Not Available	Completed excavation, backfill, compaction, and concrete pour.

Figures



LEGEND

- Existing Access Route (will continue to be used for remedial activities)
- Existing Route (to be used as is for access to remedial activities)
- Roads to be improved or constructed for groundwater remedy
- Soil Processing (Area #5) and Construction Headquarter (Area #4) for Remediation Project
- Staging Areas for Remediation Project

Notes:

1. Decontamination pads will be located in Area #4 (Construction Headquarters), Area #21 (Topock Compressor Station), and Area #23 (Transwestern Bench).
2. Areas #15, 16, 17, 19, and 20 will not be used as staging areas. Areas #16, 17, and 19 may be part of the primary work zones for remedy infrastructure along the access road.
3. Area #20 may be part of the primary work zone for installation of future provisional well IRL-6 (if determined to be needed in the future) and associated piping/concrete/vault.
4. Public roadways outside of the EIR project area and the APE can also be used for remedy implementation.

N

0 900
Feet

FIGURE 2.1-1
CONSTRUCTION SITE PLAN AND ACCESS ROUTES
GROUNDWATER REMEDY CONSTRUCTION/ PHASE 1
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

JACOBS

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LEGEND

- Property Boundaries

Existing Wells:

- Extraction Well
- Injection Well
- Monitoring Well
- Water Supply Well

Planned Wells:

- Extraction, National Trails Highway (NTH) In-situ Reactive Zone (IRZ)
- Extraction, Riverbank
- Injection, NTH IRZ
- Injection, Topock Compressor Station
- Remedy Monitoring Well
- Recirculation Well

Pipeline Corridor for Remedy

- Aboveground Pipe
- Underground Pipe/Conduit

Remedy Facilities

- Planned Transformer
- Future Provisional Transformer
- Proposed Remedy Structure

Note:

1. Note that in compliance with EIR mitigation measure CUL-1a-9, as well as PA and CHPMP mitigation measures, the pipeline along the dirt road west of National Trails Hwy is located in an existing, previously disturbed, access road. In addition, the location of the road and pipeline was field verified and does not create any direct physical impact or effect on the Topock Maze, as it is manifested archaeologically, in compliance with EIR mitigation measure CUL-1a-10, PA, and CHPMP mitigation measures.
2. All well and structure locations are approximate.

N

0 150 300 600

Feet

FIGURE 2-2
WELL AND PIPELINE LOCATIONS
GROUNDWATER REMEDY PHASE 1 CONSTRUCTION
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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Path: R:\ENBG\00_Proj\P\PGE\Topock\MapFiles\2018\CMS\Phase1Construction\Fig2-2_Well_Pipeline_Loc.mxd

Attachment A
Photographs

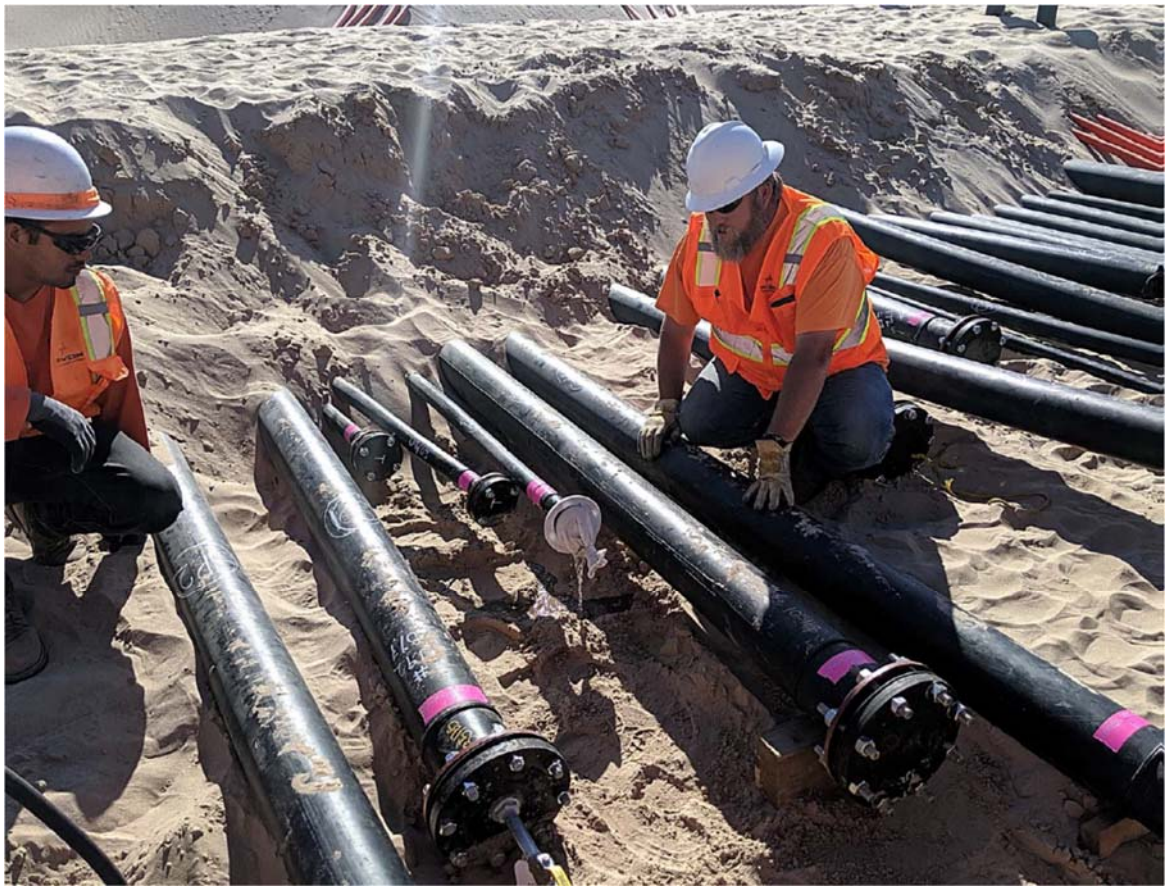
Placement of aggregate base along IRZ access road north of Pipeline C3

Delivery of aggregate base from SPY for IRZ access road installation north of Pipeline C3.

MW-M Well Installation.

MW-R Well Installation.

Filling and leak testing of HDPE pipelines at C5 pipeline end.



Freshwater used for pipe flushing discharged to ground, inside pipe trench, through a sock.

Freshwater used for hydrostatic testing discharged to ground, inside pipe trench, through a sock.

Attachment B
Available Boring Logs, Well Construction Logs, and Groundwater Sample Results from Well Drilling

Table B-1. Groundwater Sampling Results for May 2019

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location	Sample ID	Sample Date	Depth Interval (ft bgs)	Total Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)
MW-10D	MW-10D-041119	04/11/19	108 - 123	160	160
MW-10D	MW-10D-VAS-107-112	04/01/19	107 - 112	95	96
MW-10D	MW-10D-VAS-118-123	04/02/19	118 - 123	200	190
MW-B	MW-B-VAS-27-32	01/06/19	27 - 32	5.9 J	7.7J
MW-B	MW-B-VAS-47-52	01/09/19	47 - 52	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-67-72	01/09/19	67 - 72	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-102-107	01/10/19	102 - 107	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-142-147	01/15/19	142 - 147	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-182-187	02/13/19	182 - 187	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-207-212	02/14/19	207 - 212	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-247-252	02/17/19	247 - 252	11 J	< 0.83 U
MW-B	MW-B-VAS-264-269	02/18/19	264 - 269	< 0.13 U	< 0.33 U
MW-B	MW-B-VAS-287-292	02/20/19	287 - 292	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-317-322	02/21/19	317 - 322	< 0.13 U	< 0.17 U
MW-B	MW-B-VAS-339-344	02/27/19	339 - 344	< 0.13 U	< 0.33 U
MW-B	MW-B-VAS-352-357	02/28/19	352 - 357	0.603 J	< 0.33 U
MW-B	MW-B-117-033019	03/30/19	WD, 117	< 0.13 U	< 0.17 U
MW-B	MW-B-33-033119	03/31/19	WD, 33	3.7	2.3
MW-E	MW-E-VAS-52-57	11/05/18	52 - 57	7800	7000
MW-E	MW-E-VAS-82-87	11/06/18	82 - 87	190	200
MW-E	MW-E-VAS-112-117	11/06/18	112 - 117	3000	3100
MW-E	MW-E-VAS-137-142	11/07/18	137 - 142	7900	7300
MW-E	MW-E-70-121418	12/14/18	WD, 70	-	3000
MW-E	MW-E-142-121418	12/14/18	WD, 142	4500	4200
MW-F	MW-F-VAS-52-57	01/06/19	52 - 57	2700	2500
MW-F	MW-F-VAS-82-87	01/07/19	82 - 87	120	110
MW-F	MW-F-VAS-97-102	01/07/19	97 - 102	1900	1800
MW-F	MW-F-VAS-112-117	01/08/19	112 - 117	790	740
MW-F	MW-F-104-022719	02/27/19	WD, 104	1800	1700
MW-F	MW-F-60-022819	02/28/19	WD, 60	2300	2200
MW-G	MW-G-VAS-52-57	02/13/19	52 - 57	790	680
MW-G	MW-G-VAS-67-72	02/14/19	67 - 72	1000	920
MW-G	MW-G-VAS-77-82	02/15/19	77 - 82	710	600
MW-G	MW-G-82-030219	03/02/19	WD, 82	1500	1500
MW-G	MW-G-57-030219	03/02/19	WD, 57	510	560
MW-L	MW-L-VAS-76-81	10/06/18	76 - 81	34	31
MW-L	MW-L-VAS-106-111	10/09/18	106 - 111	0.697 J	0.84

Table B-1. Groundwater Sampling Results for May 2019

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location	Sample ID	Sample Date	Depth Interval (ft bgs)	Total Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)
MW-L	MW-L-VAS-141-146	10/10/18	141 - 146	< 0.13 U	< 0.033 U
MW-L	MW-L-VAS-181-186	10/20/18	181 - 186	3.8	3.3
MW-L	MW-L-VAS-218-223	10/21/18	218 - 223	68	66
MW-L	MW-L-VAS-261-266	10/22/18	261 - 266	0.284 J	< 0.17 U
MW-L	MW-L-180-032819	03/28/19	WD, 180	< 0.13 U	< 0.17 U
MW-L	MW-L-245-030319	03/03/19	WD, 245	14	15
MW-L	MW-L-90-032919	03/29/19	WD, 90	19	18
MW-L	MW-L-225-032919	03/29/19	WD, 225	410	380
MW-M	MW-M-VAS-52-57	03/28/19	52 - 57	29	28
MW-M	MW-M-VAS-72-77	03/29/19	72 - 77	< 0.13 U	< 0.033 U
MW-M	MW-M-VAS-107-112	03/30/19	107 - 112	< 0.13 U	< 0.033 U
MW-M	MW-M-VAS-147-152	03/31/19	147 - 152	Data not yet available	< 0.17 U
MW-M	MW-M-VAS-172-177	04/02/19	172 - 177	< 0.13 U	< 0.033 U
MW-M	MW-M-VAS-190-195	04/10/19	190 - 195	< 0.13 U	< 0.17 U
MW-N	MW-N-VAS-121-126	02/14/19	121 - 126	0.699 J	0.51
MW-N	MW-N-VAS-142-147	02/16/19	142 - 147	< 0.13 U	< 0.033 U
MW-N	MW-N-VAS-173-178	02/18/19	173 - 178	< 0.13 U	< 0.033 U
MW-N	MW-N-VAS-210-215	02/21/19	210 - 215	320	290
MW-N	MW-N-VAS-228-233	02/26/19	228 - 233	< 0.13 U	< 0.17 U
MW-N	MW-N-217-040219	04/02/19	WD, 217	110	110
MW-N	MW-N-237-040119	04/01/19	WD, 237	1600	1500
MW-N	MW-N-129-040319	04/03/19	WD, 129	45	46
MW-O	MW-O-VAS-101-106	05/10/19	101 - 106	< 0.13 U	< 0.033 U
MW-O	MW-O-VAS-106-111	05/11/19	106 - 111	< 0.13 U	< 0.17 U
MW-O	MW-O-VAS-12.5-17.5	05/08/19	12 - 18	< 0.13 U	0.163 J
MW-O	MW-O-VAS-136-141	05/11/19	136 - 141	< 0.13 U	< 0.17 U
MW-O	MW-O-VAS-51-56	05/09/19	51 - 56	< 0.13 U	< 0.033 U
MW-O	MW-O-VAS-66-71	05/09/19	66 - 71	< 0.13 U	0.178 J
MW-R	MW-R-VAS-117-122	05/14/19	117 - 122	Data not yet available	5.8
MW-R	MW-R-VAS-151-156	05/15/19	151 - 156	Data not yet available	< 0.033 U
MW-R	MW-R-VAS-192-197	05/16/19	192 - 197	Data not yet available	< 0.033 U
MW-R	MW-R-VAS-227-232	05/17/19	227 - 232	Data not yet available	< 0.033 U
MW-R	MW-R-VAS-255-260	05/29/19	255 - 260	Data not yet available	< 0.17 U
MW-R	MW-R-VAS-269-274	05/30/19	269 - 274	Data not yet available	< 0.17 U
MW-R	MW-R-VAS-92-97	05/13/19	92 - 97	Data not yet available	45
MW-W	MW-W-VAS-7-12	03/27/19	7 - 12	0.266 J	< 0.17 U
MW-W	MW-W-VAS-22-27	03/28/19	22 - 27	< 0.13 U	< 0.33 U

Table B-1. Groundwater Sampling Results for May 2019

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location	Sample ID	Sample Date	Depth Interval (ft bgs)	Total Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)
MW-W	MW-W-31-040419	04/04/19	WD, 31	< 0.13 U	< 0.17 U
MW-U	MW-U-VAS-137-142	04/12/19	137 - 142	0.818 J	1.4
MW-U	MW-U-VAS-181-186	04/13/19	181 - 186	< 0.13 U	0.112 J
MW-U	MW-U-VAS-222-227	04/14/19	222 - 227	< 0.13 U	< 0.033 U
MW-U	MW-U-VAS-257-262	04/16/19	257 - 262	< 0.13 U	0.0896 J
MW-U	MW-U-VAS-287-292	04/17/19	287 - 292	< 0.13 U	< 0.033 U
MW-U	MW-U-VAS-317-322	04/24/19	317 - 322	< 0.13 U	< 0.17 U
MW-U	MW-U-183-050819	05/08/19	WD, 183	< 0.13 U	< 0.033 U
MW-U	MW-U-273-051019	05/10/19	WD, 273	< 0.13 U	< 0.033 U
IRZ-9	IRZ-9-VAS-27-32	12/03/18	27 -32	120	120
IRZ-9	IRZ-9-VAS-47-52	12/04/18	47 -52	< 0.13 U	< 0.033 U
IRZ-9	IRZ-9-VAS-62-67	12/04/18	62 -67	< 0.13 U	< 0.033 U
IRZ-9	IRZ-9-VAS-182-187	12/11/18	182 -187	< 0.13 U	< 0.17 U
IRZ-9	IRZ-9-VAS-207-212	12/13/18	207 -212	< 0.13 U	< 0.17 U
IRZ-9	IRZ-9-VAS-232-237	12/13/18	232 -237	0.811 J	< 0.17 U
IRZ-9	IRZ-9-VAS-264-269	12/15/18	264 -269	< 0.13 U	< 0.17 U
IRZ-9	IRZ-9-VAS-276-281	12/16/18	276 -281	< 0.13 U	< 0.17 U
IRZ-9	IRZ-9-VAS-292-297	12/18/18	292 -297	< 0.13 U	< 0.17 U
IRZ-13	IRZ-13-VAS-32-37	11/17/18	32 - 37	170	220
IRZ-13	IRZ-13-VAS-57-62	11/18/18	57 - 62	< 0.13 U	< 0.17 U
IRZ-13	IRZ-13-VAS-102-107	11/19/18	102 - 107	< 0.13 U	< 0.17 U
IRZ-13	IRZ-13-VAS-142-147	11/19/18	142 - 147	< 0.13 U	< 0.17 U
IRZ-13	IRZ-13-VAS-180-185	11/27/18	180 - 185	230	190
IRZ-13	IRZ-13-VAS-197-202	11/28/18	197 - 202	< 0.13	< 0.83
IRZ-13	IRZ-13-VAS-224-229	11/28/18	224 - 229	< 0.13	< 0.83
IRZ-13	IRZ-13-VAS-237-242	11/29/18	237 - 242	< 0.13 U	< 0.17 U
IRZ-15	IRZ-15-VAS-32-37	11/01/18	32 - 37	13	13
IRZ-15	IRZ-15-VAS-62-67	11/02/18	62 - 67	< 0.65 U	0.459 J
IRZ-15	IRZ-15-VAS-102-107	11/03/18	102 - 107	< 0.65 U	< 0.17 U
IRZ-15	IRZ-15-VAS-132-137	11/04/18	132 - 137	0.228 J	< 0.17 U
IRZ-15	IRZ-15-VAS-162-167	11/05/18	162 - 167	3400	3200
IRZ-15	IRZ-15-VAS-182-187	11/06/18	182 - 187	130	140
IRZ-15	IRZ-15-VAS-222-227	11/07/18	222 - 227	< 0.13 U	< 0.17 U
IRZ-16	IRZ-16-VAS-27-32	02/20/19	27 - 32	480	480
IRZ-16	IRZ-16-VAS-57-62	02/20/19	57 - 62	< 0.33 U	< 0.33 U
IRZ-16	IRZ-16-VAS-102-107	02/21/19	102 - 107	< 0.33 U	< 0.33 U
IRZ-16	IRZ-16-VAS-132-137	02/26/19	132 - 137	< 0.17 U	< 0.17 U

Table B-1. Groundwater Sampling Results for May 2019

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location	Sample ID	Sample Date	Depth Interval (ft bgs)	Total Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)
IRZ-16	IRZ-16-VAS-147-152	02/27/19	147 - 152	< 0.17 U	< 0.17 U
IRZ-16	IRZ-16-VAS-172-177	02/27/19	172 - 177	110	110
IRZ-16	IRZ-16-VAS-192-197	02/28/19	192 - 197	< 0.17 U	< 0.17 U
IRZ-17	IRZ-17-VAS-32-37	03/02/19	32 - 37	78	67
IRZ-17	IRZ-17-VAS-62-67	03/02/19	62 - 67	0.750 J	0.604 J
IRZ-17	IRZ-17-VAS-102-107	03/03/19	102 - 107	< 0.13 U	< 0.17 U
IRZ-17	IRZ-17-VAS-132-137	03/13/19	132 - 137	< 0.13 U	< 0.17 U
IRZ-17	IRZ-17-VAS-137-142	03/12/19	137 - 142	< 0.13 U	< 0.13 U
IRZ-17	IRZ-17-VAS-142-147	03/04/19	142 - 147	68	84
IRZ-17	IRZ-17-VAS-147-152	03/12/19	147 - 152	< 0.13 U	< 0.33 U
IRZ-17	IRZ-17-VAS-152-157	03/04/19	152 - 157	16	7.0
IRZ-17	IRZ-17-VAS-162-167	03/04/19	162 - 167	< 0.13 U	< 0.17 U
IRZ-17	IRZ-17-VAS-172-177	03/05/19	172 - 177	< 0.13 U	< 0.17 U
IRZ-20	IRZ-17-VAS-197-202	03/06/19	197 - 202	< 0.13 U	< 0.17 U
IRZ-20	IRZ-17-VAS-217-222	03/06/19	217 - 222	< 0.13 U	< 0.17 U
IRZ-20	IRZ-20-VAS-112-117	10/22/18	112 - 117	< 0.13 U	< 0.17 U
IRZ-20	IRZ-20-VAS-131-136	10/23/18	131 - 136	< 0.13 U	< 0.17 U
IRZ-20	IRZ-20-VAS-173-178	10/24/18	173 - 178	< 0.13 U	< 0.83 U
IRZ-21	IRZ-21-VAS-52-57	12/15/18	52 - 57	100	97
IRZ-21	IRZ-21-VAS-77-82	12/16/18	77 - 82	1.3	1.1
IRZ-21	IRZ-21-VAS-112-117	12/16/18	112 - 117	< 0.13 U	< 0.17 U
IRZ-21	IRZ-21-VAS-132-137	12/17/18	132 - 137	< 0.13 U	< 0.17 U
IRZ-21	IRZ-21-VAS-147-152	12/18/18	147 - 152	4000	3600
IRZ-23	IRZ-23-VAS-67-72	12/01/18	67 - 72	86	85
IRZ-23	IRZ-23-VAS-92-97	12/01/18	92 - 97	0.453 J	< 0.033 U
IRZ-23	IRZ-23-VAS-122-127	12/02/18	122 - 127	2100	2000
IRZ-23	IRZ-23-VAS-139-144	12/02/18	139 - 144	3400	3000
IRZ-25	IRZ-25-VAS-52-57	12/05/18	52 - 57	4300	3500
IRZ-25	IRZ-25-VAS-67-72	12/05/18	67 - 72	750	620
IRZ-25	IRZ-25-VAS-92-97	12/06/18	92 - 97	140	130
IRZ-25	IRZ-25-VAS-112-117	12/11/18	112 - 117	< 0.13 U	< 0.17 U
IRZ-25	IRZ-25-VAS-147-152	12/11/18	147 - 152	3800	3600
IRZ-25	IRZ-25-VAS-162-167	12/13/18	162 - 167	3000	3000
IRZ-27	IRZ-27-VAS-52-57	03/15/19	52 - 57	4500	4400
IRZ-27	IRZ-27-VAS-72-77	03/17/19	72 - 77	0.338 J	< 0.033 U
IRZ-27	IRZ-27-VAS-102-107	03/18/19	102 - 107	< 0.13 U	< 0.17 U
IRZ-27	IRZ-27-VAS-132-137	03/20/19	132 - 137	1200	1300

Table B-1. Groundwater Sampling Results for May 2019

May 2019 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location	Sample ID	Sample Date	Depth Interval (ft bgs)	Total Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)
IRZ-39	IRZ-39-VAS-27-32	03/30/19	27 - 32	31	29
RB-3	RB-3-VAS-15-20	04/26/19	15 - 20	< 0.13 U	< 0.033 U
RB-3	RB-3-VAS-50-55	04/27/19	50 - 55	< 0.13 U	0.100 J
RB-3	RB-3-VAS-80-85	04/27/19	80 - 85	< 0.13 U	0.132 J
RB-3	RB-3-VAS-120-125	04/28/19	120 - 125	< 0.13 U	< 0.17 U
RB-3	RB-3-VAS-150-155	04/29/19	150 - 155	0.257 J	< 0.17 U
RB-3	RB-3-VAS-180-185	04/29/19	180 - 185	< 0.13 U	< 0.033 U
RB-3	RB-3-VAS-205-210	04/30/19	205 - 210	< 0.13 U	< 0.17 U
RB-4	RB-4-VAS-15-20	04/12/19	15 - 20	< 0.13 U	0.0556 J
RB-4	RB-4-VAS-41-46	04/12/19	41 - 46	< 0.13 U	< 0.033 U
RB-4	RB-4-VAS-81-86	04/12/19	81 - 86	< 0.13 U	< 0.033 U
RB-4	RB-4-VAS-121-126	04/13/19	121 - 126	< 0.13 U	< 0.033 U
RB-4	RB-4-VAS-136-141	04/13/19	136 - 141	< 0.13 U	< 0.17 U
RB-4	RB-4-VAS-155-160	04/17/19	155 - 160	< 0.13 U	< 0.17 U
RB-5	RB-5-VAS-12-17	04/04/19	12 - 17	0.235 J	0.125 J
RB-5	RB-5-VAS-42-47	04/09/19	42 - 47	< 0.13 U	< 0.033 U
RB-5	RB-5-VAS-82-87	04/09/19	82 - 87	0.769 J	0.127 J

Notes:
µg/L = micrograms per liter
ft bgs = feet below ground surface
J = The analyte was positively identified; however, the associated numerical value is an estimated concentration only
U = The analyte was analyzed for but not detected at the analyte method detection limit indicated
VAS = vertical aquifer sampling
WD = sample from well development, depth noted is from bottom of screen

Attachment C
Soil Sampling Locations and Available Soil Analytical Results

(Soil Data Presented in Excel File)

LEGEND

- Soil Sample Location

0 100 200
Feet

N

Baseline and Opportunistic Soil Sampling Locations

May 2019 Monthly Progress Report
Groundwater Remedy Phase 1 Construction
PG&E Topock Compressor Station, Needles, California

JACOBS

Attachment D
Perimeter Air Sampling Analytical Results

Attachment D. Perimeter Air Sampling Analytical Results

In conformance with the approved *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California* (CH2M, 2015), air monitoring has been conducted during construction to evaluate the ongoing effectiveness of the dust control program, to guide modifications to field activities and engineering control measures, if necessary, and to document that construction activities do not result in the migration of soil contaminants beyond the work area boundaries.

Perimeter air monitoring has been performed if construction activities have the potential to generate visible dust. The air monitoring program consists of both real-time fugitive dust monitoring and perimeter air sampling for select soil contaminants. Locations to be monitored and sampled are as follows:

- Real-time fugitive dust monitoring is performed at the perimeter of the work areas (outside of the exclusion zone) that have the potential to generate visible dust, including the Construction Headquarters (CHQ) and the Soil Processing Yard (SPY).
- Perimeter air sampling for hexavalent chromium is performed at the perimeter of the work areas (outside of the exclusion zone) that are inside Areas of Concern (AOCs) within the construction footprint where hexavalent chromium concentrations in soil have been historically reported. Air sampling for hexavalent chromium in the SPY will be performed when soil from AOCs with reported concentrations of hexavalent chromium is actively being processed. Air sampling may also be performed at other work areas at the site based on hexavalent chromium concentrations reported from new soil data or based on field observations during construction activities.
- Air sampling for asbestos will be limited to work areas where Asbestos Containing Material (ACM) has been observed in prior field investigations, including two areas in AOC 12 and one area in AOC 4. Perimeter air monitoring may also be performed at other work areas at the site if ACM is discovered during construction activities.

Project-specific levels of concern (LOC) and action levels were developed as an indicator to determine whether additional dust control measures, as presented in the project's Dust Control Plan required by the Mojave Desert Air Quality Management District (MDAQMD), are necessary.

- The LOCs, which represent conservative concentrations of compounds that receptors outside the work area could be safely exposed to during construction, have been evaluated for all compounds that have been detected in soil samples collected at the site in the prior investigations. The LOCs were developed using standard U.S. Environmental Protection Agency (USEPA) and California Environmental Protection Agency risk assessment methodology, toxicology data, and exposure assumptions (USEPA, 2009, 2017; California Department of Toxic Substances Control [DTSC], 2018). Both cancer and noncancer health effects were considered. For each type of health effect, the LOC was back-calculated from an established target or from acceptable cancer risk or noncancer hazard where USEPA or DTSC toxicity values are available. The LOCs for cancer effects are based on a target excess cancer risk of one in a million (1×10^{-6}). The LOCs for noncancer effects are based on a target hazard quotient of 1. The LOCs were developed using these assumptions:
  - Receptors are present outside the perimeter of the work areas
  - Exposure via inhalation is 10 hours per day for a 10 days on /4 days off schedule
  - Duration of Phase 1 of the final groundwater remedy construction is 20 months
- The action level for fugitive dust monitoring is 100 micrograms per cubic meter ($\mu g/m^3$) for a net (downwind minus upwind) dust concentration. This action level is based on MDAQMD Rule 403, Part C. A 10-hour time-weighted average of readings collected throughout the work day will be used to document compliance with MDAQMD Rule 403.
- For analytes detected in soil, the following equation was used to calculate maximum allowable airborne particulate concentrations for receptor exposure outside the work area (based on the approach presented by Marlowe (1999):

$$AL = \frac{LOC\ x\ 1{,}000{,}000\ mg/kg}{CS}$$

Where:

AL = action level for airborne particulates (µg/m^3)

LOC = Project specific risk-based level of concern (µg/m^3)

CS = maximum detected concentration of compound in site soil (milligrams per kilogram [mg/kg])

Action levels were determined as follows:

- Soil data from prior investigations were gathered for the entire site.
- Sample locations within the maximum construction footprint were evaluated. Some sample locations were removed from evaluation as they were within the compressor station in locations where no construction activities will actually occur.
- The maximum reported soil concentration for each compound was determined and then used to calculate an airborne particulate action level.
- All compounds had allowable airborne particulate action levels greater than 100 µg/m^3 except for hexavalent chromium at a few locations.
- Lead does not have USEPA or DTSC toxicity values; however, an action level was calculated using the DTSC (2011) LeadSpread 8 model. This is based on the maximum reported soil concentration for lead of 1,400 mg/kg from samples collected within the construction footprint and a blood level of concern through inhalation of 1 microgram per deciliter. The resulting action level for lead is 548 µg/m^3.
- Therefore, keeping fugitive dust below the action level 100 µg/m^3 will result in airborne particulate concentrations of contaminants (other than hexavalent chromium) remaining below their respective LOCs.
- Fugitive dust monitoring will be used to evaluate airborne contaminants in dust for all compounds except for hexavalent chromium.

In May 2019, 165 real time dust observation/monitoring events were conducted at the perimeter of the work areas (outside of the exclusion zone). On May 15, 2019, there were two temporary exceedances of the action level for fugitive dust monitoring (100 µg/m3) during Pipeline C installation in the floodplain. In both instances, construction equipment drove on sand and generated visible dust.

In addition, three perimeter air sampling events for hexavalent chromium were conducted from May 14 to 16 during potholing activities for pre-characterization of soils along remedy pipeline alignments in TCS (in AOC 4) and near the Transwestern Bench (in AOC 11). One upwind and two downwind samples were collected during each sampling event. Analytical data will be reported in the next monthly progress reports.

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Marlowe, C. 1999. *Safety Now! Controlling Chemical Exposures at Hazardous Waste Sites with Real-Time Measurements*. Fairfax, Va.: American Industrial Hygiene Association Press.

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Attachment E
Noise Monitoring Results
(SEIR NOISE-2 Requirement)

Attachment E. Noise Monitoring Results

In conformance with the SEIR Mitigation Measure NOISE-2, noise monitoring has been conducted with ANSI S1.4 Type 1, precision sound level meters when construction activities are within the specified distance (e.g., 1,850 feet from sensitive receptors in California) at approved monitoring locations previously determined in coordination with the Tribes and land owners/managers (refer to Figures 1, 2 and 3). The goal of the noise monitoring is to identify if noise levels from project construction activities exceed applicable standards of the San Bernardino and Mohave County codes. Exceedance of standards would require coordination with the Tribes and land owners/managers to evaluate the potential constraints and locations for temporary engineered acoustical barriers. Consistent with the request of the Tribes, monitoring equipment is not left at the approved monitoring locations, rather it is mounted on a tripod for attended representative measurements and removed when the monitoring event is complete.

When a new construction activity is conducted or a previously monitored construction activity is conducted closer to a noise-sensitive area, monitoring is conducted at more frequent intervals to evaluate the potential need for an acoustical barrier. As the activities continue in the same location and multiple attended measurements indicate that the applicable standard has not been exceeded by the construction activity, periodic attending monitoring events are conducted to confirm continued compliance.

The attended monitoring events document the A-weighted L_{eq} sound level at periodic intervals (e.g., 5, 10, 15, 20, 30, 40, 50 and 60 minutes). The trend of the data at these intervals is evaluated in the field to assess the stability in the sound level to determine the duration of the monitoring event. When this interval data is relatively stable or clearly below the standard, the attended monitoring event will typically be 15 to 30 minutes in duration. As the applicable standards are in terms of the 24-hour average L_{dn} which is based on the L_{eq} metric, the measured L_{eq} is compared to the applicable L_{dn} standard for mobile noise sources (i.e., 60 A-weighted decibels [dBA] for Park Moabi, 65 dBA at all other locations). This results in a reasonable and conservative assessment given construction activities are not emitting noise continuously over a 24-hour period, nor are they occurring during the nighttime hours (10 p.m. to 7 a.m.).

In May 2019, 38 monitoring events have been conducted at the Park Moabi monitoring location (Figure 1). Construction activities closest to this monitoring location include activities at the SPY and CHQ, as well as construction traffic on NTH. The sound level typically varied between 38 and 59 dBA, with an average and median of 46 dBA.

In May 2019, 40 monitoring events have been conducted at Maze B-Combined Area 1/2 (Figure 2). Construction activities closest to this monitoring location include activities at MW-M, MW-R, and MW-20 Bench, as well as construction traffic on the access road. The sound levels varied between 46 and 68 dBA, with an average of 54 dBA and a median of 52 dBA. Two monitoring events resulted in noise levels exceeded the standard of 65 dBA – one event on May 8 resulted in 68 dBA which included noise from maintenance of IM3 access road, and one event on May 13 resulted in 66 dBA which included noise from well sampling at the nearby well MW-N.

In May 2019, 40 monitoring events have been conducted at Maze C-Area 1 (Figure 2). Construction activities closest to this monitoring location include construction traffic on NTH, pipeline and access road construction activities in the northern end of the floodplain. The sound level typically varied between 42 and 59 dBA, with an average and median of 49 dBA.

Monitoring will continue as work progresses and moves into new areas to identify when an acoustical barrier needs to be considered.

Attachment F
Six-Week Look-Ahead Schedule
(June 11 through July 18, 2019)

PG&E Topock Final Groundwater Remedy	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Primary Planned Activities	**6/9/2019**	**6/10/2019**	**6/11/2019**	**6/12/2019**	**6/13/2019**	**6/14/2019**	**6/15/2019**
Start Time (PST)	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM
Pipeline C Installation **E5**, **F5**	--	--	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 Dewatering test pit excavation @ C8 **Tentative:** Pipeline installation @ C17	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 Dewatering test @ C8 excavation **Tentative:** Pipeline installation @ C17	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 Dewatering test @ C8 excavation **Tentative:** Pipeline installation @ C17
Construction Water System Maintenance **G6**				Delivery, replacement and setup of (1) elevated tank			
Soil Processing **(D1)**						Mechanical processing of clean soils in preparation for re-use	
TCS Approach Pipeline Installation **F5**, **G5**, **G6**			Potholing @ Pipeline B	Potholing @ Pipeline B	Potholing @ Pipeline B		
Floodplain Access Road **(E5), (F5)**		--	Access road installation	Access road installation			
Construction Headquarters **(E1)**	--	--	Minor grading and CHQ fence installation	CHQ fence installation	CHQ fence installation	CHQ fence installation	CHQ fence installation
Well Installation	--	--	MW-X **(E6)** site prep, MW-R **(F5)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-21 **(E5)**	MW-X **(E6)** site prep, MW-R **(F5)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-21 **(E5)**	MW-X **(E6)** site prep, MW-R **(F5)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-21 **(E5)**	MW-X **(E6)** site prep, MW-R **(F5)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-23 **(E5)**	MW-X **(E6)** site prep, MW-R **(F5)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-23 **(E5)**
Well Development	--	--	MW-M **(F5)**	MW-M **(F5)**	MW-M **(F5)**	MW-M **(F5)**	MW-M **(F5)**
Well Testing	--	--	--	--	--	--	--
IM3 Brine Tank Upgrade **(E5)**							
Primary Planned Activities	**6/16/2019**	**6/17/2019**	**6/18/2019**	**6/19/2019**	**6/20/2019**	**6/21/2019**	**6/22/2019**
Start Time (PST)	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM
Pipeline C Installation **E5**, **F5**		Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Preparation for Pipeline installation @ C6	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Preparation for Pipeline installation @ C6	Surface installation for cleanouts, valve boxes, leak detection C3/C4/C5 Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Preparation for Pipeline installation @ C6	Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Preparation for Pipeline installation @ C6	Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Preparation for Pipeline installation @ C6	--
Construction Headquarters **(E1)**	--	CHQ fence installation	CHQ fence installation	CHQ fence installation	CHQ fence installation	CHQ fence installation	--
Well Installation	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-23 **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-23 **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, MW-O **(E5)**, IRZ-23 **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**	--	--
Well Development	IRZ-25 **(F5)**	IRZ-25 **(F5)**	IRZ-25 **(F5)**	IRZ-21 **(E5)**	IRZ-21 **(E5)**	--	--
Well Testing	--	--	--	--	--	--	--
IM3 Brine Tank Upgrade **(E5)**							
Primary Planned Activities	**6/23/2019**	**6/24/2019**	**6/25/2019**	**6/26/2019**	**6/27/2019**	**6/28/2019**	**6/29/2019**
Start Time (PST)	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM
Pipeline C Installation **E5**, **F5**	--	--	Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6	Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6	Pull box installation C3/C4/C5 Transfer materials and equipment from SPY to CHQ **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6	Pull box installation C3/C4/C5 Transfer materials and equipment from SPY to CHQ **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6	Pull box installation C3/C4/C5 Transfer materials and equipment from SPY to CHQ **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6
Construction Headquarters **(E1)**	--	--	CHQ fence installation	CHQ fence installation	CHQ fence installation	CHQ fence installation	CHQ fence installation
Well Installation	--	--	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**, IRZ-37 pilot **(F5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**, IRZ-37 pilot **(F5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**, IRZ-37 pilot **(F5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**, IRZ-37 pilot **(F5)**, MW-D **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**, IRZ-37 pilot **(F5)**, MW-D **(E5)**
Well Development	--	--	MW-R **(F5)**, IRZ-21 **(E5)**	MW-R **(F5)**, IRZ-21 **(E5)**	MW-R **(F5)**, IRZ-21 **(E5)**	MW-R **(F5)**, IRZ-21 **(E5)**	MW-R **(F5)**, IRZ-21 **(E5)**
Well Testing	--	--	--	--	--	--	--
IM3 Brine Tank Upgrade **(E5)**	--	--					
Primary Planned Activities	**6/30/2019**	**7/1/2019**	**7/2/2019**	**7/3/2019**	**7/4/2019**	**7/5/2019**	**7/6/2019**
Start Time (PST)	7:00 AM	7:00 AM	7:00 AM	7:00 AM	No planned activities, Independence Day Holiday	No planned activities, Independence Day Holiday	--
Pipeline C Installation **E5**, **F5**		Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6	Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6	Pull box installation C3/C4/C5 **Tentative:** Pipeline installation @ C17, Pipeline installation @ C8, Pipeline installation @ C6			--
Well Installation	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-2 pilot **(E5)**, IRZ-23 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-Y' site setup **(E6)**, MW-C **(E5)**, RB-5 **(E5)**, MW-D **(E5)**			--
Well Development	IRZ-21 **(E5)**	IRZ-21 **(E5)**	--	--			--
Well Testing	IRZ-20 **(E5)**	IRZ-20 **(E5)**	IRZ-21 **(E5)**, IRZ-20 **(E5)**	IRZ-21 **(E5)**, IRZ-20 **(E5)**			--
IM3 Brine Tank Upgrade **(E5)**							--
Primary Planned Activities	**7/7/2019**	**7/8/2019**	**7/9/2019**	**7/10/2019**	**7/11/2019**	**7/12/2019**	**7/13/2019**
Start Time (PST)	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM
Pipeline C Installation **E5**, **F5**	--	--	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6
Well Installation	--	--	MW-X **(E6)**, MW-C **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-C **(E5)**, MW-H site setup **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-C **(E5)**, MW-H site setup **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**
Well Development	--	--	--	--	--	--	--
Well Testing	--	--	IRZ-21 **(E5)**, IRZ-20 **(E5)**	IRZ-21 **(E5)**, IRZ-20 **(E5)**	IRZ-21 **(E5)**, IRZ-20 **(E5)**	IRZ-21 **(E5)**, IRZ-20 **(E5)**	IRZ-21 **(E5)**, IRZ-20 **(E5)**
IM3 Brine Tank Upgrade **(E5)**	--	--					
Primary Planned Activities	**7/14/2019**	**7/15/2019**	**7/16/2019**	**7/17/2019**	**7/18/2019**	**7/19/2019**	**7/20/2019**
Start Time (PST)	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	--
Pipeline C Installation **E5**, **F5**	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	**Tentative:** Pipeline installation @ C8, Pipeline installation @ C6	--	--
Well Installation	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	MW-X **(E6)**, MW-H **(E5)**, RB-5 **(E5)**, MW-D **(E5)**	--	--
Well Development	--	--	--	--	--	--	--
Well Testing	IRZ-21 **(E5)**, IRZ-25 **(F5)**	IRZ-21 **(E5)**, IRZ-25 **(F5)**	IRZ-21 **(E5)**, IRZ-25 **(F5)**	IRZ-21 **(E5)**, IRZ-25 **(F5)**	IRZ-21 **(E5)**, IRZ-25 **(F5)**	--	--
IM3 Brine Tank Upgrade **(E5)**						--	--

NOTES

Tasks shown tentative are pending contracting or ERTC and may be rescheduled, PG&E to notify of changes as soon as additional information is available.

The timing of field activities are estimated and may change day-to-day based on site conditions, field progress, or other factors.

When planning to visit the site to observe a specific activity or area, please contact Curt Russell (760-791-5884) for the latest schedule information.

"G5" - Intrusive work location as described on the project grid map. See Project Grid Map tab for location of grid positions provided on the lookahead

Attachment G
Available Groundwater Monitoring Data
(DTSC Condition of Approval xi)

Attachment G. Available Groundwater Monitoring Data

Pursuant to Condition of Approval # xi in DTSC's approval letter dated August 24, 2018 (DTSC, 2018a), PG&E is required to report data from samples collected as part of the sitewide groundwater monitoring program within 60 days of sample collection. In compliance with this requirement, PG&E initially submitted validated data to DTSC via monthly emails. For ease of recordkeeping and to minimize the number of ad-hoc compliance reports/emails, PG&E has since included validated data in each monthly progress report starting with the November 2018 report.

ARCADIS Design & Consultancy for natural and built assets

GMP 2019-04 Sampling

						Lab	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET
						Method	Alkalinity, total as CaCO3 SM 2320 B	Arsenic, dissolved SW 6020	Bromide EPA 300.0	Chloride EPA 300.0	Chromium, Hexavalent EPA 218.6	Chromium, total dissolved SW 6020	Manganese, dissolved SW 6020	Molybdenum, dissolved SW 6020	Nitrate/Nitrite as Nitrogen SM 4500-NO3 F	Selenium, dissolved SW 6020	Specific conductance EPA 120.1	Sulfate EPA 300.0	Total dissolved solids SM 2540 C
						Description													
						Units	mg/L	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	uS/cm	mg/L	mg/L
Location ID	Sample ID	Sample Type	Sample Method	Parent Sample ID	Matrix	Date Sampled													
MW-22	MW-22-Q219	N	LF		GW	4/23/2019		13			ND (1.0)	ND (1.0)	1,900				14,000		
MW-27-085	MW-27-085-Q219	N	LF		GW	4/22/2019		1.6			ND (0.2)	ND (1.0)	86	17	ND (0.05)	ND (0.5)	10,000		
MW-32-035	MW-32-035-Q219	N	LF		GW	4/23/2019		4.6			ND (0.2)	ND (1.0)	890				7,400		
MW-33-040	MW-33-040-Q219	N	LF		GW	4/23/2019		10			ND (0.2)	ND (1.0)	15	130	ND (0.05)	ND (0.5)	8,700		
MW-33-090	MW-33-090-Q219	N	LF		GW	4/22/2019		1.2			2.5	5.5	9.2	8.6	1.1	ND (0.5)	9,800		
MW-33-210	MW-33-210-Q219	N	LF		GW	4/22/2019		1.4			10	9.2	ND (0.5)	19	1.6	ND (2.5)	19,000		
MW-34-080	MW-34-080-Q219	N	LF		GW	4/24/2019		1.4			ND (0.2)	ND (1.0)	55		ND (0.05)		7,900		
MW-34-100	MW-34-100-Q219	N			GW	4/24/2019		1.6			ND (0.2)	ND (1.0)	140	56	ND (0.05)	ND (0.5)	9,700		
MW-36-090	MW-36-090-Q219	N	LF		GW	4/24/2019		3.3			ND (0.2)	ND (1.0)	65				4,800		
MW-36-100	MW-36-100-Q219	N			GW	4/24/2019		3.2			7.4	11	340	19	ND (0.05)	ND (0.5)	6,600		
MW-36-100	MW-905-Q219	FD		MW-36-100-Q219	GW	4/24/2019		3.2			7.1	11	330	20	ND (0.05)	ND (0.5)	6,600		
MW-39-100	MW-39-100-Q219	N	LF		GW	4/24/2019		2.2			88	89	11	7.1	0.1	ND (0.5)	12,000		
MW-42-055	MW-42-055-Q219	N			GW	4/23/2019		26			ND (0.2)	ND (1.0)	19				1,000		
MW-42-065	MW-42-065-Q219	N	LF		GW	4/23/2019		8.3			ND (0.2)	ND (1.0)	540				2,200		
MW-44-070	MW-44-070-Q219	N	LF		GW	4/24/2019		2.7			ND (0.2)	ND (1.0)	230				1,800		
MW-44-115	MW-44-115-Q219	N	LF		GW	4/24/2019		5.2			6	6.1	6.1	68	ND (0.05)	ND (0.5)	10,000		
MW-44-125	MW-44-125-Q219	N			GW	4/24/2019		5.9			1.9	10	270	120	ND (0.05)	ND (0.5)	5,700		
MW-52D	MW-52D-Q219	N	LF		GW	4/23/2019		3			ND (1.0)	ND (1.0)	260				19,000		
MW-52D	MW-908-Q219	FD		MW-52D-Q219	GW	4/23/2019		3			ND (1.0)	ND (1.0)	270				19,000		
MW-52M	MW-52M-Q219	N			GW	4/23/2019		1.3			ND (1.0)	ND (1.0)	150				14,000		
MW-52S	MW-52S-Q219	N	LF		GW	4/23/2019		0.38			ND (0.2)	ND (1.0)	1,200				9,400		
MW-53D	MW-53D-Q219	N			GW	4/23/2019		4.2			ND (1.0)	ND (1.0)	1,400				24,000		
MW-53M	MW-53M-Q219	N	LF		GW	4/23/2019		0.82			ND (1.0)	ND (1.0)	430				18,000		
TW-02D	TW-02D-Q219	N	Tap		GW	4/23/2019	180		ND (2.5)	1,200	93	46	27	10		2	4,600	330	2,800

ARCADIS Design & Consultancy for natural and built assets

PMP 2019-04 Sampling

				Lab	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET	ASSET
				Method	Alkalinity, total as CaCO3	Calcium, dissolved	Chloride	Chromium, Hexavalent	Chromium, total dissolved	Iron, dissolved	Magnesium, dissolved	Manganese, dissolved	Nitrate/Nitrite as Nitrogen	pH	Sodium, dissolved	Specific conductance	Sulfate	Total dissolved solids
				Description	SM 2320 B	EPA 200.7	EPA 300.0	EPA 218.6	EPA 200.8	EPA 200.7	EPA 200.7	EPA 200.8	SM 4500-NO3 F	SM 4500-H+ B	EPA 200.7	EPA 120.1	EPA 300.0	SM 2540 C
				Units	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	mg/L	ug/L	mg/L	PHUNITS	mg/L	uS/cm	mg/L	mg/L
Location ID	Sample ID	Sample Type	Matrix	Date Sampled														
PE-01	PE-01-0419	N	GW	4/23/2019	210	140	350	ND (0.2)	ND (1.0)	ND (20)	33	510	ND (0.05)	7.4	310	1,900	240	1,200
TW-03D	TW-03D-0419	N	GW	4/23/2019	170	230	2,200	470	480	ND (20)	28	18	2.5	7.2	1,600	7,400	510	4,300

ARCADIS Design & Consultancy for natural and built assets

TMP-2019-Q2 Baseline Sampling

Location ID	Sample Type	Sample Method	Parent Sample ID	Matrix	Date Sampled	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Bromide	Cadmium	Calcium	Chloride	Chromium, hexavalent	Chromium, total	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Nitrate/Nitrite as nitrogen as N (EC-N03)	Potassium	Selenium	Silver	Sodium	Sulfate	Thallium	Total dissolved solids	Total organic carbon	Vanadium	Zinc	Ammonia as nitrogen as N (Alk-N3)
Method						SW 6020B	SW 6020	SW 6020	SW 6020	SW 6020	SW 6010B	SW 6020B	SW 6020	SW 6010B	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 7470A	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 2540C	SW 5310 C	SW 6020	SW 6020	SW 6020
Description						SW 2320 B	SW 6010B	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020B	SW 6020	SW 6010B	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 7470A	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 6020	SW 2540C	SW 5310 C	SW 6020	SW 6020	SW 6020
Units						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-E-140	N	LF		GW	4/17/2019	95	58	ND (50)	ND (0.5 J)	ND (0.5 J)	3.9	3.9	35	33	ND (2.5)	ND (2.5)	ND (2.5)	2,000 J	1.9 J	ND (2.5)	ND (0.5)	ND (0.5)	500,000	260	3,700	8,600	7,400	7,200	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	2.7	108 J	ND (1.0)	ND (14.0)	ND (1.0)	15,000	10	96	91	ND (1.0)	ND (0.5)	20	21	ND (1.0)	ND (1.0)	8.7	27	23	22	ND (0.5)	ND (0.5)	2,800	300	ND (0.5)
MW-E-141	FD	LF	MW-E-140-0419	GW	4/17/2019	97	ND (50)	ND (0.5 J)	ND (0.5 J)	3.9	3.9	35	32	ND (2.5)	ND (2.5)	2,100	1.8	ND (2.5)	ND (0.5)	ND (0.5)	500,000	262	3,700	8,600	7,300	7,200	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	2.9	109 J	ND (1.0)	ND (14.0)	ND (1.0)	15,000	11	96	91	ND (1.0)	ND (0.5)	21	20	ND (1.0)	ND (1.0)	8.1	26	23	21	ND (0.5)	ND (0.5)	2,800	300	ND (0.5)
MW-P-104	N	LF		GW	4/16/2019	140	ND (50)	ND (0.5 J)	ND (0.5 J)	5.7	5.6	100	100	ND (2.5)	ND (2.5)	1,500 J	1.3 J	3.3	ND (0.5)	ND (0.5)	130,000	120 J	1,800	2,000	2,100	2,100 J	ND (0.5)	ND (0.5)	ND (1.0) J	4.9	590 J	ND (1.0)	ND (1.0)	16	36	ND (1.0)	ND (14.0)	14 J	300 J	ND (1.0)	ND (1.0)	12	19	61	66	ND (0.5)	ND (0.5)	1,500	790	ND (0.5)
MW-P-60	N	LF		GW	4/16/2019	96	1,400	ND (50)	ND (0.5 J)	2.9	2.9	150	150	ND (2.5)	ND (2.5)	600	0.27	ND (1.0)	ND (0.5)	ND (0.5)	140,000	99	990	210	87	200	0.57	ND (0.5)	ND (1.0)	ND (1.0)	1	1,700	ND (1.0)	ND (14.0)	29,000	21	490	470	ND (0.5)	ND (0.5)	23	23	1.2	ND (1.0)	5.1	15	6.3	6.8	ND (0.5)	ND (0.5)	400	540	ND (0.5)
MW-U-57-0419	N	LF		GW	4/16/2019	120	ND (50)	ND (0.5 J)	ND (0.5 J)	3.1	3.2	55	55	ND (2.5)	ND (2.5)	300	0.75	5.9	ND (0.5)	ND (0.5)	130,000	88	1,200	450	490	490	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	3	76	ND (1.0)	ND (14.0)	19,000	15	100	110	ND (0.5)	ND (0.5)	40	40	1	ND (1.0)	11	18	22	26	ND (0.5)	ND (0.5)	1,100	520	ND (0.5)
MW-U-60	N	LF		GW	4/16/2019	96	ND (50)	ND (0.5 J)	ND (0.5 J)	3.3	3.3	49	50	ND (2.5)	ND (2.5)	1,000	0.84	ND (2.5)	ND (0.5)	ND (0.5)	140,000	209	2,700	1,700	1,400	1,700	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	3.1	31	ND (1.0)	ND (14.0)	29,000	19	40	40	ND (0.5)	ND (0.5)	38	33	ND (1.0)	ND (1.0)	8.1	27	31	15	ND (0.5)	ND (0.5)	1,700	520	ND (0.5)
MW-L-185	N	LF		GW	4/17/2019	63	170	ND (50)	ND (0.5 J)	2.2	2.2	88	88	ND (2.5)	ND (2.5)	1,900	0.74	ND (2.5)	ND (0.5)	ND (0.5)	290,000	160	3,000	ND (1.0)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	3.1	20	23	ND (1.0)	ND (14.0)	27,000	37	67	62	ND (0.5)	ND (0.5)	39	35	ND (1.0)	ND (1.0)	1.2	22	77	ND (0.5)	ND (0.5)	2,300	490	ND (0.5)
MW-L-205	N	LF		GW	4/16/2019	89	150	ND (50)	ND (0.5 J)	5.6	5	55	49	ND (2.5)	ND (2.5)	1,900	1.6	ND (2.5)	ND (0.5)	ND (0.5)	480,000	270	5,400	680	490	840	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	4.2	350	52	ND (1.0)	ND (14.0)	17,000	16	21	13	ND (0.5)	ND (0.5)	45	45	ND (1.0)	ND (1.0)	0.67	22	0.64	ND (1.0)	ND (0.5)	8,200	680	ND (0.5)
MW-L-206	N	LF		GW	4/16/2019	89	150	ND (50)	ND (0.5 J)	5.6	5.6	55	50	ND (2.5)	ND (2.5)	1,900	1.6	ND (2.5)	ND (0.5)	ND (0.5)	480,000	270	5,400	680	490	840	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	4.2	350	52	ND (1.0)	ND (14.0)	17,000	16	21	13	ND (0.5)	ND (0.5)	45	45	ND (1.0)	ND (1.0)	0.64	22	ND (1.0)	ND (1.0)	ND (0.5)	8,200	680	ND (0.5)
MW-L-301-0419	N	LF		GW	4/17/2019	98	58	ND (50)	ND (0.5 J)	ND (0.5 J)	3.8	3.8	40	37	ND (2.5)	ND (2.5)	1,900	2.3 J	3.2	ND (0.5)	ND (0.5)	ND (0.5)	500,000	260	5,400	7.8	7.8	7.8	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	4.2	100	ND (1.0)	ND (14.0)	15,000	21	21	21	ND (0.5)	ND (0.5)	7.1	7.1	7.1	ND (1.0)	ND (1.0)	7.1	11	ND (1.0)	ND (1.0)	ND (0.5)	5,900	580	ND (0.5)
MW-U-62	N	LF		GW	4/17/2019	98	58	ND (50)	ND (0.5 J)	ND (0.5 J)	3.8	3.8	40	37	ND (2.5)	ND (2.5)	1,900	2.3 J	3.2	ND (0.5)	ND (0.5)	ND (0.5)	500,000	260	5,400	7.8	7.8	7.8	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	4.2	100	ND (1.0)	ND (14.0)	15,000	21	21	21	ND (0.5)	ND (0.5)	7.1	7.1	7.1	ND (1.0)	ND (1.0)	7.1	11	ND (1.0)	ND (1.0)	ND (0.5)	5,900	580	ND (0.5)
MW-N-223	N	LF		GW	4/16/2019	160	ND (50)	ND (0.5 J)	ND (0.5 J)	4.9	4.9	40	42	ND (2.5)	ND (2.5)	800	0.23	3.2	ND (0.5)	ND (0.5)	140,000	91	540	66	55	68	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	4.6	60	ND (1.0)	ND (14.0)	25,000	20	21	20	ND (0.5)	ND (0.5)	6.2	5.5	6.5	6.1	1.1	19	6.4	6.3	6.2	ND (0.5)	ND (0.5)	490	450	ND (0.5)
MW-N-227	N	LF		GW	4/16/2019	90	200	ND (50)	ND (0.5 J)	5.1	4.4	70	65	ND (2.5)	ND (2.5)	1,900	3.7	ND (2.5)	ND (0.5)	ND (0.5)	320,000	165	2,100	73	55	61	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	4.8	420	43	ND (1.0)	ND (14.0)	10,000	8.9	270	200	ND (0.5)	ND (0.5)	100	110	ND (1.0)	ND (1.0)	8.9	15	5.5	5.3	ND (0.5)	ND (0.5)	3,600	1,000	ND (0.5)
MW-N-229	N	LF		GW	4/16/2019	89	490	ND (50)	ND (0.5 J)	7.7	4.7	400	140	ND (2.5)	ND (2.5)	1,900	2.1	ND (2.5)	ND (0.5)	ND (0.5)	320,000	480	6,100	1,200	1,300	1,200	1.5	ND (0.5)	ND (1.0)	ND (1.0)	4.5	1,900	ND (1.0)	4.6	ND (14.0)	15,000	10	880	880	ND (0.5)	ND (0.5)	78	84	6.2	ND (1.0)	6.4	49	6.4	7	ND (0.5)	ND (0.5)	4,000	900	ND (0.5)
MW-W-31	N	LF		GW	4/16/2019	100	ND (50)	ND (0.5 J)	ND (0.5 J)	6.5	6.7	490	490	ND (2.5)	ND (2.5)	1,800	7.5	ND (2.5)	ND (0.5)	ND (0.5)	390,000	360	4,000	ND (1.0)	4.7	4.7	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	3.9	11,000	6,800	ND (1.0)	ND (14.0)	20,000	16	880	790	ND (0.5)	ND (0.5)	17	49	ND (1.0)	ND (1.0)	ND (0.5)	23	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.5)	4,000	4,900	ND (0.5)

ARCADIS Design & Consultancy for natural and built assets

TMP 2019-04 Post Development Sampling

				Lab	ASSET	ASSET
				Method	Chromium, Hexavalent	Chromium, total dissolved
				Description	EPA 218.6	SW 6020
				Units	ug/L	ug/L
Location ID	Sample ID	Sample Type	Matrix	Date Sampled		
MW-10D	MW-10D-041119	N	GW	4/11/2019	160	160
MW-N-129	MW-N-129-040319	N	GW	4/3/2019	46	45
MW-N-217	MW-N-217-040219	N	GW	4/2/2019	110	110
MW-N-237	MW-N-237-040119	N	GW	4/1/2019	1,500	1,600
MW-W-31	MW-W-31-040419	N	GW	4/4/2019	ND (1.0)	ND (1.0)