



Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Henry R. Darwin
Director

Via U.S. Mail and E-Mail

June 29, 2015
VRP 15-246

Ms. Yvonne Meeks
Topock Project Manager
Pacific Gas and Electric Company
4325 South Higuera,
San Luis Obispo, CA 93401

Re: Response to Review of Arizona Monitoring Wells November-December 2014 Groundwater Sampling Results
Topock Groundwater Site
Needles, California
VRP Site Code: 506252-01

Dear Ms. Meeks,

The Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP) has completed review of the response to the *Review of Arizona Monitoring Wells November-December 2014 Groundwater Sampling Results* (Letter) dated April 20, 2015 and received by the VRP on April 22, 2015. The Letter was submitted by the Pacific Gas and Electric Company (PG&E) for the Topock Groundwater Site (site).

The VRP has the following comments:

General Comments

1. The VRP requested well development logs in its March 23, 2015 *Review of Arizona Monitoring Wells November-December 2014 Groundwater Sampling Results*. In the April 20 Letter, PG&E provided a table of development data for certain wells, but the table does not provide all of the information that would be available in the logs.
2. The VRP notes the following with regards to monitoring well MW-55-120, based on information provided in the Letter:
 - a. The well is screened in a finer-grained sandy silt/silty sand unit, with the percentage of fines ranging from 25% to 70%.
 - b. The well was constructed with a well screen with 0.02 slots and a #3 filter pack, which is similar to the wells completed in less fine-grained alluvium.
 - c. The well was completed as a nested 2-inch diameter well located in an 8-inch borehole.

- d. The well had a high turbidity associated with well development (196 nephelometric turbidity units).
- e. The well yielded high, anomalous specific conductance as part of well development (19,900 microSiemens per centimeter) as compared to specific conductance measured during regular sampling events.

Due to the fine-grained nature of the screened unit for well MW-55-120, the slot size and filter pack may not have allowed for adequate development, thereby resulting in decreased hydraulic communication between the well and the aquifer. Development may have also been hindered by the larger filter pack present around the well due to the nested well construction. The high turbidity noted during development supports these observations.

Recommendations

1. The VRP recommends submitting the well development logs for MW-33, MW-47, MW-54, MW-55, MW-56, and MW-69, as these logs may provide additional information with regards to the nature of physical/chemical changes observed during well development.
2. The VRP recommends PG&E provide the rationale for the selection of the well design (specifically slot and filter pack size) chosen for MW-55-120.
3. The VRP recommends PG&E assess whether different size slot and filter pack should be used in the future when similar lithologic conditions present themselves during the installation of remedy wells.
4. The VRP recommends PG&E explain the anomalous elevated specific conductivity measurement documented during development of Well MW-55-120.
5. The VRP recommends PG&E evaluate whether well redevelopment should be considered after reviewing well development records.
6. The VRP recommends PG&E increase the sampling frequency for well MW-55-120 to quarterly to hasten the confirmation that chromium levels will stabilize somewhere at or below 10 micrograms per liter, as predicted in PG&E's February 23, 2015 *Arizona Monitoring Wells November-December 2014 Groundwater Sampling Results*.

How to Submit

Please submit documents sent in response to this letter using the following methods:

1. Hard copy to:

ADEQ
Attention: Nichole Osuch, Voluntary Remediation Program
1110 West Washington Street
Phoenix, AZ 85007

2. E-mail to osuch.nichole@azdeq.gov

In general, the VRP requests two hard copies and an electronic copy (.pdf) of submitted documents.

Additional Information

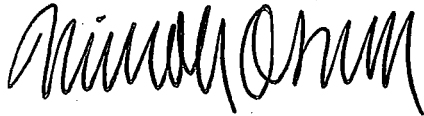
The VRP site name and site code should be consistently used on all correspondence and reports relating to this site to ensure accuracy of file identification.

Information pertaining to the VRP can be obtained by accessing ADEQ's web page at www.azdeq.gov, or by visiting ADEQ's office at 1110 West Washington Street, Phoenix, Arizona. Information pertaining to Arizona Revised Statutes Title 49 can be obtained by accessing the Arizona State Legislature web page at www.azleg.gov. Information pertaining to Arizona Administrative Code rule citations may be found at www.azsos.gov.

You may contact the ADEQ Records Management Center staff about reviewing or copying file information at 602-771-4380.

The VRP appreciates PG&E's continued efforts in characterizing and remediating this site. If you have any questions, please contact me at 602-771-4847, toll-free at 1-800-234-5677, or osuch.nichole@azdeq.gov.

Sincerely,



Nichole Osuch, Project Manager
Voluntary Remediation Program
Waste Programs Division

cc: Mr. Aaron Yue, Project Manager, Geological Services Branch, California Department of Toxic Substances Control
Ms. Pamela Innis, Topock Remedial Project Manager, Office of Environmental Policy and Compliance – Denver Region