Pacific Gas and Electric Company

**John Glass**
Pacific Gas and Electric Co
Program Manager

300 Lakeside Drive
Oakland, CA 94612
(628) 219-4369
frederick.glass@pge.com

June 25, 2024

Mr. Christopher Ioan
Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

**Subject:** *First Quarter 2024 Well Performance Report, PG&E Topock Compressor Station, Needles, California* (PGE20180115A)

Dear Mr. Ioan:

Enclosed is the First Quarter 2024 Well Performance Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station located in Needles, California (the Site). In December 2021, startup began for Phase 1 of the groundwater remedy system including start of National Trails Highway in-situ reactive zone (IRZ) system operation, maintenance, and monitoring to address hexavalent chromium in groundwater. Operation of the IRZ injection and extraction wells continued in First Quarter 2024.

In accordance with the reporting requirements outlined in the Basis of Design Report/Final (100%) Design Submittal, this well performance report presents an overview of the groundwater remedy and well maintenance objectives; a summary of First Quarter 2024 well operations, maintenance, and performance monitoring activities; and recommendations and planned activities for the next reporting period.

Please contact me at (628) 219-4369 if you have any questions about the well performance report.

Sincerely,

John Glass
Pacific Gas and Electric Co
Program Manager

Cc: Chris Guerre/DTSC
Veronica Dickerson/DOI
Ken Foster/CA-SLC
Bruce Campbell/AZ-SLD

# *Topock Project Executive Abstract*

| | |
|---|---|
| **Document Title:** | First Quarter 2024 Well Performance Report, PG&E Topock Compressor Station, Needles CA |
| **Submitting Agency:** | DTSC and DOI |
| **Final Document?** | ☒ Yes ☐ No |
| **Date of Document:** | June 25, 2024 |
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| **Priority Status:** | ☐ HIGH ☐ MED ☒ LOW |
| **Is this time critical?** | ☐ Yes ☒ No |
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| **Action Required:** | ☒ Information Only ☐ Review & Comment<br>Return to: _____ By Date: _____<br>☐ Other / Explain: |
| **What does this information pertain to?** | ☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)<br>☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)<br>☐ Corrective Measures Study (CMS)/Feasibility Study (FS)<br>☒ Corrective Measures Implementation (CMI)/Remedial Action<br>☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)<br>☐ Interim Measures<br>☐ Other / Explain: |
| **Is this a regulatory requirement?** | ☒ Yes ☐ No<br><br>If no, why is the document needed? |
| **What is the consequence of NOT doing this item? What is the consequence of DOING this item?** | Submittal of this report is a compliance requirement under DTSC and DOI requirements. |
| **Other Justification/s:** | ☐ Permit ☐ Other / Explain: |
| **Brief Summary of Attached Document:** | In December 2021, startup began for Phase 1 of the groundwater remedy system including start of National Trails Highway in-situ reactive zone (IRZ) system operation, maintenance, and monitoring to address hexavalent chromium in groundwater. Operation of the IRZ injection and extraction wells continued in First Quarter 2024. In accordance with the reporting requirements outlined in the Basis of Design Report/Final (100%) Design Submittal, this well performance report presents an overview of the groundwater remedy and well maintenance objectives; a summary of First Quarter 2024 well operations, maintenance, and performance monitoring activities; and recommendations and planned activities for the next reporting period.<br>Written by: PG&E |
| **Recommendations:** | None. |
| **How is this information related to the Final Remedy or Regulatory Requirements?:** | This report is required by DTSC and DOI as part of the Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy. |

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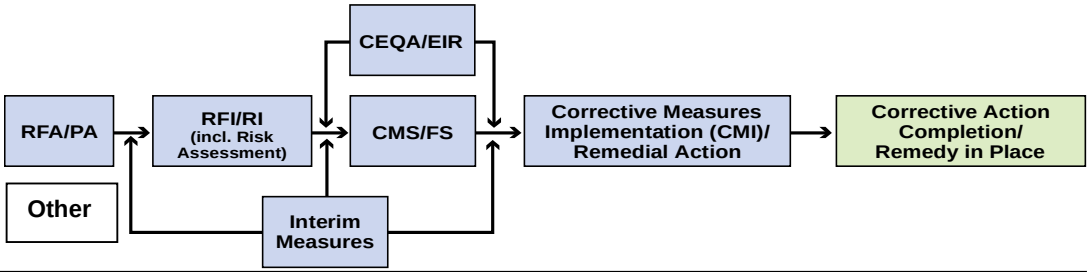
|---|---|
| **Other requirements of this information?:** | None. |
| **Related Reports and Documents:** | Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).<br>  <br><br>**Legend**<br>RFA/PA – RCRA Facility Assessment/Preliminary Assessment<br>RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)<br>CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study<br>CEQA/EIR – California Environmental Quality Act/Environmental Impact Report |

**Version 9**

Pacific Gas and Electric Company

# First Quarter 2024 Well Performance Report

## Topock Compressor Station

## Needles, California

June 25, 2024

# First Quarter 2024 Well Performance Report

**Topock Compressor Station**

**Needles, California**

June 25, 2024

**Prepared By:**
Arcadis U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco
California 94104
Phone: 415 374 2744
Fax: 415 374 2745

**Our Ref:**
30211191

This report was prepared under the supervision of a California Professional Engineer.

Kimberly Wojcik
Arcadis Report Lead


Margaret Gentile, PhD, PE No. 77488
Principal Engineer

Treck Hohman
Arcadis Project Manager

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# Acronyms and Abbreviations

| | |
|---|---|
| Agencies | U.S. Department of the Interior and the California Department of Toxic Substances Control |
| CH2M Hill | CH2M Hill, Inc. |
| Cr6 | hexavalent chromium |
| DOI | U.S. Department of the Interior |
| DTSC | California Department of Toxic Substances Control |
| Final BOD | Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan for the Final Groundwater Remedy |
| gpm | gallons per minute |
| IRZ | in-situ reactive zone |
| mg/L | milligrams per liter |
| NTH | National Trails Highway |
| NTU | nephelometric turbidity unit |
| O&M | operation and maintenance |
| PG&E | Pacific Gas and Electric Company |
| ppb | part per billion |
| SCADA | supervisory control and data acquisition |
| Site | PG&E Topock Compressor Station, located in eastern San Bernardino County, 15 miles southeast of the City of Needles, California |
| TCS | Topock Compressor Station |
| TOC | total organic carbon |

# 1 Introduction

Pacific Gas and Electric Company (PG&E) is implementing a final groundwater remedy to address hexavalent chromium (Cr6) 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 Site). PG&E is implementing the groundwater remedy at the TCS in conformance with the requirements of the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Liability Act. The U.S. Department of the Interior (DOI) and the California Department of Toxic Substances Control (DTSC), collectively known as the Agencies, executed a Memorandum of Understanding on November 22, 2011, which established coordination guidelines for overseeing implementation of a groundwater response action at the TCS (DTSC and DOI 2011). In a coordinated effort, the Agencies selected the final groundwater remedy to address chromium in groundwater, which is presented in the Record of Decision (DOI 2010).

In November 2015, PG&E submitted a Basis of Design Report/Final (100%) Design Submittal (Final BOD), which presents the final design basis, design criteria, drawings, specifications, and operation and maintenance (O&M) requirements for the groundwater remedy (CH2M Hill, Inc. [CH2M Hill] 2015a). The infrastructure for the groundwater remedy is being constructed following the plans and procedures documented in the Construction/Remedial Action Work Plan (CH2M Hill 2015b). Construction and startup of the groundwater remedy is proceeding in phases.

Construction of Phase 1 began in October 2018 and was completed in December 2021 sufficient for initial system startup. The design was modified during construction to accommodate conditions encountered including a plume footprint smaller than that documented in the Final BOD (CH2M Hill 2015a). As a result, the National Trails Highway (NTH) in-situ reactive zone (IRZ) system was installed with 10 fewer wells than planned in the Final BOD, with these 10 wells being deferred from Phase 1 to Phase 2 of construction.

The NTH IRZ is a recirculation system in which water is extracted from up to five NTH IRZ extraction wells, amended with carbon substrate, and injected into up to 25 NTH IRZ injection intervals. In wells with triple screens (IRZ-25 and IRZ-27), two of the three well screens are combined into single intervals by packers. The NTH IRZ extraction wells include IRZ-9, IRZ-13S, IRZ-13D, IRZ-23, and pilot test well PTI-1D.

Injection well intervals include IRZ-15 (upper), IRZ-15 (lower), IRZ-16 (upper), IRZ-16 (lower), IRZ-17 (upper), IRZ-17 (lower), IRZ-18 (upper), IRZ-18 (lower), IRZ-20 (upper), IRZ-20 (lower), IRZ-21 (upper), IRZ-21 (lower), IRZ-25 (upper/upper middle), IRZ-25 (lower), IRZ-27 (upper/upper middle), IRZ-27 (lower), IRZ-29 (upper), IRZ-29 (lower), IRZ-31 (upper), IRZ-31 (lower), IRZ-33 (upper), IRZ-33 (lower), IRZ-35, IRZ-37, and IRZ-39.

A site layout, including locations of the extraction wells, the remedy-produced water conditioning system, and the carbon amendment system, is shown on Figure 1.1.

In December 2021, startup began for Phase 1 of the groundwater remedy system including the start of NTH IRZ system operation, maintenance, and monitoring. O&M are being performed in accordance with the O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a). This report documents well maintenance and well performance from January 1 to March 31, 2024 (the First Quarter 2024). The remainder of this report is organized into the following sections:

- Section 2 provides an overview of the well maintenance program.
- Section 3 summarizes the well performance and maintenance for the NTH IRZ remedial wells.

- Section 4 summarizes monitoring well performance.
- Section 5 provides recommendations for modifications to the well maintenance program and planned activities for the next reporting period.
- Section 6 provides the references for the documents cited throughout this report.

During First Quarter 2024, PG&E conducted a data quality audit on historical and recent laboratory analytical data for the TCS. This data quality audit revealed that in limited instances between 2020 and 2023, select non-detect values were correctly reported as “non-detect” but were associated with an incorrect reporting limit in report tables. This error occurred due to an incorrect assumption in automated table-generation programming. This has been corrected and all table-generation programming was updated as applicable to include additional logic to address this situation. There is no compliance concern as all compliance, trigger, and/or sensitive well/analyte pairs are reviewed immediately upon receipt from the laboratory pre-validation by both an automated and manual data review process and all data points in question were re-reviewed to confirm there is no compliance concern. This correction process is explained in more detail in the PG&E Topock Chromium Non-detect Reporting Limit Correction memorandum dated June 18, 2024 provided herein as Appendix A.

# 2 NTH IRZ Well Maintenance Program

The well maintenance program consists of routine maintenance and performance tracking including tracking well performance over time, collecting analytical data, and inspecting wells to evaluate well integrity over time. This section summarizes these activities.

## 2.1 Routine Maintenance

Well maintenance is incorporated into the routine operations of the NTH IRZ. Exhibit 2.1 in this section summarizes the initially planned maintenance for NTH IRZ wells. Injection wells are prone to fouling, as the injection of organic carbon stimulates the growth of bacteria, generation of gases such as carbon dioxide, and formation of mineral precipitates. To mitigate fouling resulting from these processes, routine maintenance plans include backwashing and mechanical and chemical rehabilitation. Injection wells are backwashed by extracting groundwater for a short period using a downhole pump to loosen and remove sediments and deposits present on the well screen or in the filter pack. Backwashing of injection wells was initially planned to occur weekly during operations. Mechanical rehabilitation physically agitates and removes dislodged and detached deposits. Chemical rehabilitation uses additives to remove deposits (for example, by increasing solubility). Mechanical and chemical rehabilitation was planned to occur after periods of extended injection well operation and before planned extended downtime (approximately every 6 months to 1.5 years). The frequencies of injection well rehabilitation initially planned are presented in Exhibit 2.1 in this section, but frequency or manner of application may change in response to well performance monitoring data as detailed in Section 2.2. Extraction wells are less prone to fouling and, as such, the frequency of routine rehabilitation is significantly lower than that for the injection wells. The O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a) recommended mechanical rehabilitation (i.e., pumping and surging) for routine maintenance as needed. Chemical rehabilitation may be warranted in some cases.

*Exhibit 2.1 Routine Maintenance Matrix for Injection and Extraction Wells*

| Injection Well Backwashing Frequency | Injection Well Chemical/Mechanical Rehabilitation Frequency | Extraction Well Mechanical Rehabilitation Frequency |
|---|---|---|
| Weekly | 6 months to 1.5 years | As needed |

## 2.2 Long-Term Performance Tracking

The purpose of well performance tracking is to assess the frequency and methods required for well maintenance, report well performance trends, and identify potential performance declines within the IRZ system and monitoring wells. Routine preventative maintenance is performed regularly to aid in maintaining well health as described in Section 2.1. Long-term performance monitoring consists of specific capacity monitoring, water quality monitoring, and wellhead inspection. Exhibit 2.2 in this section presents the planned frequency of these activities, and specific capacity and water quality monitoring are detailed in the following subsections.

*Exhibit 2.2. Performance Monitoring Frequencies*

| Performance Monitoring Activity | Injection Wells | Extraction Wells |
|---|---|---|
| Specific capacity evaluation | Monthly | Monthly |
| Water quality monitoring | Baseline, then as needed | Baseline as well as the following:<br>Monthly total organic carbon (TOC), manganese, iron, and field parameter screening in 2022 and First and Second Quarters 2023, then quarterly for the remainder of 2023, then annually or as needed thereafter.<br>Annual or as needed biological and geochemical sampling.<br>Annual or as needed biological activity tests, sand content tests, and modified fouling index tests. |
| Wellhead inspection | Quarterly | Quarterly |

**Notes:**
1. Field parameters include temperature, pH, specific conductance, turbidity, dissolved oxygen, and oxidation reduction potential.
2. Biological and geochemical sampling parameters for extraction wells include TOC, total dissolved solids, iron and manganese (total and dissolved), calcium, potassium, magnesium, sodium (total), chloride, fluoride, bromide, nitrate, nitrite, sulfate, alkalinity (total, carbonate, and bicarbonate), and hardness as calcium carbonate. Parameters measured during baseline only include Title 22 metals (total and dissolved), sulfide, phosphate, total phosphorus, silica, ammonia as nitrogen, total Kjeldahl nitrogen, and biochemical oxygen demand.

### 2.2.1 Specific Capacity Monitoring

One measure that will be used to assess well performance is a specific capacity evaluation. The specific capacity for each extraction, injection, and monitoring well is determined by the rate of extraction or injection per unit of drawdown or draw-up in the well. Mathematically, this is calculated using the following equation:

$$Specific\ Capacity\ \left(\frac{gpm}{ft}\right) = \frac{discharge\ rate\ (gpm)}{operating\ water\ level\ (ft) - static\ water\ level\ (ft)}$$

Where:
ft = foot/feet
gpm = gallons per minute

As discussed in the First Quarter 2022 Well Performance Report (Arcadis 2022a), baseline specific capacities are determined for each extraction and injection well once the wells are operating consistently and the flowrates and

water levels stabilize. Baseline capacities were established in Second Quarter 2022 for wells that operated continuously for most of the quarter including IRZ-13S, IRZ-13D, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-23, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37 (Arcadis 2022b, 2022c). Baseline capacities were modified in Third Quarter 2022 for extraction wells IRZ-13S, IRZ-13D, and IRZ-23 as explained below. Extraction well IRZ-9 and injection wells IRZ-21 and IRZ-25 have not operated continuously since IRZ operations began; therefore, sufficient data were not available to establish baselines for these wells. IRZ-39 operated for most of First Quarter 2023; however, IRZ-39 flowrates were low and unsustainable. IRZ-39 is not currently needed for treatment based on Cr6 concentrations at nearby performance monitoring wells, as discussed in the First Quarter 2023 Quarterly Progress Report (Arcadis 2023a); therefore, this well remained offline following the mid-March 2023 storm. Baseline capacities were established for IRZ-15 (upper) and IRZ-15 (lower) in Second Quarter 2023 and Third Quarter 2023, respectively, following continuous operation at these intervals at their target flowrates for an extended period of time. Extraction well PTI-1D began operation in Fourth Quarter 2023, and a baseline capacity was established in December 2023 following approximately 2 months of operation.

Static water levels were collected for each injection and extraction well during well development. Static water levels vary naturally depending on the time of year. To account for this natural variation, the static water levels collected before system operation were adjusted by the typically observed difference in water levels at time of development and in January, which is the month in which water levels are at their lowest at the Site. Specific capacity values may be affected by planned IRZ operational changes such as setting a new target flowrate. Where this occurs, baseline specific capacity values may be adjusted.

Starting in Third Quarter 2022, specific capacities for each well were calculated monthly and compared to the baseline values to assess well performance decline over time. As presented in the O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a), specific capacities greater than or equal to 90 percent of the baseline capacities will be classified as having good performance; specific capacities that fall between 80 and 90 percent of the baseline capacities will be classified as having fair performance; specific capacities below 80 percent of the baseline capacities will be classified as having poor performance. Specific capacities that fall below 80 percent of the baseline capacities will be flagged as needing evaluation and potential additional maintenance such as increasing the frequency of backwashing or rehabilitation. Specific capacity data collected during operations are presented in Section 3. Additional data evaluation and establishment of baseline specific capacities for the remaining injection wells (IRZ-21, IRZ-25, and IRZ-39) will occur once those wells have been operating continuously and specific capacities stabilize.

### 2.2.2 Water Quality Monitoring

Water quality monitoring, including field parameter collection and sampling, provides information on system status, which may help diagnose well clogging issues and provide information for designing corrective measures. Baseline water quality sampling included biological, geochemical, and field parameters as specified in Exhibits 4.1-1 and 4.1-2 of the O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a). Extraction wells are sampled annually or as needed, as stated in Exhibit 2.2 and in alignment with expectations in the O&M Manual (Appendix L, Volumes 1 and 2; CH2M Hill 2015a) for extraction of constituents associated with in-situ injections including TO C and dissolved metals. Samples were collected during First Quarter 2024 and analyzed for select parameters according to standard operating procedures presented in Appendix B to the Phase 1 Interim Monitoring Plan (Arcadis 2021) and the PG&E Program Quality Assurance Project Plan (CH2M Hill 2014; Critigen 2020). Sample results are discussed in Section 3.2.3 of this report.

# 3 NTH IRZ Well Performance

This section summarizes NTH IRZ system operational changes, well specific capacities, and water quality monitoring that occurred during the First Quarter 2024.

## 3.1 System Operation Summary

Throughout First Quarter 2024, routine operation of the IRZ system continued with extraction wells IRZ-23, IRZ-13S, and IRZ-13D; pilot test well PTI-1D; and injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37 operating with periodic well rehabilitation.

Operation during First Quarter 2024 prioritized maximizing extraction rates at IRZ-23 and PTI-1D for plume control and IRZ injection wells operated to meet target flowrates when possible to accommodate the extracted water[1]. Total recirculation flowrate varied throughout the quarter as maintenance was performed at each IRZ injection well, either for chemical application at the wellhead (generally 2 to 3 days of downtime) or full chemical and mechanical well rehabilitation (1 to 2 weeks of downtime).

In accordance with the PTI-1D Floodplain Extraction Test Work Plan (Arcadis 2023c), IRZ-23 and PTI-1D were operated at target extraction rates of 65 gpm and 30 gpm, respectively. The extraction rate at PTI-1D varied from 27 gpm to 30 gpm due to variations in system backpressure resulting from wells being turned off during maintenance at varying times. Efforts were made to maximize the extraction rate at PTI-1D to the extent feasible by adjusting flowrates at other operating wells. When the total extraction flowrate at IRZ-23 and PTI-1D exceeded about 105 gpm, extraction well IRZ-13D was turned on at a flowrate of 10 to 20 gpm. If the flowrate at IRZ-13D exceeded 20 gpm, extraction well IRZ-13S was turned on, and the excess flow above 95 gpm was split evenly between IRZ-13S and IRZ-13D.

Extraction wells IRZ-13S and IRZ-13D operated in early January 2024 with a few short periods of downtime and were both operated intermittently from mid-January 2024 through mid-March 2024. IRZ-13S operated for 48 percent of the time in January 2024, 38 percent in February 2024, and 20 percent in March 2024. IRZ-13D operated for 65 percent of the time in January 2024, 71 percent in February 2024, and 49 percent in March 2024. IRZ-13S and IRZ-13D were offline from mid-March 2024 through the rest of the quarter due to low overall injection flowrates.

The ethanol dosing frequency in First Quarter 2024 remained twice weekly in the southern IRZ injection wells and once weekly in the northern wells. The amount of ethanol dosed per week in the southern wells was a time-weighted target average of 60 milligrams per liter (mg/L) TOC, which is 60 percent of the nominal dosing design in the Final BOD (CH2M Hill 2015a). The amount of ethanol dosed per week in the northern injection wells was a time-weighted target average of 26 mg/L TOC. A total of 1,242 gallons of ethanol was injected in First Quarter 2024. System runtime, ethanol, and recirculated groundwater injection volumes and flowrates, and average flowrates, are summarized in Table 3.1. An IRZ system operations and non-routine maintenance log is presented as Table 3.2.

[1] In First Quarter 2024, target flowrates for the northern IRZ injection wells were based on the nominal design flowrates specified in the Final BOD (CH2M Hill 2015a). Target flowrates for the southern IRZ injection wells were based on 1.5 times the nominal design flowrates specified in the Final BOD (CH2M Hill 2015a).

Chemical and mechanical well rehabilitation occurred at the following IRZ injection wells in First Quarter 2024: IRZ-17, IRZ-18, IRZ-27, IRZ-29, IRZ-31 (twice), IRZ-33, IRZ-35, and IRZ-37. IRZ-31 was rehabilitated in January and March 2024 due to its poor performance and proximity to the remaining area with Cr6 concentrations above 32 parts per billion (ppb), which requires additional Cr6 treatment. Further discussion regarding Cr6 treatment is provided in the First Quarter 2024 Quarterly Progress Report (Arcadis 2024b). Chemical application at the wellhead continued at two to three well intervals weekly.

Average systemwide uptime was 90 percent in First Quarter 2024[2]. The following notable events occurred in First Quarter 2024:

- To reach the extraction flowrate objectives, all operating injection wells remained online throughout First Quarter 2024, except during a 1- to 2-week period for rehabilitation of select wells.
- From January 16 through 18, 2024, the IRZ system was offline for approximately 42.5 hours due to a shutdown of power to the remedy by the TCS and a subsequent supervisory control and data acquisition (SCADA) software communication failure that required troubleshooting to restore operations.
- Rain infiltration during multiple storm events caused systemwide shutdowns on the following dates:
    - January 22 through 23 (17 hours);
    - February 1 through 2 (18 hours);
    - February 6 through 9 (45 hours);
    - March 15 through 16 (16 hours); and
    - March 30 through 31 (17 hours).
- The system was offline for 42.5 hours from March 1 through 3, 2024 during scheduled TCS maintenance.

# 3.2 NTH IRZ Extraction Well Performance

Extraction wells in Phase 1 of the groundwater remedy include IRZ-9, IRZ-13S, IRZ-13D, IRZ-23, and pilot test well PTI-1D. Extraction well run time, including monthly average extraction well flowrates and average water levels, is documented in Table 3.1. A discussion of observed extraction well performance in First Quarter 2024 is provided in the following subsections.

## 3.2.1 Extraction Well O&M and Specific Capacity Summary

As described in Section 2.2.1 of this report, average specific capacities from July 2022 were established as the baseline specific capacities for extraction wells IRZ-23, IRZ-13S, and IRZ-13D. A baseline specific capacity was established for PTI-1D in Fourth Quarter 2023. A baseline specific capacity has not been established for extraction well IRZ-9 due to limited and inconsistent operation since IRZ system operations began.

Extraction well specific capacities calculated during First Quarter 2024 are documented in Table 3.3. Graphs of average daily specific capacity for extraction wells IRZ-13S, IRZ-13D, IRZ-23, and pilot test well PTI-1D during this period are presented on Figure 3.1. Average daily specific capacities are presented as percentages

[2] Systemwide uptime is calculated using total run time hours (run time in hours are calculated from extraction well operating hours during the month) divided by total possible run time hours in First Quarter 2024.

compared to the baseline specific capacities for each well. Extraction well specific capacity performance to date has been a function of variation in target flow and river stage rather than fouling as follows:

- **IRZ-23** operated throughout First Quarter 2024 with a monthly average of 63 to 65 gpm. The declining specific capacity at IRZ-23 observed from mid-February through March 2024 corresponds with increasing river stage and likely does not indicate fouling. A similar pattern of reduced specific capacity was observed in First Quarter 2023 and, as the river stage settled in Second and Third Quarters 2023, specific capacity improved.
- **IRZ-13S** primarily operated below 80 percent baseline capacity in First Quarter 2024 due to low target flowrates (varying from 8 gpm to 22 gpm throughout the quarter) and do not indicate fouling.
- **IRZ-13D** operated below 80 percent baseline capacity through mid-February 2024 and improved to greater than 90 percent baseline capacity from mid-February 2024 through March 2024. The transducer at IRZ-13D was replaced on February 9, 2024 because the transducer readings did not align with manual water level readings. The reduced specific capacity observed in mid-January through early February at IRZ-13D are a reflection of the uncharacteristically high water levels collected by the old transducer and do not indicate fouling, as shown by the improved specific capacities observed following transducer replacement.
- **PTI-1D** began operation in November 2023 and operated above 90 percent baseline capacity throughout First Quarter 2024.

In accordance with the Final BOD (CH2M Hill 2015a), routine maintenance of extraction wells could include pump-and-surge redevelopment as needed. No routine maintenance was performed on the extraction wells in First Quarter 2024.

### 3.2.2 Extraction Well Inspections

Extraction wells are inspected quarterly at minimum for visible leaks and damage. Any notable damage or equipment needing replacement is identified in Table 3.2. Leak detection switches within the vaults are also used as an additional measure to identify maintenance needs in a timely manner. Notable damage to extraction wells and/or non-routine maintenance during First Quarter 2024 included the following:

- On February 9, 2024, the transducer was replaced at IRZ-13D due to inaccurate water level readings.
- On February 9 through 12, 2024, IRZ-13D was offline due to a broken fitting resulting in a well leak. The leak was contained to the well vault, and the fitting was replaced.
- In First Quarter 2024, 24 spent bag filters were generated from PTI-1D. The filters were replaced twice weekly to maintain a target 30 gpm flowrate at PTI-1D.
- On March 27, 2024, the pump at PTI-1D was inspected, power-washed, then reinstalled.

### 3.2.3 Extraction Well Water Quality

The potential for extraction well fouling resulting from carbon injection is monitored during system operations. This monitoring includes measuring TOC and metal byproduct concentrations at the extraction wells for conditions that may generate well fouling. The First Quarter 2024 Quarterly Progress Report (Arcadis 2024b) provides the extraction well monitoring analytical results; however, the results are also summarized and discussed herein.

Baseline analytical data for extraction wells are provided in Table 3.4 of the First Quarter 2022 Well Performance Report (Arcadis 2022a). Baseline analytical data were collected during December 2021, January 2022, March 2022, and November 2023, when extraction wells were respectively brought online.

Exhibit 3.1 in this section presents the quarterly analytical results from extraction wells IRZ-9, IRZ-23, IRZ-13S, IRZ-13D, and PTI-1D for First Quarter 2024 and includes the baseline analytical results of key indicator parameters as a reference. The extraction wells were sampled in February 2024 (quarterly), and PTI-1D was sampled in January, February, and March 2024 (monthly). Extraction well IRZ-9 was not operated in First Quarter 2024, except for approximately 2.8 hours in February 2024 for quarterly sampling. At the extraction wells, total iron, dissolved iron, and dissolved manganese concentrations were generally lower than the reporting limits or baseline concentrations, except for a low concentration of total iron at IRZ-13D. The low detection does not indicate a consistent trend that would be of concern for causing well fouling. Therefore, no adjustments to operations of the extraction wells were needed in First Quarter 2024. The iron and manganese results for PTI-1D are further discussed in Section 3.2.4.

*Exhibit 3.1. First Quarter 2024 NTH IRZ Extraction Well Analytical Results*

| Extraction Well | Sample Date | Active Time Operating (percent) | TOC: Method 5310B (mg/L) | Total Iron (mg/L) | Dissolved Iron (mg/L) | Dissolved Manganese (mg/L) |
|---|---|---|---|---|---|---|
| IRZ-9 | Baseline: January 2022 | 9 | -- | Less than 0.02 | Less than 0.02 | 0.0027 |
| IRZ-9 | February 2024 | 0.4 | Less than 1 | Less than 0.02 | Less than 0.02 | 0.0025 |
| IRZ-23 | Baseline: December 2021 | 8 | -- | 0.69 | 0.091 J | Less than 0.0005 |
| IRZ-23 | February 2024 | 90 | 2.4 | Less than 0.02 | Less than 0.02 | Less than 0.0005 |
| IRZ-13S | Baseline: March 2022 | 53 | -- | 0.06 | Less than 0.02 | Less than 0.0005 |
| IRZ-13S | February 2024 | 38 | 2.2 | 0.024 | Less than 0.02 | Less than 0.0005 |
| IRZ-13D | Baseline: March 2022 | 53 | -- | Less than 0.02 | 0.059 | 0.062 |
| IRZ-13D | February 2024 | 71 | 2.8 [2.8] | 0.038 [Less than 0.02] | 0.027 [Less than 0.02] | 0.0012 [0.00054] |
| PTI-1D | Baseline: November 2023 | 94 | -- | 1.3 | 1.1 | 4.2 J |
| PTI-1D | January 2024 | 89 | -- | 0.19 | 0.13 | 0.88 |
| PTI-1D | February 2024 | 89 | -- | 0.13 | 0.11 | 0.81 |
| PTI-1D | March 2024 | 87 | -- | 0.12 | 0.12 | 0.74 |

**Notes:**
-- = not analyzed
[ ] = field duplicate results

Table 3.4 includes field parameter data (temperature, pH, specific conductance, turbidity, dissolved oxygen, and redox potential) for extraction wells IRZ-13S, IRZ-13D, IRZ-23, and PTI-1D collected during First Quarter 2024.

### 3.2.4 PTI-1D Operations

Starting on November 2, 2023, PG&E began extracting groundwater from pilot test extraction well PTI-1D, in accordance with the PTI-1D Floodplain Extraction Test Work Plan (Arcadis 2023c), to improve hydraulic control of the Cr6 plume and limit potential eastward migration. PTI-1D has been running at a target extraction flowrate of 30 gpm since it was turned on.

The PTI-1D Floodplain Extraction Test Work Plan outlines the metrics that will be used to evaluate PTI-1D performance and provides indicators that will help determine if operational changes are needed and/or when the PTI-1D test is complete (Arcadis 2023c). In First Quarter 2024, hydrogeologic and analytical data were collected and evaluated against the metrics, as described in the First Quarter 2024 Quarterly Progress Report (Arcadis 2024b). Results relevant to PTI-1D well operations, maintenance, and performance are described below.

- *Sustainable PTI-1D extraction*. Sustainable extraction at PTI-1D is defined by sustained specific capacity and low iron and manganese concentrations. PTI-1D began operation in November 2023, and baseline specific capacity was established using December 2023 data once water levels stabilized following 2 months of sustained operation. Specific capacity at PTI-1D was maintained through the end of February 2024 and improved through March 2024. Specific capacity will continue to be monitored in Second Quarter 2024. PTI-1D was sampled for dissolved manganese and dissolved iron in January, February, and March 2024 to evaluate concentrations during active extraction at PTI-1D. Dissolved manganese and dissolved iron concentrations decreased from November 2023 to December 2023 and remained consistently low throughout First Quarter 2024, at 0.74 to 0.88 mg/L dissolved manganese and 0.11 to 0.13 mg/L dissolved iron (see Exhibit 3.1). In First Quarter 2024, PTI-1D bag filters were checked and replaced (if necessary) twice weekly at minimum to monitor for microbial growth. Bag filter replacements are noted in Table 3.2. Throughout First Quarter 2024, the bag filters looked cleaner as time progressed, consistent with the low dissolved iron and dissolved manganese concentrations in the PTI-1D sample data, which showed less iron and manganese accumulation on the filters. Photos of the bag filters from December 2023 through March 2024 are provided in Appendix D of the First Quarter 2024 Quarterly Progress Report (Arcadis 2024b). The specific capacity results, analytical results, and bag filter observations indicate that operation of PTI-1D is sustainable.

## 3.3 NTH IRZ Injection Well Performance

Injection wells of the Phase 1 groundwater remedy include IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-21, IRZ-25, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, IRZ-37, and IRZ-39. Injection well run time, including average well flowrates and average water levels, is documented in Table 3.1. A discussion of observed injection well performance and procedures implemented in First Quarter 2024 is provided in the following subsections.

### 3.3.1 Well Maintenance Procedures

In the Fourth Quarter 2023 Well Performance Report (Arcadis 2024a), the following adjustments to the well rehabilitation program were discussed:

- Complete quarterly mechanical and chemical rehabilitation at injection wells IRZ-18, IRZ-27, IRZ-31, and IRZ-37 using the updated rehabilitation procedure described in Section 3.3.1.

- Complete mechanical and chemical rehabilitation approximately every 4 to 5 months at injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-20, IRZ-29, IRZ-33, and IRZ-35 using the updated rehabilitation procedure described in Section 3.3.1.
- Implement routine wellhead chemical application (wellhead dosing) using an updated method at injection wells to prolong well performance between rehabilitation events.

Wellhead dosing involves delivering rehabilitation chemicals at the wellhead and is intended to supplement rehabilitation events. As discussed in the Third Quarter 2023 Well Performance Report (Arcadis 2023d), potential advantages of implementing wellhead dosing as an additional well maintenance strategy include the ability to inject reagent further into the filter pack than the original rehabilitation procedure, which did not include jetting, the reduced intrusiveness compared to well rehabilitation, and the ability to complete wellhead dosing at increased frequency compared to well rehabilitation.

In First Quarter 2024, injection wells were wellhead dosed and rehabilitated in accordance with or at increased frequency compared to the Fourth Quarter 2023 recommendations to manage reduced flowrates and specific capacities observed.

- Completed rehabilitation every 2 months at injection well IRZ-31.
- Completed rehabilitation after approximately 3 to 3.5 months of operation at injection wells IRZ-17, IRZ-18, IRZ-27, IRZ-29, IRZ-33, IRZ-35, and IRZ-37.
- Implemented routine wellhead dosing using an updated method at injection wells IRZ-15, IRZ-16 upper, IRZ-17, IRZ-18, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37 to prolong well performance between rehabilitation events. Routine wellhead chemical application was conducted twice during First Quarter 2024 at well intervals IRZ-15 lower, IRZ-17 upper, IRZ-18 upper and lower, IRZ-29 lower, and IRZ-31 lower.

Southern IRZ injection wells were prioritized for rehabilitation because they were dosed with ethanol twice weekly, which contributes to fouling, and operation of those wells at their target flowrates is important to achieve the IRZ treatment objectives. IRZ-31 was rehabilitated in January and March 2024 due to its poor performance and proximity to the remaining area with Cr6 concentration above 32 ppb, which requires additional Cr6 treatment. Further discussion of the IRZ treatment objectives is provided in the First Quarter 2024 Quarterly Progress Report (Arcadis 2024b).

#### 3.3.1.1 Well Rehabilitation Procedure

Rehabilitation for each well involved the following process:

- Confirm injection well is offline.
- Open well vault and begin continuous air monitoring.
- Remove downhole equipment, including packer (if applicable), drop pipe, and pump(s), from injection well. Inspect equipment during removal for corrosion, damage, deposits, and/or odor. Brush, clean, and/or pressure-wash equipment if needed.
- Mechanically clean the well casing and screen section(s) using a double-surge block.
- Jet mixed well chemical solution down the well using a jetting tool, first into the lower well screen, then the upper screen, and surge screen intervals. Well chemical solution includes fresh water, NuWell phosphoric acid, and a NuWell biodispersant. Following jetting, install a dual-swab block brush and swab the screen intervals. Downwell camera surveys and well performance following previous well rehabilitation events suggest that the previous rehabilitation procedures have been effective at treating fouling within the well

casing but ineffective at treating fouling in the filter pack. Adding jetting to the procedure is intended to distribute the chemical solution further into the filter pack and reduce fouling in the filter pack.

- If using a packer, install packer following jetting and swabbing of the chemicals in all screens.
- Allow the chemicals to sit in the well overnight. The following day, check pH of screen intervals.
- Once pH is above 3, remove the packer (if applicable) and conduct mechanical rehabilitation. Add fresh water as needed to adjust pH.
- Pump purge water into backwash piping.
- Reinstall downhole well equipment and restart well.

#### 3.3.1.2 Wellhead Dosing Procedure

Wellhead dosing for each well involved the following process:

- Deliver chemical solution of NuWell phosphoric acid and NuWell biodispersant into the injection well injection pipe using a peristaltic pump. Immediately following injection of chemical solution, inject well with recirculated groundwater from the IRZ system.
- Turn off injection well and let sit overnight.
- The following day, inject 250 gallons of remedy water from the IRZ system into each screen. Bump the backwash pump in each screen interval to collect a pH reading in the sampling port in the metering vault.
    - If pH is below 2.0: Add 250 gallons of remedy water to buffer. Wait 30 minutes, then retest pH using backwash pump.
    - If pH is above 2.0: Purge approximately 2,000 gallons of water from each screen interval. Collect pH readings every 5 minutes until pH shows clear increasing trend. Operation of backwash pump will be monitored from control room, and purge will be stopped when water level decreases below 10 feet above the pump to prevent cycling. Pumping will resume after water level recovers. Collect final pH reading at the end of the 2,000-gallon purge. Additionally, collect pH reading of backwash tank following the 2,000-gallon purge to confirm that pH is within the acceptable range for conditioning (6.5 to 8.5).
- Turn on injection well at target operational flowrate.

In First Quarter 2024, during rehabilitation events, the chemical solution used for wellhead dosing was observed to be sinking to the sump of the injection wells, resulting in acidic conditions in the sump. To reduce acid accumulation in the sumps, the wellhead dosing procedure was modified in March 2024 to deliver the chemical solution of NuWell phosphoric acid and NuWell biodispersant into the injection pipe while also running the injecting well at a flowrate of approximately 5 gpm. The goal of running the injection well at a low flowrate while delivering the chemical solution was to obtain better mixing and limit potential for chemicals to sink into the sump. The new procedure was tested on IRZ-27 and IRZ-35; observations on the revised method will be documented in Second Quarter 2024 once the pH profile has been assessed during routine rehabilitation.

### 3.3.2 Injection Well O&M and Specific Capacity Summary

Injection wells operating during First Quarter 2024 included IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. Injection wells were taken offline at multiple times throughout the quarter for well rehabilitation or wellhead dosing. Injection wells IRZ-21, IRZ-25, and IRZ-39 remained offline throughout the quarter.

Routine injection well maintenance during First Quarter 2024 included backwashing of injection wells during system operation as detailed in Table 3.2. Each operating injection well was backwashed to remove solids that may have accumulated in the well screen and gravel pack during injections. Backwashing occurred three times weekly, an increase from the planned once weekly backwash described in Section 2.1, to proactively manage the well health and water levels at injection wells.

Routine operation for injection wells includes daily monitoring of injection well flowrates and water levels. Corresponding injection well average monthly specific capacities, calculated from First Quarter 2024 operational data, are documented in Table 3.3. Graphs of average daily specific capacities for injection wells operating from Third Quarter 2022 through First Quarter 2024 are plotted on Figures 3.2 through 3.4. Average specific capacities are plotted as percentage values compared to the baseline specific capacities established in 2022 and 2023. In the BOD, values between 80 and 90 percent were considered fair and were specified as values to indicate that backwashing frequency should increase to once every 0.75 week. Values below 80 percent were considered poor and indicated that backwashing frequency should increase or additional well maintenance should be considered to manage fouling. As operations began in 2022 and carried into 2023, the BOD metrics have indicated that the baseline program of once-a-week backwashing and well rehabilitation every 6 months are insufficient. The well maintenance program is being improved in response to the overall specific capacity trends. The specific capacity trends are proving more useful than specific percentage thresholds specified in the BOD for maintaining performance.

The procedures used for well rehabilitation and wellhead dosing are provided in Section 3.3.1. Wellhead dosing and rehabilitation improved well performance in First Quarter 2024, as shown on Figures 3.2 through 3.4. Injection wells IRZ-18 upper, IRZ-27 lower, IRZ-29 upper, IRZ-31, IRZ-33 upper, IRZ-35, and IRZ-37 returned to greater than 80 percent baseline capacity following rehabilitation and then deteriorated over time with continued operation. Injection wells IRZ-17, IRZ-18 lower, IRZ-27 upper, IRZ-29 lower, and IRZ-33 lower remained below 80 percent baseline capacity following rehabilitation; however, specific capacities and flowrates at these wells were improved compared to pre-rehabilitation levels. The improved performance following rehabilitation indicates that the well maintenance program is working to maintain continuous operation of the injection wells.

In Second Quarter 2024, the well rehabilitation procedure will remain the same as that outlined in Section 3.3.1. As operations continue, the maintenance procedures in place continue to be evaluated for further improvement.

### 3.3.3 Injection Well Inspections

Injection wells are inspected quarterly at minimum for visible leaks and damage. Any notable damage or equipment needing replacement is identified in Table 3.2. Leak detection switches within the vaults are also used as an additional measure to identify maintenance needs in a timely manner. Notable damage to injection wells and/or non-routine maintenance during First Quarter 2024 included the following:

- On January 11 through 15, 2024, the backwash drop pipe in injection well IRZ-29 (upper) decoupled below the wellhead flange. The rehabilitation team reconnected drop pipe to backwash pump and IRZ-29 (upper) resumed operation.
- On March 7, 2024, the transducers were replaced at IRZ-17 (lower) and IRZ-18 (lower) due to inaccurate water level data.
- On March 29, 2024, the transducer was replaced at IRZ-29 (lower) due to inaccurate water level data.

### 3.3.4 Injection Well Water Quality

The potential for well fouling at IRZ injection wells as the result of carbon injection is monitored during system operation. Baseline analytical results for each injection well are provided in the First Quarter 2022 Well Performance Report (Arcadis 2022a). Baseline analytical data were collected during December 2021 and January 2022. Future analytical results will be collected as needed for fouling troubleshooting purposes.

# 4 Monitoring Well Performance

Monitoring wells are inspected to determine whether monitoring well maintenance, such as wellhead repair or well screen redevelopment, is needed. Monitoring well inspections include the following:

- Wellhead condition is assessed to determine if well protection features, including the well seal, well vault/protective casing, and concrete pad, are in place and functioning as designed.
- Turbidity indicates that the monitoring well screen and filter pack are intact and functioning.
- Depth to bottom of the well indicates infill (siltation).
- Specific capacity evaluation confirms consistency with sampling standard operating procedures.

This section provides a summary of each of these parameters.

## 4.1 Wellhead Condition

Wellheads are inspected routinely during sampling, and observations are documented in the field tablet. The inspection results are presented in Table 4.1. Overall, the wellheads were in good condition in First Quarter 2024.

## 4.2 Turbidity

In accordance with Section 4.2.4 of the O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a), wells that consistently yield turbidity above the range of 20 to 30 nephelometric turbidity units (NTUs) will undergo additional evaluation to determine if redevelopment is warranted, potentially including evaluation of previous purge data, specific capacity, and longer-term pressure transducer data. Turbidity data are presented in Table 3.4. A summary of monitoring wells that exhibited turbidity above 30 NTUs is provided below.

Monitoring wells MW-60-125, MW-72-080, MW-75-033, MW-82-046, and MW-97-042 yielded turbidity readings greater than 30 NTUs in three consecutive sampling events. These wells are not recommended for redevelopment at this time because the wellhead condition, depth to well bottom, and specific capacity assessments for these wells indicate that well integrity is intact, and siltation is not sufficient to warrant redevelopment.

## 4.3 Depth to Well Bottom

Depths to bottom are measured manually during sampling using a water level meter and compared to the as-constructed well depth and bottom of the screened interval to assess siltation, integrity of the well screen, and integrity of the well casing. Monitoring well depth-to-bottom data are presented in Table 4.2. If the measured well depth for consecutive sampling events suggests that at least 20 percent of the screened interval is silted in, the well will be flagged for further evaluation to determine if redevelopment is necessary. There were no new wells recommended for redevelopment in First Quarter 2024 based on this criterion. Refer to Table 4.2 for ongoing issues of monitoring wells that are not recommended for redevelopment as discussed in the Second Quarter 2023 Well Performance Report (Arcadis 2023b).

## 4.4 Specific Capacity

Purging is conducted at rates between 100 and 500 milliliters per minute, and drawdown at these rates typically ranges from a few hundredths to a few tenths of a foot. If drawdown of greater than 1 foot is observed for a fluvial or alluvial well, the well will be flagged for further evaluation to determine if it needs rehabilitation. Bedrock wells are excluded from this evaluation method due to the potential for larger drawdown during purging. Purging data, including purge rate, drawdown, and calculated specific capacity, are presented in Table 4.2. No wells were identified for potential rehabilitation in First Quarter 2024 based on this criterion.

## 4.5 Response to Monitoring Well Performance Evaluation

The locations of the monitoring wells inspected are shown on Figure 4.1.

As a result of the experiences during redevelopment at MW-28-025, MW-30-030, and MW-39-040 and as discussed in the Third Quarter 2023 Well Performance Report (Arcadis 2023d), the following adjustments were implemented following Second Quarter 2023 redevelopment and will continue moving forward:

- Wells will be redeveloped using a smaller-diameter surge block to reduce the risk of the surge block being lodged between sediment and the well casing.
- Wells located in fluvial sediments (see Well Screen Lithology column in Table 4.2), where sediment infiltration is likely given the screen slot size and/or filter pack combination, will not be redeveloped. Redevelopment of these wells is expected to have a detrimental effect on well performance due to increased potential for sediment infiltration.
- Wells in which significant sediment infiltration occurs during redevelopment will not be considered for future redevelopment.

Based on First Quarter 2024 monitoring well inspection results, no monitoring wells are planned for resurvey or redevelopment in Second Quarter 2024.

# 5 Recommendations and Planned Activities for Next Reporting Period

Phase 1 groundwater remedy operations and the Phase 1 monitoring program will continue in Second Quarter 2024 (April to June 2024) in accordance with the O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a) and Phase 1 Interim Monitoring Plan (Arcadis 2021). Arcadis recommends continuing to implement the modifications to the well maintenance program discussed in the Fourth Quarter 2023 Well Performance Report (Arcadis 2024a):

- Complete quarterly mechanical and chemical rehabilitation at injection wells IRZ-18, IRZ-27, IRZ-31, and IRZ-37 using the updated rehabilitation procedure.
- Complete mechanical and chemical rehabilitation approximately every 4 to 5 months at injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-20, IRZ-29, IRZ-33, and IRZ-35 using the updated rehabilitation procedure.
- Implement routine wellhead chemical application using the updated method at injection wells to prolong well performance between rehabilitation events.

In addition to routine groundwater remedy operations and monitoring, the following activities related to well performance are planned for Second Quarter 2024:

- Continue operation of target extraction and injection wells.
- Continue quarterly extraction and injection well monitoring to evaluate the potential for well fouling of the IRZ injection wells.
- Continue three times weekly injection well backwashing during operation.
- Monitor average specific capacities for remedial and monitoring wells to determine if additional maintenance is needed.
- Continue quarterly inspections of sampled monitoring wells.

Well performance monitoring will be reported in a Second Quarter 2024 Well Performance Report. A Second Quarter 2024 Quarterly Progress Report will also be submitted to document operations and monitoring results in accordance with the O&M Manual (Appendix L, Volume 1; CH2M Hill 2015a).

# 6 References

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Arcadis. 2022c. Second Quarter 2022 Well Performance Report. PG&E Topock Compressor Station, Needles, California. September 28.

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# Tables

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-15 | Upper | Injection | Apr-23 | 249,997 | 18 | 648 | 90 | 6.4 |
| IRZ-15 | Upper | Injection | May-23 | 221,166 | 17 | 599 | 81 | 6.2 |
| IRZ-15 | Upper | Injection | Jun-23 | 219,524 | 20 | 615 | 85 | 5.9 |
| IRZ-15 | Upper | Injection | Jul-23 | 241,926 | 16 | 644 | 87 | 6.3 |
| IRZ-15 | Upper | Injection | Aug-23 | 189,775 | 17 | 487 | 65 | 6.5 |
| IRZ-15 | Upper | Injection | Sep-23 | 246,561 | 16 | 640 | 89 | 6.4 |
| IRZ-15 | Upper | Injection | Oct-23 | 195,641 | 13 | 719 | 97 | 4.5 |
| IRZ-15 | Upper | Injection | Nov-23 | 27,337 | 0.93 | 246 | 34 | 1.9 |
| IRZ-15 | Upper | Injection | Dec-23 | 595,215 | 41 | 659 | 89 | 15 |
| IRZ-15 | Upper | Injection | Jan-24 | 526,585 | 35 | 646 | 87 | 14 |
| IRZ-15 | Upper | Injection | Feb-24 | 134,661 | 7.7 | 573 | 82 | 3.9 |
| IRZ-15 | Upper | Injection | Mar-24 | 113,140 | 8.3 | 613 | 82 | 3.1 |
| IRZ-15 | Lower | Injection | Apr-23 | 204,824 | 16 | 260 | 36 | 13 |
| IRZ-15 | Lower | Injection | May-23 | 503,129 | 36 | 599 | 81 | 14 |
| IRZ-15 | Lower | Injection | Jun-23 | 636,661 | 58 | 616 | 86 | 17 |
| IRZ-15 | Lower | Injection | Jul-23 | 579,185 | 39 | 644 | 87 | 15 |
| IRZ-15 | Lower | Injection | Aug-23 | 388,099 | 34 | 485 | 65 | 13 |
| IRZ-15 | Lower | Injection | Sep-23 | 506,905 | 34 | 637 | 88 | 13 |
| IRZ-15 | Lower | Injection | Oct-23 | 591,197 | 42 | 719 | 97 | 14 |
| IRZ-15 | Lower | Injection | Nov-23 | 311,294 | 17 | 389 | 54 | 13 |
| IRZ-15 | Lower | Injection | Dec-23 | 254,388 | 17 | 660 | 89 | 6.4 |
| IRZ-15 | Lower | Injection | Jan-24 | 199,870 | 13 | 365 | 49 | 9 |
| IRZ-15 | Lower | Injection | Feb-24 | 595,234 | 44 | 629 | 90 | 16 |
| IRZ-15 | Lower | Injection | Mar-24 | 435,967 | 31 | 657 | 88 | 11 |
| IRZ-16 | Upper | Injection | Apr-23 | 202,478 | 25 | 696 | 97 | 4.8 |
| IRZ-16 | Upper | Injection | May-23 | 117,004 | 9.2 | 663 | 89 | 2.9 |
| IRZ-16 | Upper | Injection | Jun-23 | 114,041 | 16 | 651 | 90 | 2.9 |
| IRZ-16 | Upper | Injection | Jul-23 | 41,861 | 2.3 | 219 | 29 | 3.2 |
| IRZ-16 | Upper | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-16 | Upper | Injection | Sep-23 | 26,346 | 2.7 | 106 | 15 | 4.1 |
| IRZ-16 | Upper | Injection | Oct-23 | 131,508 | 10 | 719 | 97 | 3.0 |
| IRZ-16 | Upper | Injection | Nov-23 | 72,721 | 5.0 | 689 | 96 | 1.8 |
| IRZ-16 | Upper | Injection | Dec-23 | 132,729 | 6.6 | 439 | 59 | 5.0 |
| IRZ-16 | Upper | Injection | Jan-24 | 202,327 | 16 | 663 | 89 | 5.1 |
| IRZ-16 | Upper | Injection | Feb-24 | 181,968 | 14 | 623 | 90 | 4.9 |
| IRZ-16 | Upper | Injection | Mar-24 | 162,238 | 11 | 618 | 83 | 4.4 |
| IRZ-16 | Lower | Injection | Apr-23 | 437,161 | 53 | 709 | 98 | 10 |
| IRZ-16 | Lower | Injection | May-23 | 447,822 | 57 | 729 | 98 | 10 |
| IRZ-16 | Lower | Injection | Jun-23 | 417,451 | 56 | 695 | 97 | 10 |
| IRZ-16 | Lower | Injection | Jul-23 | 438,115 | 46 | 693 | 93 | 11 |
| IRZ-16 | Lower | Injection | Aug-23 | 322,725 | 34 | 513 | 69 | 10 |
| IRZ-16 | Lower | Injection | Sep-23 | 404,893 | 27 | 645 | 90 | 10 |
| IRZ-16 | Lower | Injection | Oct-23 | 442,529 | 33 | 717 | 96 | 10 |
| IRZ-16 | Lower | Injection | Nov-23 | 299,897 | 18 | 700 | 97 | 7.1 |
| IRZ-16 | Lower | Injection | Dec-23 | 258,579 | 13 | 447 | 60 | 10 |
| IRZ-16 | Lower | Injection | Jan-24 | 399,795 | 32 | 645 | 87 | 10 |
| IRZ-16 | Lower | Injection | Feb-24 | 377,871 | 27 | 627 | 90 | 10 |
| IRZ-16 | Lower | Injection | Mar-24 | 405,869 | 28 | 651 | 88 | 10 |
| IRZ-17 | Upper | Injection | Apr-23 | 267,131 | 31 | 709 | 98 | 6.3 |

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-17 | Upper | Injection | May-23 | 223,798 | 28 | 730 | 98 | 5.1 |
| IRZ-17 | Upper | Injection | Jun-23 | 186,192 | 27 | 717 | 100 | 4.3 |
| IRZ-17 | Upper | Injection | Jul-23 | 66,365 | 3.1 | 226 | 30 | 4.9 |
| IRZ-17 | Upper | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-17 | Upper | Injection | Sep-23 | 36,626 | 3.5 | 110 | 15 | 5.5 |
| IRZ-17 | Upper | Injection | Oct-23 | 246,030 | 18 | 719 | 97 | 5.7 |
| IRZ-17 | Upper | Injection | Nov-23 | 135,604 | 7.9 | 695 | 97 | 3.3 |
| IRZ-17 | Upper | Injection | Dec-23 | 137,332 | 8.6 | 401 | 54 | 5.7 |
| IRZ-17 | Upper | Injection | Jan-24 | 264,408 | 21 | 643 | 86 | 6.9 |
| IRZ-17 | Upper | Injection | Feb-24 | 133,407 | 10 | 370 | 53 | 6.0 |
| IRZ-17 | Upper | Injection | Mar-24 | 31,250 | 0.0 | 89 | 12 | 5.9 |
| IRZ-17 | Lower | Injection | Apr-23 | 204,824 | 24 | 709 | 98 | 4.8 |
| IRZ-17 | Lower | Injection | May-23 | 254,746 | 32 | 731 | 98 | 5.8 |
| IRZ-17 | Lower | Injection | Jun-23 | 337,549 | 49 | 718 | 100 | 7.8 |
| IRZ-17 | Lower | Injection | Jul-23 | 320,752 | 33 | 694 | 93 | 7.7 |
| IRZ-17 | Lower | Injection | Aug-23 | 242,520 | 25 | 511 | 69 | 7.9 |
| IRZ-17 | Lower | Injection | Sep-23 | 298,115 | 20 | 644 | 89 | 7.7 |
| IRZ-17 | Lower | Injection | Oct-23 | 387,236 | 29 | 719 | 97 | 9.0 |
| IRZ-17 | Lower | Injection | Nov-23 | 373,379 | 22 | 718 | 100 | 8.7 |
| IRZ-17 | Lower | Injection | Dec-23 | 252,383 | 15 | 390 | 52 | 11 |
| IRZ-17 | Lower | Injection | Jan-24 | 314,111 | 30 | 595 | 80 | 8.8 |
| IRZ-17 | Lower | Injection | Feb-24 | 322,998 | 23 | 617 | 89 | 8.7 |
| IRZ-17 | Lower | Injection | Mar-24 | 248,809 | 12 | 447 | 60 | 9.3 |
| IRZ-18 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-18 | Upper | Injection | May-23 | 5,070 | -- | 13 | 1.7 | 6.5 |
| IRZ-18 | Upper | Injection | Jun-23 | 103,561 | 16 | 544 | 76 | 3.2 |
| IRZ-18 | Upper | Injection | Jul-23 | 14,210 | -- | 108 | 15 | 2.2 |
| IRZ-18 | Upper | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-18 | Upper | Injection | Sep-23 | 3,430 | -- | 22 | 3.1 | 2.6 |
| IRZ-18 | Upper | Injection | Oct-23 | 74,838 | 7.7 | 210 | 28 | 5.9 |
| IRZ-18 | Upper | Injection | Nov-23 | 117,583 | 7.2 | 670 | 93 | 2.9 |
| IRZ-18 | Upper | Injection | Dec-23 | 73,900 | 2.9 | 497 | 67 | 2.5 |
| IRZ-18 | Upper | Injection | Jan-24 | 125,112 | 9.1 | 401 | 54 | 5.2 |
| IRZ-18 | Upper | Injection | Feb-24 | 186,092 | 15 | 531 | 76 | 5.8 |
| IRZ-18 | Upper | Injection | Mar-24 | 70,178 | 2.7 | 449 | 60 | 2.6 |
| IRZ-18 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-18 | Lower | Injection | May-23 | 9,360 | -- | 13 | 1.7 | 12 |
| IRZ-18 | Lower | Injection | Jun-23 | 363,173 | 62 | 562 | 78 | 11 |
| IRZ-18 | Lower | Injection | Jul-23 | 409,395 | 42 | 696 | 94 | 10 |
| IRZ-18 | Lower | Injection | Aug-23 | 235,470 | 25 | 508 | 68 | 7.7 |
| IRZ-18 | Lower | Injection | Sep-23 | 275,619 | 19 | 625 | 87 | 7.3 |
| IRZ-18 | Lower | Injection | Oct-23 | 258,762 | 19 | 508 | 68 | 8.5 |
| IRZ-18 | Lower | Injection | Nov-23 | 436,156 | 28 | 680 | 94 | 11 |
| IRZ-18 | Lower | Injection | Dec-23 | 375,146 | 23 | 720 | 97 | 8.7 |
| IRZ-18 | Lower | Injection | Jan-24 | 255,850 | 23 | 488 | 66 | 8.7 |
| IRZ-18 | Lower | Injection | Feb-24 | 187,723 | 14 | 485 | 70 | 6.5 |
| IRZ-18 | Lower | Injection | Mar-24 | 208,844 | 15 | 652 | 88 | 5.3 |
| IRZ-20 | Upper | Injection | Apr-23 | 254,618 | 30 | 705 | 98 | 6.0 |
| IRZ-20 | Upper | Injection | May-23 | 176,899 | 23 | 548 | 74 | 5.4 |

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-20 | Upper | Injection | Jun-23 | 127,028 | 10 | 533 | 74 | 4.0 |
| IRZ-20 | Upper | Injection | Jul-23 | 16,061 | -- | 108 | 15 | 2.5 |
| IRZ-20 | Upper | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-20 | Upper | Injection | Sep-23 | 78,937 | 6.3 | 263 | 37 | 5.0 |
| IRZ-20 | Upper | Injection | Oct-23 | 187,847 | 13 | 719 | 97 | 4.4 |
| IRZ-20 | Upper | Injection | Nov-23 | 83,967 | 5.2 | 661 | 92 | 2.1 |
| IRZ-20 | Upper | Injection | Dec-23 | 105,338 | 3.6 | 434 | 58 | 4.0 |
| IRZ-20 | Upper | Injection | Jan-24 | 211,096 | 17 | 661 | 89 | 5.3 |
| IRZ-20 | Upper | Injection | Feb-24 | 210,565 | 15 | 627 | 90 | 5.6 |
| IRZ-20 | Upper | Injection | Mar-24 | 217,352 | 15 | 651 | 88 | 5.6 |
| IRZ-20 | Lower | Injection | Apr-23 | 347,887 | 42 | 679 | 94 | 8.5 |
| IRZ-20 | Lower | Injection | May-23 | 256,876 | 33 | 547 | 74 | 7.8 |
| IRZ-20 | Lower | Injection | Jun-23 | 320,118 | 49 | 619 | 86 | 8.6 |
| IRZ-20 | Lower | Injection | Jul-23 | 369,320 | 38 | 694 | 93 | 8.9 |
| IRZ-20 | Lower | Injection | Aug-23 | 277,611 | 29 | 507 | 68 | 9.1 |
| IRZ-20 | Lower | Injection | Sep-23 | 358,400 | 24 | 636 | 88 | 9.4 |
| IRZ-20 | Lower | Injection | Oct-23 | 435,625 | 32 | 719 | 97 | 10 |
| IRZ-20 | Lower | Injection | Nov-23 | 447,303 | 26 | 718 | 100 | 10 |
| IRZ-20 | Lower | Injection | Dec-23 | 347,132 | 22 | 570 | 77 | 10 |
| IRZ-20 | Lower | Injection | Jan-24 | 408,809 | 33 | 662 | 89 | 10 |
| IRZ-20 | Lower | Injection | Feb-24 | 372,744 | 26 | 615 | 88 | 10 |
| IRZ-20 | Lower | Injection | Mar-24 | 391,602 | 28 | 637 | 86 | 10 |
| IRZ-21 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Jul-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Sep-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Nov-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Dec-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Jan-24 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Feb-24 | -- | -- | -- | -- | -- |
| IRZ-21 | Upper | Injection | Mar-24 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Jul-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Sep-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Nov-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Dec-23 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Jan-24 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Feb-24 | -- | -- | -- | -- | -- |
| IRZ-21 | Lower | Injection | Mar-24 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Jun-23 | -- | -- | -- | -- | -- |

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-25 | Upper / Upper Middle | Injection | Jul-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Sep-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Nov-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Dec-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Jan-24 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Feb-24 | -- | -- | -- | -- | -- |
| IRZ-25 | Upper / Upper Middle | Injection | Mar-24 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Jul-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Sep-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Nov-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Dec-23 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Jan-24 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Feb-24 | -- | -- | -- | -- | -- |
| IRZ-25 | Lower | Injection | Mar-24 | -- | -- | -- | -- | -- |
| IRZ-27 | Upper / Upper Middle | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-27 | Upper / Upper Middle | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-27 | Upper / Upper Middle | Injection | Jun-23 | 311,822 | 46 | 536 | 74 | 9.7 |
| IRZ-27 | Upper / Upper Middle | Injection | Jul-23 | 354,065 | 40 | 692 | 93 | 8.5 |
| IRZ-27 | Upper / Upper Middle | Injection | Aug-23 | 179,084 | 19 | 508 | 68 | 5.9 |
| IRZ-27 | Upper / Upper Middle | Injection | Sep-23 | 100,528 | 4.0 | 286 | 40 | 5.9 |
| IRZ-27 | Upper / Upper Middle | Injection | Oct-23 | 308,131 | 24 | 523 | 70 | 9.8 |
| IRZ-27 | Upper / Upper Middle | Injection | Nov-23 | 326,599 | 26 | 602 | 84 | 9.0 |
| IRZ-27 | Upper / Upper Middle | Injection | Dec-23 | 209,544 | 23 | 710 | 95 | 4.9 |
| IRZ-27 | Upper / Upper Middle | Injection | Jan-24 | 73,602 | 7.2 | 467 | 63 | 2.6 |
| IRZ-27 | Upper / Upper Middle | Injection | Feb-24 | 175,391 | 26 | 511 | 73 | 5.7 |
| IRZ-27 | Upper / Upper Middle | Injection | Mar-24 | 119,236 | 12 | 561 | 75 | 3.5 |
| IRZ-27 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-27 | Lower | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-27 | Lower | Injection | Jun-23 | 202,855 | 43 | 480 | 67 | 7.0 |
| IRZ-27 | Lower | Injection | Jul-23 | 335,696 | 36 | 692 | 93 | 8.1 |
| IRZ-27 | Lower | Injection | Aug-23 | 244,538 | 24 | 510 | 69 | 8.0 |
| IRZ-27 | Lower | Injection | Sep-23 | 129,156 | 4.8 | 287 | 40 | 7.5 |
| IRZ-27 | Lower | Injection | Oct-23 | 247,371 | 19 | 524 | 70 | 7.9 |
| IRZ-27 | Lower | Injection | Nov-23 | 300,544 | 29 | 667 | 93 | 7.5 |
| IRZ-27 | Lower | Injection | Dec-23 | 317,168 | 34 | 731 | 98 | 7.2 |
| IRZ-27 | Lower | Injection | Jan-24 | 238,843 | 26 | 547 | 74 | 7.3 |
| IRZ-27 | Lower | Injection | Feb-24 | 252,176 | 35 | 510 | 73 | 8.2 |
| IRZ-27 | Lower | Injection | Mar-24 | 261,105 | 30 | 626 | 84 | 7.0 |
| IRZ-29 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-29 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-29 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-29 | Upper | Injection | Jul-23 | 194,939 | 27 | 447 | 60 | 7.3 |
| IRZ-29 | Upper | Injection | Aug-23 | 221,466 | 23 | 509 | 68 | 7.3 |
| IRZ-29 | Upper | Injection | Sep-23 | 163,459 | 9.4 | 393 | 55 | 6.9 |
| IRZ-29 | Upper | Injection | Oct-23 | 312,875 | 23 | 717 | 96 | 7.3 |
| IRZ-29 | Upper | Injection | Nov-23 | 144,061 | 9.6 | 315 | 44 | 7.6 |
| IRZ-29 | Upper | Injection | Dec-23 | 337,939 | 36 | 725 | 97 | 7.8 |
| IRZ-29 | Upper | Injection | Jan-24 | 261,966 | 25 | 614 | 83 | 7.1 |
| IRZ-29 | Upper | Injection | Feb-24 | 94,913 | 22 | 229 | 33 | 6.9 |
| IRZ-29 | Upper | Injection | Mar-24 | 262,506 | 34 | 635 | 85 | 6.9 |
| IRZ-29 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-29 | Lower | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-29 | Lower | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-29 | Lower | Injection | Jul-23 | 251,875 | 35 | 446 | 60 | 9.4 |
| IRZ-29 | Lower | Injection | Aug-23 | 234,683 | 25 | 508 | 68 | 7.7 |
| IRZ-29 | Lower | Injection | Sep-23 | 199,745 | 11 | 392 | 54 | 8.5 |
| IRZ-29 | Lower | Injection | Oct-23 | 428,198 | 32 | 717 | 96 | 10 |
| IRZ-29 | Lower | Injection | Nov-23 | 190,876 | 13 | 316 | 44 | 10 |
| IRZ-29 | Lower | Injection | Dec-23 | 468,707 | 50 | 726 | 98 | 11 |
| IRZ-29 | Lower | Injection | Jan-24 | 316,068 | 34 | 525 | 71 | 10 |
| IRZ-29 | Lower | Injection | Feb-24 | 105,233 | 25 | 229 | 33 | 7.7 |
| IRZ-29 | Lower | Injection | Mar-24 | 232,597 | 28 | 604 | 81 | 6.4 |
| IRZ-31 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-31 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-31 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-31 | Upper | Injection | Jul-23 | 359,914 | 36 | 606 | 81 | 9.9 |
| IRZ-31 | Upper | Injection | Aug-23 | 157,794 | 18 | 508 | 68 | 5.2 |
| IRZ-31 | Upper | Injection | Sep-23 | 112,490 | 6.5 | 392 | 54 | 4.8 |
| IRZ-31 | Upper | Injection | Oct-23 | 152,899 | 11 | 418 | 56 | 6.1 |
| IRZ-31 | Upper | Injection | Nov-23 | 378,769 | 42 | 708 | 98 | 8.9 |
| IRZ-31 | Upper | Injection | Dec-23 | 251,716 | 20 | 673 | 90 | 6.2 |
| IRZ-31 | Upper | Injection | Jan-24 | 99,087 | 9.3 | 282 | 38 | 5.9 |
| IRZ-31 | Upper | Injection | Feb-24 | 257,882 | 42 | 577 | 83 | 7.4 |
| IRZ-31 | Upper | Injection | Mar-24 | 118,726 | 17 | 440 | 59 | 4.5 |
| IRZ-31 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-31 | Lower | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-31 | Lower | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-31 | Lower | Injection | Jul-23 | 299,528 | 38 | 589 | 79 | 8.5 |
| IRZ-31 | Lower | Injection | Aug-23 | 236,772 | 25 | 508 | 68 | 7.8 |
| IRZ-31 | Lower | Injection | Sep-23 | 198,854 | 11 | 387 | 54 | 8.6 |
| IRZ-31 | Lower | Injection | Oct-23 | 235,280 | 17 | 443 | 60 | 8.9 |
| IRZ-31 | Lower | Injection | Nov-23 | 360,762 | 40 | 709 | 98 | 8.5 |
| IRZ-31 | Lower | Injection | Dec-23 | 324,226 | 24 | 675 | 91 | 8.0 |
| IRZ-31 | Lower | Injection | Jan-24 | 215,030 | 24 | 379 | 51 | 9.5 |
| IRZ-31 | Lower | Injection | Feb-24 | 266,630 | 41 | 603 | 87 | 7.4 |
| IRZ-31 | Lower | Injection | Mar-24 | 118,766 | 15 | 414 | 56 | 4.8 |
| IRZ-33 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-33 | Upper | Injection | Jul-23 | 117,385 | 11 | 349 | 47 | 5.6 |
| IRZ-33 | Upper | Injection | Aug-23 | 182,385 | 18 | 507 | 68 | 6.0 |
| IRZ-33 | Upper | Injection | Sep-23 | 138,505 | 8.0 | 390 | 54 | 5.9 |
| IRZ-33 | Upper | Injection | Oct-23 | 258,142 | 19 | 714 | 96 | 6.0 |
| IRZ-33 | Upper | Injection | Nov-23 | 151,009 | 17 | 410 | 57 | 6.1 |
| IRZ-33 | Upper | Injection | Dec-23 | 260,843 | 28 | 725 | 97 | 6.0 |
| IRZ-33 | Upper | Injection | Jan-24 | 201,977 | 20 | 612 | 82 | 5.5 |
| IRZ-33 | Upper | Injection | Feb-24 | 80,779 | 16 | 247 | 35 | 5.5 |
| IRZ-33 | Upper | Injection | Mar-24 | 197,813 | 26 | 623 | 84 | 5.3 |
| IRZ-33 | Lower | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Lower | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Lower | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Lower | Injection | Jul-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Lower | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-33 | Lower | Injection | Sep-23 | 124,178 | 8.0 | 330 | 46 | 6.3 |
| IRZ-33 | Lower | Injection | Oct-23 | 256,482 | 20 | 714 | 96 | 6.0 |
| IRZ-33 | Lower | Injection | Nov-23 | 147,344 | 18 | 409 | 57 | 6.0 |
| IRZ-33 | Lower | Injection | Dec-23 | 251,896 | 28 | 723 | 97 | 5.8 |
| IRZ-33 | Lower | Injection | Jan-24 | 159,876 | 13 | 479 | 64 | 5.6 |
| IRZ-33 | Lower | Injection | Feb-24 | 82,951 | 16 | 259 | 37 | 5.3 |
| IRZ-33 | Lower | Injection | Mar-24 | 160,957 | 22 | 647 | 87 | 4.1 |
| IRZ-35 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-35 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-35 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-35 | Upper | Injection | Jul-23 | 183,289 | 27 | 469 | 63 | 6.5 |
| IRZ-35 | Upper | Injection | Aug-23 | 184,739 | 21 | 484 | 65 | 6.4 |
| IRZ-35 | Upper | Injection | Sep-23 | 158,865 | 9.1 | 387 | 54 | 6.8 |
| IRZ-35 | Upper | Injection | Oct-23 | 227,212 | 14 | 515 | 69 | 7.4 |
| IRZ-35 | Upper | Injection | Nov-23 | 299,081 | 35 | 680 | 94 | 7.3 |
| IRZ-35 | Upper | Injection | Dec-23 | 270,454 | 28 | 690 | 93 | 6.5 |
| IRZ-35 | Upper | Injection | Jan-24 | 196,271 | 25 | 494 | 66 | 6.6 |
| IRZ-35 | Upper | Injection | Feb-24 | 173,669 | 29 | 384 | 55 | 7.5 |
| IRZ-35 | Upper | Injection | Mar-24 | 155,542 | 17 | 541 | 73 | 4.8 |
| IRZ-37 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-37 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-37 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-37 | Upper | Injection | Jul-23 | 122,465 | 17 | 469 | 63 | 4.4 |
| IRZ-37 | Upper | Injection | Aug-23 | 92,012 | 10 | 501 | 67 | 3.1 |
| IRZ-37 | Upper | Injection | Sep-23 | 51,602 | 3.4 | 287 | 40 | 3.0 |
| IRZ-37 | Upper | Injection | Oct-23 | 119,214 | 7.4 | 493 | 66 | 4.0 |
| IRZ-37 | Upper | Injection | Nov-23 | 178,634 | 20 | 713 | 99 | 4.2 |
| IRZ-37 | Upper | Injection | Dec-23 | 165,952 | 15 | 678 | 91 | 4.1 |
| IRZ-37 | Upper | Injection | Jan-24 | 98,666 | 7.6 | 512 | 69 | 3.2 |
| IRZ-37 | Upper | Injection | Feb-24 | 52,051 | 8.2 | 243 | 35 | 3.6 |
| IRZ-37 | Upper | Injection | Mar-24 | 114,652 | 14 | 634 | 85 | 3.0 |
| IRZ-39 | Upper | Injection | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | May-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Jul-23 | -- | -- | -- | -- | -- |

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**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-39 | Upper | Injection | Aug-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Sep-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Nov-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Dec-23 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Jan-24 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Feb-24 | -- | -- | -- | -- | -- |
| IRZ-39 | Upper | Injection | Mar-24 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | May-23 | 1,231 | -- | 1.0 | 0.13 | 21 |
| IRZ-9 | Upper | Extraction | Jun-23 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | Jul-23 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | Aug-23 | 7,197 | -- | 1.7 | 0.23 | 71 |
| IRZ-9 | Upper | Extraction | Sep-23 | 21,671 | -- | 4.3 | 0.60 | 84 |
| IRZ-9 | Upper | Extraction | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | Nov-23 | 6,757 | -- | 2.6 | 0.36 | 43 |
| IRZ-9 | Upper | Extraction | Dec-23 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | Jan-24 | -- | -- | -- | -- | -- |
| IRZ-9 | Upper | Extraction | Feb-24 | 7,888 | -- | 2.8 | 0.40 | 47 |
| IRZ-9 | Upper | Extraction | Mar-24 | -- | -- | -- | -- | -- |
| IRZ-13D | Lower | Extraction | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-13D | Lower | Extraction | May-23 | 254 | -- | 1.0 | 0.13 | 4.2 |
| IRZ-13D | Lower | Extraction | Jun-23 | 279,365 | -- | 302 | 42 | 15 |
| IRZ-13D | Lower | Extraction | Jul-23 | 991,621 | -- | 612 | 82 | 27 |
| IRZ-13D | Lower | Extraction | Aug-23 | 739,443 | -- | 508 | 68 | 24 |
| IRZ-13D | Lower | Extraction | Sep-23 | 504,512 | -- | 297 | 41 | 28 |
| IRZ-13D | Lower | Extraction | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-13D | Lower | Extraction | Nov-23 | 377,061 | -- | 639 | 89 | 10 |
| IRZ-13D | Lower | Extraction | Dec-23 | 672,334 | -- | 659 | 89 | 17 |
| IRZ-13D | Lower | Extraction | Jan-24 | 535,371 | -- | 487 | 65 | 18 |
| IRZ-13D | Lower | Extraction | Feb-24 | 461,162 | -- | 493 | 71 | 16 |
| IRZ-13D | Lower | Extraction | Mar-24 | 298,994 | -- | 362 | 49 | 14 |
| IRZ-13S | Upper | Extraction | Apr-23 | -- | -- | -- | -- | -- |
| IRZ-13S | Upper | Extraction | May-23 | 7,568 | -- | 12 | 1.6 | 11 |
| IRZ-13S | Upper | Extraction | Jun-23 | 79,102 | -- | 127 | 18 | 10 |
| IRZ-13S | Upper | Extraction | Jul-23 | 341,748 | -- | 320 | 43 | 18 |
| IRZ-13S | Upper | Extraction | Aug-23 | 237,930 | -- | 310 | 42 | 13 |
| IRZ-13S | Upper | Extraction | Sep-23 | 336,885 | -- | 260 | 36 | 22 |
| IRZ-13S | Upper | Extraction | Oct-23 | -- | -- | -- | -- | -- |
| IRZ-13S | Upper | Extraction | Nov-23 | 540,645 | -- | 641 | 89 | 14 |
| IRZ-13S | Upper | Extraction | Dec-23 | 610,586 | -- | 629 | 85 | 16 |
| IRZ-13S | Upper | Extraction | Jan-24 | 340,508 | -- | 357 | 48 | 16 |
| IRZ-13S | Upper | Extraction | Feb-24 | 256,563 | -- | 261 | 38 | 16 |
| IRZ-13S | Upper | Extraction | Mar-24 | 92,363 | -- | 148 | 20 | 10 |
| IRZ-23 | Lower | Extraction | Apr-23 | 2,058,390 | -- | 708 | 98 | 48 |
| IRZ-23 | Lower | Extraction | May-23 | 2,126,924 | -- | 728 | 98 | 49 |
| IRZ-23 | Lower | Extraction | Jun-23 | 3,033,291 | -- | 718 | 100 | 70 |
| IRZ-23 | Lower | Extraction | Jul-23 | 3,178,936 | -- | 695 | 93 | 76 |
| IRZ-23 | Lower | Extraction | Aug-23 | 2,272,188 | -- | 508 | 68 | 75 |

**Table 3.1**
**Summary of NTH IRZ Well Operations**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Recirculated Groundwater Volume (gal) | Ethanol Volume (gal) | Total Hours Operating (hours) | Active Time Operating (percent) | Average Flow Rate When Operating (gpm) |
|---|---|---|---|---|---|---|---|---|
| IRZ-23 | Lower | Extraction | Sep-23 | 2,704,317 | -- | 394 | 55 | 114 |
| IRZ-23 | Lower | Extraction | Oct-23 | 5,550,485 | -- | 719 | 97 | 129 |
| IRZ-23 | Lower | Extraction | Nov-23 | 2,555,679 | -- | 710 | 99 | 60 |
| IRZ-23 | Lower | Extraction | Dec-23 | 2,659,019 | -- | 730 | 98 | 61 |
| IRZ-23 | Lower | Extraction | Jan-24 | 2,605,208 | -- | 663 | 89 | 65 |
| IRZ-23 | Lower | Extraction | Feb-24 | 2,386,651 | -- | 623 | 90 | 64 |
| IRZ-23 | Lower | Extraction | Mar-24 | 2,470,525 | -- | 652 | 88 | 63 |
| PTI-1D | Lower | Extraction | Oct-23 | -- | -- | -- | -- | -- |
| PTI-1D | Lower | Extraction | Nov-23 | 1,218,035 | -- | 679 | 94 | 30 |
| PTI-1D | Lower | Extraction | Dec-23 | 1,278,946 | -- | 735 | 99 | 29 |
| PTI-1D | Lower | Extraction | Jan-24 | 1,134,482 | -- | 664 | 89 | 28 |
| PTI-1D | Lower | Extraction | Feb-24 | 1,019,004 | -- | 618 | 89 | 27 |
| PTI-1D | Lower | Extraction | Mar-24 | 1,061,465 | -- | 649 | 87 | 27 |

**Abbreviations:**
gal = gallons
gpm = gallons per minute

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 1/3/2024 | -- | PTI-1D filter replaced. | -- |
| 1/3/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/3/2024 | 0.1 | IRZ system offline. | Outage occurred during maintenance on TCS generators. |
| 1/4/2024 | -- | Ethanol dosing occurred. | -- |
| 1/4/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 1/4/2024 through 1/5/2024 | -- | Dosed IRZ injection well IRZ-15 (lower) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | Chemicals used are for well maintenance to manage fouling. |
| 1/5/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/8/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/9/2024 | -- | PTI-1D filter replaced. | -- |
| 1/9/2024 | -- | Ethanol dosing occurred. | -- |
| 1/10/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-20, IRZ-27, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/10/2024 through 1/11/2024 | -- | Dosed IRZ injection wells IRZ-17 (lower) and IRZ-29 with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 1/11/2024 through 1/15/2024 | -- | Backwash drop pipe in injection well IRZ-29 (upper) decoupled below wellhead flange. Rehabilitation team reconnected drop pipe to backwash pump and IRZ-29 (upper) resumed operation. | -- |
| 1/10/2024 through 1/18/2024 | -- | Injection well IRZ-18 offline for rehabilitation. | Caps on check valve pass through were corroded and replaced with stainless steel. |
| 1/11/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 1/12/2024 | -- | PTI-1D filter replaced. | -- |
| 1/12/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-20, IRZ-27, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/13/2024 through 1/25/2024 | -- | Injection well IRZ-31 offline for rehabilitation. | Caps on check valve pass through were corroded and replaced with stainless steel. |
| 1/15/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-20, IRZ-27, IRZ-29, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/16/2024 | -- | PTI-1D filter replaced. | -- |
| 1/16/2024 through 1/19/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 1/16/2024 | -- | Ethanol dosing occurred. | -- |
| 1/16/2024 through 1/18/2024 | 1.8 | IRZ system offline. | TCS load shedding. Power loss on 1/16/2024 resulted in SCADA software communication failure that required troubleshooting to restore operations. |
| 1/17/2024 | -- | IRZ system running using 30 gpm from PTI-1D and 25 gpm being reinjected from CWFT. PTI-1D and reinjection pump operated for approximately 4.8 hours. | Limited extraction well operation while resolving SCADA communication failures at IRZ-13S, IRZ-13D, and IRZ-23 caused by power loss on 1/16. |
| 1/19/2024 | -- | PTI-1D filter replaced. | -- |
| 1/19/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-20, IRZ-27, IRZ-29, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/22/2024 through 1/25/2024 | -- | Dosed IRZ injection well IRZ-37 with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 1/22/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 1/22/2024 to 1/23/2024 | 1.0 | IRZ system shutdown. | Rain infiltration. |
| 1/23/2024 | -- | PTI-1D filter replaced. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 1/23/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 1/24/2024 through 1/26/2024 | -- | Dosed IRZ injection well IRZ-15 (lower) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 1/24/2024 through 2/1/2024 | -- | Dosed IRZ injection well IRZ-33 with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 1/24/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, and IRZ-35. | -- |
| 1/25/2024 | -- | Ethanol dosing occurred. | -- |
| 1/26/2024 through 2/6/2024 | -- | Injection well IRZ-27 offline for rehabilitation. | Caps on check valve pass through were corroded and replaced with stainless steel. |
| 1/26/2024 | -- | PTI-1D filter replaced. | -- |
| 1/26/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-29, and IRZ-35. | -- |
| 1/27/2024 through 2/11/2024 | -- | Injection well IRZ-35 offline for rehabilitation. | -- |
| 1/29/2024 | -- | 6.5 pounds of sodium bicarbonate added to backwash tank. | pH balancing. |
| 1/29/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-29, IRZ-31, IRZ-33 (upper), and IRZ-37. | -- |
| 1/29/2024 through 1/31/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 1/29/2024 | -- | Ethanol dosing occurred. | -- |
| 1/30/2024 | -- | PTI-1D filter replaced. | -- |
| 1/30/2024 | -- | Backwashed IRZ injection wells IRZ-16, IRZ-18, IRZ-20, IRZ-29, IRZ-31, IRZ-33 (upper), and IRZ-37. | -- |
| 1/31/2024 | -- | Backwashed IRZ injection wells IRZ-15 and IRZ-17. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 1/30/2024 | 0.1 | IRZ system shutdown. | Instrumentation and Controls testing. |
| 1/31/2024 | 0.2 | IRZ system shutdown. | Instrumentation and Controls testing. |
| 2/1/2024 to 2/2/2024 | 1.0 | IRZ system shutdown. | Rain infiltration. |
| 2/1/2024 through 2/5/2024 | -- | Dosed IRZ injection well IRZ-17 (upper) and IRZ-18 with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 2/1/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17 (lower), IRZ-20, IRZ-29, IRZ-31, IRZ-33 (upper), and IRZ-37. | -- |
| 2/2/2024 | -- | PTI-1D filter replaced. | -- |
| 2/2/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 2/7/2024 through 2/22/2024 | -- | Injection well IRZ-37 offline for rehabilitation. | -- |
| 2/5/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-29, IRZ-31, IRZ-33, and IRZ-37. | -- |
| 2/6/2024 | -- | PTI-1D filter replaced. | -- |
| 2/6/2024 | -- | Ethanol dosing occurred. | -- |
| 2/6/2024 | -- | Sodium bicarbonate added to tanks to raise pH. 4 pounds added at backwash tank and 3 pounds added to Influent Tank 2. | pH balancing. |
| 2/6/2024 through 2/7/2024 | 1.0 | IRZ system shutdown. | Rain infiltration. |
| 2/7/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-29, IRZ-31, and IRZ-33. | -- |
| 2/8/2024 | 1.0 | IRZ system shutdown. | Rain infiltration. |
| 2/8/2024 through 2/9/2024 | -- | Ethanol dosing occurred in southern IRZ. | Rain event caused system to shutdown early into dosing. Injections were continued on 2/9/2024. |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 2/9/2024 | -- | PTI-1D filter replaced. | -- |
| 2/9/2024 | -- | Transducer replaced at IRZ-13 (lower). | Transducer producing inaccurate water level data. |
| 2/9/2024 through 2/12/2024 | -- | Extraction well IRZ-13D offline. | Broken fitting resulted in well leak. Leak contained to well vault. Fitting replaced and well resumed operation. |
| 2/8/2024 through 2/9/2024 | 1.0 | IRZ system shutdown. Three separate shutdowns and restarts. | Rain infiltration. |
| 2/10/2024 through 2/25/2024 | -- | Injection well IRZ-29 offline for rehabilitation. | Caps on check valve pass through were corroded and replaced with stainless steel. |
| 2/12/2024 | -- | PTI-1D filter replaced. | -- |
| 2/12/2024 | -- | Conducted quarterly sampling on extraction wells IRZ-9, IRZ-13S, IRZ-13D, IRZ-23, and PTI-1D. | -- |
| 2/12/2024 | -- | Backwashed IRZ injection wells IRZ-27 and IRZ-31. | -- |
| 2/13/2024 through 2/28/2024 | -- | Injection well IRZ-33 offline for rehabilitation. | Caps on check valve pass through were corroded and replaced with stainless steel. |
| 2/13/2024 | -- | Ethanol dosing occurred. | -- |
| 2/13/2024 | -- | 4 pounds of sodium bicarbonate added to backwash tank. | pH balancing. |
| 2/14/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-31 (upper), and IRZ-35. | |
| 2/14/2024 | -- | Dosed IRZ injection well IRZ-31 (lower) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 2/15/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 2/16/2024 | -- | PTI-1D filter replaced. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 2/16/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-31, and IRZ-35. | -- |
| 2/19/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-31, and IRZ-35. | -- |
| 2/19/2024 through 2/23/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 2/20/2024 through present | -- | Transfer pump between MW-20 Bench and TCS stopped working. | As a temporary measure while troubleshooting transfer pump, installed bag filters at the MW-20 Bench, allowing water to be processed directly from the backwash tank, through bag filters, and into conditioned water frac tank at the MW-20 Bench prior to reinjection. pH readings will be manually collected from backwash tank prior to transferring water. |
| 2/20/2024 | -- | PTI-1D filter replaced. | -- |
| 2/20/2024 | -- | Ethanol dosing occurred. | -- |
| 2/21/2024 through 2/22/2024 | -- | Dosed IRZ injection well IRZ-15 (upper) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 2/21/2024 | -- | Backwashed IRZ injection wells IRZ-15 (lower), IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-31, and IRZ-35. | -- |
| 2/22/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 2/23/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-31, and IRZ-35. | -- |
| 2/23/2024 | -- | PTI-1D filter replaced. | -- |
| 2/26/2024 through 2/27/2024 | -- | Dosed IRZ injection well IRZ-31 (upper) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 2/27/2024 | -- | PTI-1D filter replaced. | -- |
| 2/27/2024 | -- | Ethanol dosing occurred. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 2/27/2024 | -- | PTI-1D filter replaced. | -- |
| 2/28/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-31 (lower), IRZ-35, and IRZ-37. | -- |
| 2/28/2024 through 3/1/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 2/29/2024 | -- | PTI-1D offline for approximately 5 hours. | Communication loss with PTI-1D resulted in PTI-1D shutdown. Replaced communication extender cable and PTI-1D resumed operation. |
| 2/29/2024 | -- | Ethanol dosing occurred. | -- |
| 2/29/2024 | -- | IRZ-27 (upper/middle) shut down after approximately 1 hour of operation. | High water levels. |
| 2/29/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 3/1/2024 | -- | PTI-1D filter replaced. | -- |
| 3/1/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/1/2024 through 3/3/2024 | 2.0 | IRZ system offline. | Scheduled TCS maintenance. |
| 3/3/2024 through 3/4/2024 | -- | IRZ-20 (lower) offline for approximately 15 hours. | High water level alarm. |
| 3/3/2024 through 3/5/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 3/4/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/5/2024 | -- | PTI-1D filter replaced. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 3/5/2024 | -- | Ethanol dosing occurred. | -- |
| 3/6/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18 (lower), IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/6/2024 through 3/8/2024 | -- | Dosed IRZ injection well IRZ-18 (upper) and IRZ-31 (lower) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 3/7/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 3/7/2024 | 0.1 | IRZ system offline. | TCS maintenance. |
| 3/7/2024 | -- | Transducer replaced at IRZ-18 (lower) and IRZ-17 (lower). | Transducers producing inaccurate water level data. |
| 3/8/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/8/2024 | -- | PTI-1D filter replaced. | -- |
| 3/11/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/11/2024 through 3/15/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 3/12/2024 | -- | PTI-1D filter replaced. | -- |
| 3/12/2024 | -- | Ethanol dosing occurred. | -- |
| 3/13/2024 through 3/15/2024 | -- | Dosed IRZ injection well IRZ-16 (upper) and IRZ-29 (lower) with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 3/13/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16 (lower), IRZ-17, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/14/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 3/15/2024 | -- | Backwashed IRZ injection wells IRZ-18, IRZ-20, IRZ-27, IRZ-29 (upper), IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/15/2024 | -- | PTI-1D filter replaced. | -- |
| 3/15/2024 | 0.1 | IRZ system offline. | Rain triggered vault alarm. |
| 3/15/2024 through 3/16/2024 | 1.0 | IRZ system offline. | Rain triggered vault alarm. System was turned back on 3/15 then shut off again overnight. |
| 3/18/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17 (lower), IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/19/2024 | -- | PTI-1D filter replaced. | -- |
| 3/19/2024 | -- | Ethanol dosing occurred. | -- |
| 3/19/2024 through 3/27/2024 | -- | Injection well IRZ-17 offline for rehabilitation. | Caps on check valve pass through were corroded and replaced with stainless steel. |
| 3/20/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/20/2024 through 3/21/2024 | -- | Dosed IRZ injection well IRZ-35 with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 3/21/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 3/21/2024 through 4/5/2024 | -- | Injection well IRZ-31 offline for rehabilitation. | -- |
| 3/21/2024 through 3/22/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 3/22/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-33, and IRZ-37. | |
| 3/22/2024 | -- | PTI-1D filter replaced. | -- |
| 3/25/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-33, IRZ-35 and IRZ-37. | |

**Table 3.2**
**NTH IRZ System Operations and Non-Routine Maintenance Log**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Date | Approximate IRZ Systemwide Down Time (days) | Operations and Maintenance Log | Notes |
|---|---|---|---|
| 3/25/2024 | -- | Transducer replaced at IRZ-35. | Transducer producing inaccurate water level data. |
| 3/26/2024 | -- | Ethanol dosing occurred. | -- |
| 3/26/2024 | -- | PTI-1D filter replaced. | -- |
| 3/27/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-18, IRZ-20, IRZ-27, IRZ-29, IRZ-33, IRZ-35 and IRZ-37. | |
| 3/27/2024 | -- | Extraction well PTI-1D offline for 9 hours. | Rehabilitation team pulled pump to inspect and clean, then reinstalled. |
| 3/27/2024 through 3/29/2024 | -- | Dosed IRZ injection well IRZ-27 with chemical solution of NuWell phosphoric acid and NuWell bio dispersant at wellhead. | -- |
| 3/28/2024 | -- | Ethanol dosing occurred in southern IRZ. | -- |
| 3/28/2024 through 3/31/2024 | -- | Reinjected conditioned water into injection wells. | -- |
| 3/29/2024 | -- | PTI-1D filter replaced. | -- |
| 3/29/2024 | -- | Backwashed IRZ injection wells IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-29, IRZ-33, IRZ-35, and IRZ-37. | -- |
| 3/29/2024 | -- | Transducer replaced at IRZ-29 (lower). | Transducer producing inaccurate water level data. |
| 3/30/2024 through 3/31/2024 | 0.7 | IRZ system offline. | Rain triggered vault alarms, resulting in a system shutdown. System was restarted on 3/31/2024. |

**Abbreviations:**
-- = not applicable
CAB = Carbon Amendment Building
CWFT = conditioned water frac tank
gpm = gallons per minute
IRZ = In-Situ Reactive Zone
NTH = National Trails Highway
SCADA = supervisory control and data acquisition
TCS = Topock Compressor Station

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-15 | Upper | Injection | Apr-23 | 0.89 | -- | -- | NC |
| IRZ-15 | Upper | Injection | May-23 | 0.71 | -- | -- | NC |
| IRZ-15 | Upper | Injection | Jun-23 | 0.52 | 0.52 | Good | None needed. Well performance is good. |
| IRZ-15 | Upper | Injection | Jul-23 | 0.57 | 0.52 | Good | None needed. Well performance is good. |
| IRZ-15 | Upper | Injection | Aug-23 | 0.56 | 0.52 | Good | None needed. Well performance is good. |
| IRZ-15 | Upper | Injection | Sep-23 | 0.47 | 0.52 | Good | None needed. Well performance is good. |
| IRZ-15 | Upper | Injection | Oct-23 | 0.36 | 0.52 | Poor | Well operating at reduced flowrate in late October 2023 due to high water levels, resulting in lower specific capacity. Well scheduled for rehabilitation in November 2023. |
| IRZ-15 | Upper | Injection | Nov-23 | 0.11 | 0.52 | Poor | Specific capacity continued to decline as flowrate decreased. Well rehabilitation occurred in late November 2023. |
| IRZ-15 | Upper | Injection | Dec-23 | 1.8 | 0.52 | Good | None needed. Well performance is good. |
| IRZ-15 | Upper | Injection | Jan-24 | 0.79 | 0.52 | Good | None needed. Well performance is good. |
| IRZ-15 | Upper | Injection | Feb-24 | 0.30 | 0.52 | Poor, but improving | Specific capacity deteriorated as well operated at reduced flowrate to manage water levels. Specific capacity improved following wellhead chemical application in mid-February 2024. |
| IRZ-15 | Upper | Injection | Mar-24 | 0.18 | 0.52 | Poor | Specific capacity deteriorated as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for April 2024. |
| IRZ-15 | Lower | Injection | Apr-23 | 1.3 | -- | -- | NC |
| IRZ-15 | Lower | Injection | May-23 | 1.4 | -- | -- | NC |
| IRZ-15 | Lower | Injection | Jun-23 | 1.8 | -- | -- | NC |
| IRZ-15 | Lower | Injection | Jul-23 | 1.7 | -- | -- | NC |
| IRZ-15 | Lower | Injection | Aug-23 | 1.6 | 1.6 | Good | None needed. Well performance is good. |
| IRZ-15 | Lower | Injection | Sep-23 | 1.4 | 1.6 | Fair | Backwashing occurred three times weekly to manage high water levels. Reduced specific capacity in late September suggests well may be starting to foul. Continue to monitor and recommend rehabilitation in Fourth Quarter 2023 if reduced capacity continues. |
| IRZ-15 | Lower | Injection | Oct-23 | 1.5 | 1.6 | Good | None needed. Well performance is good. |
| IRZ-15 | Lower | Injection | Nov-23 | 2.1 | 1.6 | Good | Well rehabilitation occurred. |
| IRZ-15 | Lower | Injection | Dec-23 | 1.5 | 1.6 | Good | None needed. Well performance is good. |
| IRZ-15 | Lower | Injection | Jan-24 | 3.5 | 1.6 | Good | None needed. Well performance is good. |
| IRZ-15 | Lower | Injection | Feb-24 | 2.1 | 1.6 | Good | None needed. Well performance is good. |
| IRZ-15 | Lower | Injection | Mar-24 | 1.0 | 1.6 | Poor | Specific capacity deteriorated as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for April 2024. |
| IRZ-16 | Upper | Injection | Apr-23 | 0.37 | 0.60 | Poor | Lower specific capacity coincides with days where flowrate was reduced to manage ethanol mounding and higher water levels resulting from seasonal river stage. Not interpreted as fouling. |
| IRZ-16 | Upper | Injection | May-23 | 0.18 | 0.60 | Poor | Well operating at reduced flowrate due to high water levels caused by high river stage, resulting in lower specific capacity. |
| IRZ-16 | Upper | Injection | Jun-23 | 0.17 | 0.60 | Poor | Well operating at reduced flowrate due to high water levels caused by high river stage, resulting in lower specific capacity. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-16 | Upper | Injection | Jul-23 | 0.17 | 0.60 | Poor, but sustained | Well operating at reduced flowrate due to high water levels caused by high river stage, resulting in lower specific capacity. Well was shut down in early July following completion of treatment in northern upper zone. Well will be monitored upon restart. |
| IRZ-16 | Upper | Injection | Aug-23 | -- | 0.60 | -- | NC |
| IRZ-16 | Upper | Injection | Sep-23 | 0.27 | 0.60 | Poor, but improving | Well operating at reduced flowrate due to high water levels caused by high river stage, resulting in lower specific capacity. |
| IRZ-16 | Upper | Injection | Oct-23 | 0.20 | 0.60 | Poor | Specific capacity stabilized, then deteriorated through late October 2023 as the flowrate was reduced to manage water levels. Well rehabilitation scheduled for December 2023. |
| IRZ-16 | Upper | Injection | Nov-23 | 0.11 | 0.60 | Poor | Specific capacity deteriorated as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for December 2023. |
| IRZ-16 | Upper | Injection | Dec-23 | 0.55 | 0.60 | Good | Well rehabilitation occurred. |
| IRZ-16 | Upper | Injection | Jan-24 | 0.41 | 0.60 | Poor | Well operating at target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-16 | Upper | Injection | Feb-24 | 0.34 | 0.60 | Poor | Well operating at target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-16 | Upper | Injection | Mar-24 | 0.26 | 0.60 | Poor | Specific capacity deteriorated in early March 2024 as the flowrate was reduced to manage water levels. Wellhead dosing was conducted to improve flowrate. |
| IRZ-16 | Lower | Injection | Apr-23 | 0.40 | 0.78 | Poor | Lower specific capacity coincides with days where flowrate was reduced to manage ethanol mounding and higher water levels resulting from seasonal river stage. Not interpreted as fouling. |
| IRZ-16 | Lower | Injection | May-23 | 0.39 | 0.78 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-16 | Lower | Injection | Jun-23 | 0.36 | 0.78 | Poor | Lower specific capacity coincides with days where flowrate was reduced. Well is highly sensitive to minor adjustments to flowrate. Continue to monitor in Third Quarter as river stage has settled to determine if fouled. |
| IRZ-16 | Lower | Injection | Jul-23 | 0.49 | 0.78 | Poor, but improving | Lower specific capacity coincides with days where flowrate was reduced. Well is highly sensitive to minor adjustments to flowrate. Continue to monitor as river stage decreases. |
| IRZ-16 | Lower | Injection | Aug-23 | 0.58 | 0.78 | Poor, but improving | Well performance is improving. Gradual decrease in water level potentially associated with decreasing river stage. Continue to monitor as water level settles. |
| IRZ-16 | Lower | Injection | Sep-23 | 0.51 | 0.78 | Poor, but sustained | Well operating at or above target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-16 | Lower | Injection | Oct-23 | 0.57 | 0.78 | Poor, but sustained | Well operating at target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-16 | Lower | Injection | Nov-23 | 0.38 | 0.78 | Poor | Specific capacity declined as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for December 2023. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-16 | Lower | Injection | Dec-23 | 0.75 | 0.78 | Good | Well rehabilitation occurred. |
| IRZ-16 | Lower | Injection | Jan-24 | 0.60 | 0.78 | Poor | Well operating at target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-16 | Lower | Injection | Feb-24 | 0.45 | 0.78 | Poor | Well operating at target flowrate. Specific capacity deteriorated as water levels rose. Not currently recommended for rehabilitation based on ability to maintain target flowrate. |
| IRZ-16 | Lower | Injection | Mar-24 | 0.35 | 0.78 | Poor | Well operating at target flowrate. Specific capacity deteriorated as water levels rose. Not currently recommended for rehabilitation based on ability to maintain target flowrate. |
| IRZ-17 | Upper | Injection | Apr-23 | 0.41 | 0.76 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-17 | Upper | Injection | May-23 | 0.36 | 0.76 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-17 | Upper | Injection | Jun-23 | 0.26 | 0.76 | Poor | Lower specific capacity coincides with beginning of the month when flowrate was low to manage higher water levels resulting from seasonal river stage. As river stage settled, flowrate increased 3 gpm and specific capacity improved. |
| IRZ-17 | Upper | Injection | Jul-23 | 0.30 | 0.76 | Poor, but improving | Lower specific capacity coincides with reduced flowrate. Specific capacity gradually improved from June as river stage settled. Well was shut down in early July following completion of treatment in northern upper zone. Well will be monitored upon restart. |
| IRZ-17 | Upper | Injection | Aug-23 | -- | 0.76 | -- | NC |
| IRZ-17 | Upper | Injection | Sep-23 | 0.37 | 0.76 | Poor, but improving | Injection well returned to operation on September 25th and flowrate gradually increased. Well will continue to be monitored for improvement in Fourth Quarter 2023. |
| IRZ-17 | Upper | Injection | Oct-23 | 0.39 | 0.76 | Poor, but sustained | Well performance stabilized below target flow rate at 5 gpm. No further action needed. |
| IRZ-17 | Upper | Injection | Nov-23 | 0.24 | 0.76 | Poor | Well performance declined with continued operation. Flowrate unable to be maintained. Well scheduled for rehabilitation in December 2023. |
| IRZ-17 | Upper | Injection | Dec-23 | 0.61 | 0.76 | Fair | Well rehabilitation occurred. |
| IRZ-17 | Upper | Injection | Jan-24 | 0.59 | 0.76 | Poor, but sustained | Well operating at target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-17 | Upper | Injection | Feb-24 | 0.36 | 0.76 | Poor | Specific capacity declined as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for March 2024. |
| IRZ-17 | Upper | Injection | Mar-24 | 0.39 | 0.76 | Poor | Well rehabilitation occurred. |
| IRZ-17 | Lower | Injection | Apr-23 | 0.22 | 0.71 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-17 | Lower | Injection | May-23 | 0.29 | 0.71 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-17 | Lower | Injection | Jun-23 | 0.37 | 0.71 | Poor | Capacity improved as seasonal river stage relaxed and flowrate increased 3gpm. Not indicative of fouling. |
| IRZ-17 | Lower | Injection | Jul-23 | 0.37 | 0.71 | Poor, but sustained | Well performance stabilized below target flow rate at 8 gpm. Further action not needed. |
| IRZ-17 | Lower | Injection | Aug-23 | 0.40 | 0.71 | Poor, but sustained | Well performance stabilized below target flow rate at 8 gpm. Further action not needed. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
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**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-17 | Lower | Injection | Sep-23 | 0.37 | 0.71 | Poor, but sustained | Well performance stabilized below target flow rate at 8 gpm. Further action not needed. |
| IRZ-17 | Lower | Injection | Oct-23 | 0.38 | 0.71 | Poor, but sustained | Well performance stabilized below target flow rate at 8 gpm. Further action not needed. |
| IRZ-17 | Lower | Injection | Nov-23 | 0.36 | 0.71 | Poor, but sustained | Well performance decreased when flow rate increased to 10 gpm. Well scheduled for rehabilitation in December 2023. |
| IRZ-17 | Lower | Injection | Dec-23 | 0.41 | 0.71 | Poor, but improving | Well rehabilitation occurred. |
| IRZ-17 | Lower | Injection | Jan-24 | 0.31 | 0.71 | Poor | Well performance improved after rehabilitation, but deteriorated with continued operation. Wellhead dosing occurred mid January 2024 to manage fouling. |
| IRZ-17 | Lower | Injection | Feb-24 | 0.29 | 0.71 | Poor, but sustained | Well performance stabilized below target flow rate at 8 to 10 gpm. Further action not needed. |
| IRZ-17 | Lower | Injection | Mar-24 | 0.31 | 0.71 | Poor, but sustained | Well rehabilitation occurred due to high water levels in shallow interval. |
| IRZ-18 | Upper | Injection | Apr-23 | -- | 0.61 | -- | NC |
| IRZ-18 | Upper | Injection | May-23 | -- | 0.61 | -- | Specific capacity was unable to be determined due to SCADA data loss. IRZ-18 operated on May 31, 2023 only. |
| IRZ-18 | Upper | Injection | Jun-23 | 0.13 | 0.61 | Poor | Well operating at reduced flowrate due to high water levels caused by high river stage, resulting in lower specific capacity. Well will continue to be monitored in Third Quarter 2023 to determine if well is fouled following period of downtime in Second Quarter 2023. |
| IRZ-18 | Upper | Injection | Jul-23 | 0.11 | 0.61 | Poor | Well operated at reduced flowrate due to high water levels, resulting in lower specific capacity. Well was shut down in early July following completion of treatment in northern upper zone. Well will be monitored upon restart. |
| IRZ-18 | Upper | Injection | Aug-23 | -- | 0.61 | -- | NC |
| IRZ-18 | Upper | Injection | Sep-23 | 0.08 | 0.61 | Poor | Well operated for two days, then shut down due to high water levels. Well performance was impacted by check valve installed in well to relieve pressure on lower well interval. Check valve will be removed and performance will continue to be monitored for fouling upon restart. |
| IRZ-18 | Upper | Injection | Oct-23 | 0.61 | 0.61 | Good | Well rehabilitation occurred. |
| IRZ-18 | Upper | Injection | Nov-23 | 0.12 | 0.61 | Poor | Well performance improved after rehabilitation, but deteriorated with continued operation. Wellhead dosing occurred at the end of November 2023 to manage fouling. |
| IRZ-18 | Upper | Injection | Dec-23 | 0.13 | 0.61 | Poor | Wellhead dosing initially improved performance but unable to maintain target flowrate and water levels. Scheduled for January 2024 rehabilitation and more frequent wellhead dosing to manage fouling. |
| IRZ-18 | Upper | Injection | Jan-24 | 0.38 | 0.61 | Poor | Well rehabilitation occurred. |
| IRZ-18 | Upper | Injection | Feb-24 | 0.36 | 0.61 | Poor, but sustained | Well rehabilitation initially improved performance. Wellhead dosing to manage fouling and maintain target flowrates occurred in the begininng of February. |
| IRZ-18 | Upper | Injection | Mar-24 | 0.10 | 0.61 | Poor | Well operated at reduced flowrate due to high water levels, resulting in lower specific capacity. Well scheduled for rehabilitation in April 2024. |
| IRZ-18 | Lower | Injection | Apr-23 | -- | 0.73 | -- | NC |
| IRZ-18 | Lower | Injection | May-23 | -- | 0.73 | -- | Specific capacity was unable to be determined due to SCADA data loss. IRZ-18 operated on May 31, 2023 only. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
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**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-18 | Lower | Injection | Jun-23 | 0.33 | 0.73 | Poor | Well will continue to be monitored in Third Quarter 2023 to determine if seasonal river stage is affecting capacity or if well is fouled following period of downtime in Second Quarter 2023. |
| IRZ-18 | Lower | Injection | Jul-23 | 0.26 | 0.73 | Poor | Well operating at reduced flowrates throughout the month to manage water levels with seasonal river stage. Continue to monitor to see if capacity stabilizes at lower flowrate. |
| IRZ-18 | Lower | Injection | Aug-23 | 0.21 | 0.73 | Poor, but sustained | Specific capacity is sustained at reduced flowrate. No further action needed. |
| IRZ-18 | Lower | Injection | Sep-23 | 0.20 | 0.73 | Poor, but sustained | Well scheduled for inspection and rehabilitation in early October 2023 due to observations at IRZ-18 upper. |
| IRZ-18 | Lower | Injection | Oct-23 | 0.32 | 0.73 | Poor, but improving | Well rehabilitation occurred. |
| IRZ-18 | Lower | Injection | Nov-23 | 0.27 | 0.73 | Poor | Well performance improved after rehabilitation, but deteriorated with continued operation. Wellhead dosing occurred at the end of November 2023 to manage fouling. |
| IRZ-18 | Lower | Injection | Dec-23 | 0.21 | 0.73 | Poor | Wellhead dosing initially improved performance but unable to maintain target flowrate and water levels. Scheduled for January 2024 rehabilitation and more frequent wellhead dosing to manage fouling. |
| IRZ-18 | Lower | Injection | Jan-24 | 0.20 | 0.73 | Poor, but sustained | Well rehabilitation occurred. |
| IRZ-18 | Lower | Injection | Feb-24 | 0.20 | 0.73 | Poor, but sustained | Well rehabilitation initially improved performance. Wellhead dosing to manage fouling and maintain target flowrates occurred in the begininng of February. |
| IRZ-18 | Lower | Injection | Mar-24 | 0.13 | 0.73 | Poor | Well operated at reduced flowrate due to high water levels, resulting in lower specific capacity. Well scheduled for rehabilitation in April 2024. |
| IRZ-20 | Upper | Injection | Apr-23 | 0.32 | 0.59 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-20 | Upper | Injection | May-23 | 0.25 | 0.59 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-20 | Upper | Injection | Jun-23 | 0.16 | 0.59 | Poor | Well operating at reduced flowrate. Well is likely fouling as seasonal river stage settles in June. Continued operation at reduced flowrates to complete treatment in northern upper zone. |
| IRZ-20 | Upper | Injection | Jul-23 | 0.11 | 0.59 | Poor | Well operated at reduced flowrate due to high water levels, resulting in lower specific capacity. Well was shut down in early July following completion of treatment in northern upper zone. Well will be monitored upon restart. |
| IRZ-20 | Upper | Injection | Aug-23 | -- | 0.59 | -- | NC |
| IRZ-20 | Upper | Injection | Sep-23 | 0.20 | 0.59 | Poor, but improving | Specific capacity improved as flowrate returned to target rate and water levels continue to decrease with seasonal river stage. Will continue to monitor for possible rehabilitation after completion of rehabilitation of southern injection wells, since target flowrate is currently able to be maintained despite possible fouling. |
| IRZ-20 | Upper | Injection | Oct-23 | 0.70 | 0.59 | Good | None needed. Well performance is good. |
| IRZ-20 | Upper | Injection | Nov-23 | 0.57 | 0.59 | Good | None needed. Well performance is good. |
| IRZ-20 | Upper | Injection | Dec-23 | 0.58 | 0.59 | Good | Well rehabilitation occurred. |
| IRZ-20 | Upper | Injection | Jan-24 | 0.32 | 0.59 | Poor | Well operating at target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-20 | Upper | Injection | Feb-24 | 0.41 | 0.59 | Poor, but improving | Well operating at or above target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-20 | Upper | Injection | Mar-24 | 0.34 | 0.59 | Poor | Well operating at or above target flowrate. Water level remained relatively stable. Not currently recommended for rehabilitation based on ability to maintain water level at target flowrate. |
| IRZ-20 | Lower | Injection | Apr-23 | 0.21 | 0.54 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-20 | Lower | Injection | May-23 | 0.22 | 0.54 | Poor | Well operating at reduced flowrate as river stage increased, contributing to lower specific capacity. |
| IRZ-20 | Lower | Injection | Jun-23 | 0.32 | 0.54 | Poor | Flowrate marginally increased after short period of downtime relaxed water levels, contributing to increased specific capacity. |
| IRZ-20 | Lower | Injection | Jul-23 | 0.40 | 0.54 | Poor, but improving | Specific capacity is poor, but improving throughout the month. Well continuing to operate at reduced flowrate due to seasonal river stage. Continue to monitor. |
| IRZ-20 | Lower | Injection | Aug-23 | 0.70 | 0.54 | Good | None needed. Well performance is good. |
| IRZ-20 | Lower | Injection | Sep-23 | 0.59 | 0.54 | Good | None needed. Well performance is good. |
| IRZ-20 | Lower | Injection | Oct-23 | 0.70 | 0.54 | Good | None needed. Well performance is good. |
| IRZ-20 | Lower | Injection | Nov-23 | 0.57 | 0.54 | Good | None needed. Well performance is good. |
| IRZ-20 | Lower | Injection | Dec-23 | 0.98 | 0.54 | Good | Well rehabilitation occurred. |
| IRZ-20 | Lower | Injection | Jan-24 | 1.19 | 0.54 | Good | None needed. Well performance is good. |
| IRZ-20 | Lower | Injection | Feb-24 | 0.46 | 0.54 | Fair | Well operating at or above target flowrate. Water level increased in February, resulting in lower specific capacity. Not recommended for rehabilitation at this time since target flowrate is able to be maintained. |
| IRZ-20 | Lower | Injection | Mar-24 | 0.75 | 0.54 | Good | None needed. Well performance is good. |
| IRZ-21 | Upper | Injection | Apr-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | May-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Jun-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Jul-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Aug-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Sep-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Oct-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Nov-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Dec-23 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Jan-24 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Feb-24 | -- | -- | -- | NC |
| IRZ-21 | Upper | Injection | Mar-24 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Apr-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | May-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Jun-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Jul-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Aug-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Sep-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Oct-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Nov-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Dec-23 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Jan-24 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Feb-24 | -- | -- | -- | NC |
| IRZ-21 | Lower | Injection | Mar-24 | -- | -- | -- | NC |

**Table 3.3**
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**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-25 | Upper / Upper Middle | Injection | Apr-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | May-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Jun-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Jul-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Aug-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Sep-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Oct-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Nov-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Dec-23 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Jan-24 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Feb-24 | -- | -- | -- | NC |
| IRZ-25 | Upper / Upper Middle | Injection | Mar-24 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Apr-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | May-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Jun-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Jul-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Aug-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Sep-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Oct-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Nov-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Dec-23 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Jan-24 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Feb-24 | -- | -- | -- | NC |
| IRZ-25 | Lower | Injection | Mar-24 | -- | -- | -- | NC |
| IRZ-27 | Upper / Upper Middle | Injection | Apr-23 | -- | 0.67 | -- | NC |
| IRZ-27 | Upper / Upper Middle | Injection | May-23 | -- | 0.67 | -- | NC |
| IRZ-27 | Upper / Upper Middle | Injection | Jun-23 | 0.33 | 0.67 | Poor | Rehabilitation conducted April through May 2023. Backwashing conducted thrice weekly starting in June. Reduced performance possibly influenced by seasonal river stage resulting in higher water levels. Will continue to monitor in Third Quarter to assess rehabilitation effectiveness. |
| IRZ-27 | Upper / Upper Middle | Injection | Jul-23 | 0.25 | 0.67 | Poor | Well performance initially improved after rehabilitation, but deteriorated following a few weeks of operation. Well operating at reduced flowrate, contributing to reduced specific capacity. Continue to monitor as water levels relax with seasonal river stage to determine if fouled. |
| IRZ-27 | Upper / Upper Middle | Injection | Aug-23 | 0.17 | 0.67 | Poor | Well rehabilitation scheduled for September 2023. Unable to maintain target flowrates with water levels. |
| IRZ-27 | Upper / Upper Middle | Injection | Sep-23 | 0.16 | 0.67 | Poor | Rehabilitation occurred end of September 2023 with modified procedure and will continue in Fourth Quarter 2023. See Section 3.3 for additional information. |
| IRZ-27 | Upper / Upper Middle | Injection | Oct-23 | 0.49 | 0.67 | Poor, but improving | Well rehabilitation occurred. |
| IRZ-27 | Upper / Upper Middle | Injection | Nov-23 | 0.30 | 0.67 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Reduced flowrate to maintain water levels. Wellhead dosing occurred at the end of November 2023. |
| IRZ-27 | Upper / Upper Middle | Injection | Dec-23 | 0.17 | 0.67 | Poor | Wellhead dosing improved specific capacity, but well performance deteriorated following a week of operation. Well rehabilitation scheduled for First Quarter 2024. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-27 | Upper / Upper Middle | Injection | Jan-24 | 0.07 | 0.67 | Poor | Well operated at reduced flowrate due to high water levels, resulting in lower specific capacity. Well scheduled for rehabilitation in February 2024. |
| IRZ-27 | Upper / Upper Middle | Injection | Feb-24 | 0.16 | 0.67 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Reduced flowrate to maintain water levels. |
| IRZ-27 | Upper / Upper Middle | Injection | Mar-24 | 0.11 | 0.67 | Poor | Reduced flowrate to maintain water levels. Wellhead dosing occurred at the end of March 2024. |
| IRZ-27 | Lower | Injection | Apr-23 | -- | 0.49 | -- | NC |
| IRZ-27 | Lower | Injection | May-23 | -- | 0.49 | -- | NC |
| IRZ-27 | Lower | Injection | Jun-23 | 0.37 | 0.49 | Poor | Rehabilitation conducted April through May 2023. Backwashing conducted thrice weekly starting in June. Reduced performance possibly influenced by seasonal river stage resulting in higher water levels. Will continue to monitor in Third Quarter to assess rehabilitation effectiveness. |
| IRZ-27 | Lower | Injection | Jul-23 | 0.28 | 0.49 | Poor | Well performance initially improved after rehabilitation, but deteriorated following a few weeks of operation. Reduced specific capacity coincides with days where flowrate was reduced to manage high water levels. Will continue to monitor as river stage decreases to determine if fouled. |
| IRZ-27 | Lower | Injection | Aug-23 | 0.24 | 0.49 | Poor | Specific capacity decreased with continued operation. Rehabilitation scheduled for September 2023. |
| IRZ-27 | Lower | Injection | Sep-23 | 0.22 | 0.49 | Poor | Rehabilitation occurred end of September 2023 with modified procedure and will continue in Fourth Quarter 2023. See Section 3.3 for additional information. |
| IRZ-27 | Lower | Injection | Oct-23 | 0.46 | 0.49 | Good | Well rehabilitation occurred. |
| IRZ-27 | Lower | Injection | Nov-23 | 0.25 | 0.49 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Target flowrate was maintained with increase in water levels. |
| IRZ-27 | Lower | Injection | Dec-23 | 0.20 | 0.49 | Poor, but sustained | Specific capacity is poor, but sustained. Well rehabilitation scheduled for First Quarter 2024. |
| IRZ-27 | Lower | Injection | Jan-24 | 0.19 | 0.49 | Poor, but sustained | Specific capacity is poor, but sustained. Well rehabilitation scheduled for February 2024. |
| IRZ-27 | Lower | Injection | Feb-24 | 0.45 | 0.49 | Good | Well rehabilitation occurred. |
| IRZ-27 | Lower | Injection | Mar-24 | 0.19 | 0.49 | Poor | Target flowrate was maintained until late March, then reduced flowrate to maintain water levels. Wellhead dosing occurred at the end of March 2024. |
| IRZ-29 | Upper | Injection | Apr-23 | -- | 0.41 | -- | NC |
| IRZ-29 | Upper | Injection | May-23 | -- | 0.41 | -- | Well rehabilitation occurred. |
| IRZ-29 | Upper | Injection | Jun-23 | -- | 0.41 | -- | NC |
| IRZ-29 | Upper | Injection | Jul-23 | 0.41 | 0.41 | Good | None needed. Well performance is good. |
| IRZ-29 | Upper | Injection | Aug-23 | 0.28 | 0.41 | Poor, but sustained | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Performance is poor, but specific capacity began to stabilize in August. Continue to monitor as river stage decreases. |
| IRZ-29 | Upper | Injection | Sep-23 | 0.28 | 0.41 | Poor, but sustained | Specific capacity is sustained. Well scheduled for rehabilitation in Fourth Quarter 2023. |
| IRZ-29 | Upper | Injection | Oct-23 | 0.30 | 0.41 | Poor, but sustained | Specific capacity is sustained. Well scheduled for rehabilitation in November 2023. |
| IRZ-29 | Upper | Injection | Nov-23 | 0.59 | 0.41 | Good | Well rehabilitation occurred. |
| IRZ-29 | Upper | Injection | Dec-23 | 0.38 | 0.41 | Poor, but sustained | None needed. Well performance is good. |
| IRZ-29 | Upper | Injection | Jan-24 | 0.27 | 0.41 | Poor | Specific capacity deteriorated in early January 2024 as the flowrate was reduced to manage water levels. Wellhead dosing was conducted to improve flowrate. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-29 | Upper | Injection | Feb-24 | 0.35 | 0.41 | Fair | Well rehabilitation occurred. |
| IRZ-29 | Upper | Injection | Mar-24 | 0.28 | 0.41 | Poor | Target flowrate maintained until late March 2024. Specific capacity deteriorated as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for April 2024. |
| IRZ-29 | Lower | Injection | Apr-23 | -- | 0.52 | -- | NC |
| IRZ-29 | Lower | Injection | May-23 | -- | 0.52 | -- | Well rehabilitation occurred. |
| IRZ-29 | Lower | Injection | Jun-23 | -- | 0.52 | -- | NC |
| IRZ-29 | Lower | Injection | Jul-23 | 0.30 | 0.52 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Well operated at reduced flowrate due to seasonal river stage, contributing to reduced specific capacity. Continue to monitor as river stage relaxes to determine if fouled. |
| IRZ-29 | Lower | Injection | Aug-23 | 0.28 | 0.52 | Poor, but sustained | Specific capacity is poor, but stabilized at reduced flowrates. Continue to monitor as river stage decreases. Rehabilitation procedure is being reviewed. |
| IRZ-29 | Lower | Injection | Sep-23 | 0.38 | 0.52 | Poor, but improving | Specific capacity is improving. Well scheduled for rehabilitation in Fourth Quarter 2023. |
| IRZ-29 | Lower | Injection | Oct-23 | 0.35 | 0.52 | Poor, but sustained | Specific capacity is sustained. Well scheduled for rehabilitation in November 2023. |
| IRZ-29 | Lower | Injection | Nov-23 | 0.60 | 0.52 | Good | Well rehabilitation occurred. |
| IRZ-29 | Lower | Injection | Dec-23 | 0.42 | 0.52 | Fair | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Wellhead dosing scheduled for January 2024. |
| IRZ-29 | Lower | Injection | Jan-24 | 0.31 | 0.52 | Poor | Specific capacity deteriorated as the flowrate was reduced to manage water levels at the end of January 2024. Well rehabilitation scheduled for February 2024. |
| IRZ-29 | Lower | Injection | Feb-24 | 0.24 | 0.52 | Poor | Well rehabilitation occurred. |
| IRZ-29 | Lower | Injection | Mar-24 | 0.21 | 0.52 | Poor | Specific capacity deteriorated as well operated at reduced flowrate to manage water levels. Well rehabilitation scheduled for April 2024. |
| IRZ-31 | Upper | Injection | Apr-23 | -- | 0.58 | -- | NC |
| IRZ-31 | Upper | Injection | May-23 | -- | 0.58 | -- | Well rehabilitation occurred. |
| IRZ-31 | Upper | Injection | Jun-23 | -- | 0.58 | -- | NC |
| IRZ-31 | Upper | Injection | Jul-23 | 0.38 | 0.58 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Well operated at reduced flowrate due to seasonal river stage, contributing to reduced specific capacity. Continue to monitor as river stage relaxes to determine if fouled. |
| IRZ-31 | Upper | Injection | Aug-23 | 0.21 | 0.58 | Poor | Flowrate reduced to manage high water levels. Fouling is suspected. Well rehabilitation procedure is being reviewed to improve effectiveness. |
| IRZ-31 | Upper | Injection | Sep-23 | 0.26 | 0.58 | Poor, but improving | Wellhead dosing conducted on well as additional maintenance strategy to manage fouling. See Table 3.2. Well performance improved following wellhead dosing. Well scheduled for rehabilitation in Fourth Quarter 2023. |
| IRZ-31 | Upper | Injection | Oct-23 | 0.27 | 0.58 | Poor | Well rehabilitation occurred. |
| IRZ-31 | Upper | Injection | Nov-23 | 0.51 | 0.58 | Fair | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Wellhead dosing scheduled for December 2023. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-31 | Upper | Injection | Dec-23 | 0.29 | 0.58 | Poor | Wellhead dosing occurred twice during the month to manage water levels. Increased specific capacity associated with wellhead dosing events. Well rehabilitation scheduled for First Quarter 2024. |
| IRZ-31 | Upper | Injection | Jan-24 | 0.35 | 0.58 | Poor | Well rehabilitation occurred. |
| IRZ-31 | Upper | Injection | Feb-24 | 0.38 | 0.58 | Poor, but sustained | Specific capacity deteriorated as the flowrate was reduced to manage water levels at the end of Febraury 2024. Well rehabilitation scheduled for March 2024. |
| IRZ-31 | Upper | Injection | Mar-24 | 0.23 | 0.58 | Poor | Well rehabilitation occurred. |
| IRZ-31 | Lower | Injection | Apr-23 | -- | 0.46 | -- | NC |
| IRZ-31 | Lower | Injection | May-23 | -- | 0.46 | -- | Well rehabilitation occurred. |
| IRZ-31 | Lower | Injection | Jun-23 | -- | 0.46 | -- | NC |
| IRZ-31 | Lower | Injection | Jul-23 | 0.31 | 0.46 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Well operated at reduced flowrate due to seasonal river stage, contributing to reduced specific capacity. Continue to monitor as river stage relaxes to determine if fouled. |
| IRZ-31 | Lower | Injection | Aug-23 | 0.27 | 0.46 | Poor | Flowrate reduced to manage high water levels. Fouling is suspected. Well rehabilitation procedure is being reviewed to improve effectiveness. |
| IRZ-31 | Lower | Injection | Sep-23 | 0.33 | 0.46 | Poor, but improving | Wellhead dosing conducted on well as additional maintenance strategy to manage fouling. See Table 3.2. Well performance improved following wellhead dosing. Well scheduled for rehabilitation in Fourth Quarter 2023. |
| IRZ-31 | Lower | Injection | Oct-23 | 0.32 | 0.46 | Poor | Well rehabilitation occurred. |
| IRZ-31 | Lower | Injection | Nov-23 | 0.36 | 0.46 | Poor | Well performance initially improved after rehabilitation, but deteriorated with continued operation. Well operated at reduced flowrate at end of month. Wellhead dosing scheduled for December 2023. |
| IRZ-31 | Lower | Injection | Dec-23 | 0.31 | 0.46 | Poor | Wellhead dosing occurred twice during the month to manage water levels. Increased specific capacity associated with wellhead dosing events. Well rehabilitation scheduled for First Quarter 2024. |
| IRZ-31 | Lower | Injection | Jan-24 | 0.43 | 0.46 | Good | Well rehabilitation occurred. |
| IRZ-31 | Lower | Injection | Feb-24 | 0.26 | 0.46 | Poor | Specific capacity deteriorated as the flowrate was reduced to manage water levels at the end of Febraury 2024. Wellhead dosing occurred to manage water levels. Increased specific capacity associated with wellhead dosing event. Well rehabilitation scheduled for March 2024. |
| IRZ-31 | Lower | Injection | Mar-24 | 0.15 | 0.46 | Poor | Well rehabilitation occurred. |
| IRZ-33 | Upper | Injection | Apr-23 | -- | 0.50 | -- | NC |
| IRZ-33 | Upper | Injection | May-23 | -- | 0.50 | -- | Well rehabilitation occurred. |
| IRZ-33 | Upper | Injection | Jun-23 | -- | 0.50 | -- | NC |
| IRZ-33 | Upper | Injection | Jul-23 | 0.28 | 0.50 | Poor | Well rehabilitation occurred in Second Quarter 2023 and well returned to operation by mid-July 2023. Well performance initially improved after rehabilitation. Continue to monitor in August to determine rehabilitation effectiveness. |
| IRZ-33 | Upper | Injection | Aug-23 | 0.27 | 0.50 | Poor, but sustained | Specific capacity is sustained. Well rehabilitation procedure is being reviewed and well is planned for rehabilitation in Fourth Quarter 2023. |
| IRZ-33 | Upper | Injection | Sep-23 | 0.27 | 0.50 | Poor, but sustained | Specific capacity is sustained. Well scheduled for rehabilitation in Fourth Quarter 2023. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-33 | Upper | Injection | Oct-23 | 0.31 | 0.50 | Poor, but sustained | Specific capacity is sustained. Well scheduled for rehabilitation in November 2023. Target flowrate able to be maintained. |
| IRZ-33 | Upper | Injection | Nov-23 | 0.50 | 0.50 | Good | Well rehabilitation occurred. |
| IRZ-33 | Upper | Injection | Dec-23 | 0.33 | 0.50 | Poor | Reduced well performance following approximately a month of operation after rehabilitation. Target flowrate able to be maintained. Scheduled for wellhead dosing in January 2023. |
| IRZ-33 | Upper | Injection | Jan-24 | 0.24 | 0.50 | Poor | Specific capacity deteriorated as the flowrate was reduced to manage water levels . Wellhead dosing occurred. Increased specific capacity associated with wellhead dosing event. Well rehabilitation scheduled for February 2024. |
| IRZ-33 | Upper | Injection | Feb-24 | 0.25 | 0.50 | Poor, but sustained | Well rehabilitation occurred. |
| IRZ-33 | Upper | Injection | Mar-24 | 0.23 | 0.50 | Poor, but sustained | Rehabilitation initially improved performance but unable to maintain target flowrate and water levels. Scheduled for rehabilitation in Second Quarter 2024. |
| IRZ-33 | Lower | Injection | Apr-23 | -- | 0.36 | -- | NC |
| IRZ-33 | Lower | Injection | May-23 | -- | 0.36 | -- | Well rehabilitation occurred. |
| IRZ-33 | Lower | Injection | Jun-23 | -- | 0.36 | -- | NC |
| IRZ-33 | Lower | Injection | Jul-23 | 0.98 | 0.36 | Good | None needed. Well performance is good. |
| IRZ-33 | Lower | Injection | Aug-23 | -- | 0.36 | -- | NC |
| IRZ-33 | Lower | Injection | Sep-23 | 0.23 | 0.36 | Poor | Well scheduled for rehabilitation in Fourth Quarter 2023. |
| IRZ-33 | Lower | Injection | Oct-23 | 0.22 | 0.36 | Poor, but sustained | Well scheduled for rehabilitation in November 2023. Specific capacity decreased as water levels increased. Target flowrate able to be maintained. |
| IRZ-33 | Lower | Injection | Nov-23 | 0.27 | 0.36 | Poor, but improving | Well rehabilitation occurred. |
| IRZ-33 | Lower | Injection | Dec-23 | 0.20 | 0.36 | Poor, but sustained | Reduced well performance following approximately a month of operation after rehabilitation. Specific capacity remained consistent throughout most of the month. Scheduled for wellhead dosing in January 2023. |
| IRZ-33 | Lower | Injection | Jan-24 | 0.18 | 0.36 | Poor | Specific capacity deteriorated as the flowrate was reduced to manage water levels . Wellhead dosing occurred. Well rehabilitation scheduled for February 2024. |
| IRZ-33 | Lower | Injection | Feb-24 | 0.17 | 0.36 | Poor | Well rehabilitation occurred. |
| IRZ-33 | Lower | Injection | Mar-24 | 0.12 | 0.36 | Poor | Rehabilitation initially improved performance but unable to maintain target flowrate and water levels. Scheduled for rehabilitation in Second Quarter 2024. |
| IRZ-35 | Upper | Injection | Apr-23 | -- | 0.48 | -- | NC |
| IRZ-35 | Upper | Injection | May-23 | -- | 0.48 | -- | Well rehabilitation occurred. |
| IRZ-35 | Upper | Injection | Jun-23 | -- | 0.48 | -- | NC |
| IRZ-35 | Upper | Injection | Jul-23 | 0.30 | 0.48 | Poor | Well rehabilitation occurred in Second Quarter 2023 and well returned to operation by mid-July 2023. Well performance initially improved after rehabilitation. Continue to monitor in August to determine rehabilitation effectiveness. |
| IRZ-35 | Upper | Injection | Aug-23 | 0.28 | 0.48 | Poor | Well operating at reduced flowrate to manage water levels, contributing to reduced specific capacity. Well rehabilitation procedure is being reviewed and well is planned for rehabilitation in Fourth Quarter 2023. |
| IRZ-35 | Upper | Injection | Sep-23 | 4.9 | 0.48 | Good | None needed. Well performance is good. |
| IRZ-35 | Upper | Injection | Oct-23 | 4.9 | 0.48 | Good | Well rehabilitation occurred. |
| IRZ-35 | Upper | Injection | Nov-23 | 1.4 | 0.48 | Good | None needed. Well performance is good. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-35 | Upper | Injection | Dec-23 | 0.36 | 0.48 | Poor | Wellhead dosing occurred. Reduced flowrate temporarily to manage high water levels. Scheduled for well rehabilitation in First Quarter 2023. |
| IRZ-35 | Upper | Injection | Jan-24 | 0.27 | 0.48 | Poor | Well rehabilitation occurred at the end of January 2024. |
| IRZ-35 | Upper | Injection | Feb-24 | 0.64 | 0.48 | Good | None needed. Well performance is good. |
| IRZ-35 | Upper | Injection | Mar-24 | 0.19 | 0.48 | Poor | Specific capacity deteriorated as the flowrate was reduced to manage water levels. Wellhead dosing was conducted to improve flowrate. |
| IRZ-37 | Upper | Injection | Apr-23 | -- | -- | -- | NC |
| IRZ-37 | Upper | Injection | May-23 | -- | -- | -- | Well rehabilitation occurred. |
| IRZ-37 | Upper | Injection | Jun-23 | -- | -- | -- | NC |
| IRZ-37 | Upper | Injection | Jul-23 | 0.19 | 0.35 | Poor | Well performance initially improved after rehabilitation but began to deteriorate after continued operation. Target flowrate was unable to be maintained due to high water levels. Well rehabilitation procedure is being reviewed. |
| IRZ-37 | Upper | Injection | Aug-23 | 0.12 | 0.35 | Poor | Well operated at reduced flowrate to manage high water levels, contributing to reduced specific capacity. Specific capacity stabilized by the end of the month. |
| IRZ-37 | Upper | Injection | Sep-23 | 0.12 | 0.35 | Poor, but sustained | Wellhead dosing conducted on well as additional maintenance strategy to manage fouling. Well scheduled for rehabilitation in October 2023. |
| IRZ-37 | Upper | Injection | Oct-23 | 0.64 | 0.35 | Good | Well rehabilitation occurred. |
| IRZ-37 | Upper | Injection | Nov-23 | 0.23 | 0.35 | Poor | Well performance initially improved after rehabilitation but began to deteriorate after continued operation. Target flowrate was unable to be maintained due to high water levels. Scheduled for wellhead dosing in December. |
| IRZ-37 | Upper | Injection | Dec-23 | 0.20 | 0.35 | Poor | Water levels improved following wellhead dosing and flowrate was able to be increased to target. Well performance deteriorated at the end of the month. Recommend more frequent wellhead dosing to manage performance. |
| IRZ-37 | Upper | Injection | Jan-24 | 0.13 | 0.35 | Poor | Specific capacity deteriorated as the flowrate was reduced to manage water levels. Wellhead dosing was conducted to improve flowrate. Scheduled for rehabilitation in February 2024. |
| IRZ-37 | Upper | Injection | Feb-24 | 0.41 | 0.35 | Good | Well rehabilitation occurred. |
| IRZ-37 | Upper | Injection | Mar-24 | 0.14 | 0.35 | Poor | Rehabilitation initially improved performance but unable to maintain target flowrate and water levels. Scheduled for Second Quarter 2024 rehabilitation. |
| IRZ-39 | Upper | Injection | Apr-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | May-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Jun-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Jul-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Aug-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Sep-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Oct-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Nov-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Dec-23 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Jan-24 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Feb-24 | -- | -- | -- | NC |
| IRZ-39 | Upper | Injection | Mar-24 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Apr-23 | -- | -- | -- | NC |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-9 | Upper | Extraction | May-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Jun-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Jul-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Aug-23 | 62 | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Sep-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Oct-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Nov-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Dec-23 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Jan-24 | -- | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Feb-24 | 76 | -- | -- | NC |
| IRZ-9 | Upper | Extraction | Mar-24 | -- | -- | -- | NC |
| IRZ-13D | Lower | Extraction | Apr-23 | -- | -- | -- | NC |
| IRZ-13D | Lower | Extraction | May-23 | -- | -- | -- | NC |
| IRZ-13D | Lower | Extraction | Jun-23 | 1.4 | 6.2 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13D | Lower | Extraction | Jul-23 | 4.9 | 6.2 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13D | Lower | Extraction | Aug-23 | 5.2 | 6.2 | Fair | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13D | Lower | Extraction | Sep-23 | 6.4 | 6.2 | Good | None needed. Well performance is good. |
| IRZ-13D | Lower | Extraction | Oct-23 | -- | -- | -- | NC |
| IRZ-13D | Lower | Extraction | Nov-23 | 0.77 | 6.2 | Poor | Lower specific capacities measured when flowrate decreased and higher specific capacities measured when flowrate increased. Not interpreted as fouling. No action taken. |
| IRZ-13D | Lower | Extraction | Dec-23 | 2.5 | 6.2 | Poor | Lower specific capacities measured when flowrate decreased and higher specific capacities measured when flowrate increased. Not interpreted as fouling. No action taken. |
| IRZ-13D | Lower | Extraction | Jan-24 | 1.9 | 6.2 | Poor | Faulty transducer data indicated water levels about 14 feet higher than reality, resulting in a lower calculated specific capacity. Transducer will be replaced in February. |
| IRZ-13D | Lower | Extraction | Feb-24 | 7.1 | 6.2 | Good | Transducer replaced February 9, 2024, resulting in lower reported water levels in mid to late February and therefore improved specific capacity. |
| IRZ-13D | Lower | Extraction | Mar-24 | 25.0 | 6.2 | Good | None needed. Well performance is good. |
| IRZ-13S | Upper | Extraction | Apr-23 | -- | -- | -- | NC |
| IRZ-13S | Upper | Extraction | May-23 | 1.6 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Jun-23 | 1.6 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Jul-23 | 3.2 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Aug-23 | 2.4 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Sep-23 | 3.7 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| IRZ-13S | Upper | Extraction | Oct-23 | -- | -- | -- | NC |
| IRZ-13S | Upper | Extraction | Nov-23 | 3.2 | 9.3 | Poor | Lower specific capacities measured when flowrate decreased and higher specific capacities measured when flowrate increased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Dec-23 | 4.6 | 9.3 | Poor | Lower specific capacities measured when flowrate decreased and higher specific capacities measured when flowrate increased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Jan-24 | 4.7 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Feb-24 | 4.7 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-13S | Upper | Extraction | Mar-24 | 2.0 | 9.3 | Poor | Well operated intermittently. Lower specific capacities measured when flowrate decreased. Not interpreted as fouling. No action taken. |
| IRZ-23 | Lower | Extraction | Apr-23 | 6.1 | 41 | Poor | Low specific capacity continued at higher flowrate. Specific capacity returned when flowrate reduced, confirming not fouling. No action needed. |
| IRZ-23 | Lower | Extraction | May-23 | 6.2 | 41 | Poor | Low specific capacity continued at higher flowrate. Specific capacity returned when flowrate reduced, confirming not fouling. No action needed. |
| IRZ-23 | Lower | Extraction | Jun-23 | 22 | 41 | Poor | Low specific capacity continued at higher flowrate. Specific capacity returned when flowrate reduced, confirming not fouling. No action needed. |
| IRZ-23 | Lower | Extraction | Jul-23 | 32 | 41 | Poor | Low specific capacity continued at higher flowrate. Specific capacity returned when flowrate reduced, confirming not fouling. No action needed. |
| IRZ-23 | Lower | Extraction | Aug-23 | 57 | 41 | Good | None needed. Well performance is good. |
| IRZ-23 | Lower | Extraction | Sep-23 | 70 | 41 | Good | None needed. Well performance is good. |
| IRZ-23 | Lower | Extraction | Oct-23 | 133 | 41 | Good | None needed. Well performance is good. |
| IRZ-23 | Lower | Extraction | Nov-23 | 20 | 41 | Poor | Target November flowrate was less than half of target October flowrate. Water level increased as expected at reduced flowrate. Continue to monitor as extraction continues at lower target flowrate. |
| IRZ-23 | Lower | Extraction | Dec-23 | 24 | 41 | Poor, but improving | Low specific capacity continued but improved as extraction continued at lower target flowrate. |
| IRZ-23 | Lower | Extraction | Jan-24 | 29 | 41 | Poor, but improving | Low specific capacity continued but improved as extraction continued at lower target flowrate. |
| IRZ-23 | Lower | Extraction | Feb-24 | 27 | 41 | Poor, but sustained | Low specific capacity continued as extraction continued at lower target flowrate. |
| IRZ-23 | Lower | Extraction | Mar-24 | 16 | 41 | Poor | Lower specific capacities measured when flowrate decreased and as river stage increased. Not interpreted as fouling. No action taken. |

**Table 3.3**
**Summary of NTH IRZ Well Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Aquifer Interval | Well Type | Operating Period | Monthly Average Specific Capacity (gpm/ft) | Baseline Specific Capacity | Well Performance | Response |
|---|---|---|---|---|---|---|---|
| PTI-1D | Lower | Extraction | Oct-23 | -- | -- | -- | NC |
| PTI-1D | Lower | Extraction | Nov-23 | 3.7 | -- | -- | NC |
| PTI-1D | Lower | Extraction | Dec-23 | 3.3 | 3.3 | Good | None needed. Well performance is good. |
| PTI-1D | Lower | Extraction | Jan-24 | 3.3 | 3.3 | Good | None needed. Well performance is good. |
| PTI-1D | Lower | Extraction | Feb-24 | 3.3 | 3.3 | Good | None needed. Well performance is good. |
| PTI-1D | Lower | Extraction | Mar-24 | 4.3 | 3.3 | Good | None needed. Well performance is good. |

**Notes:**
1. Specific capacities are calculated on five-minute intervals as flowrates measured from flowmeters divided by the change in water level measured from transducers compared to baseline. Baseline static water levels were adjusted by the typically observed difference in water levels at time of development and January, which is the month where water levels are at their lowest at the Site. Average monthly specific capacities were then calculated by averaging the five-minute interval specific capacities.
2. Target flowrates in the north (IRZ-15, IRZ-16, IRZ-17, IRZ-18, IRZ-20) are the nominal design flowrates. Target flowrates in the south (IRZ-27, IRZ-29, IRZ-31, IRZ-33, IRZ-35, IRZ-37, IRZ-39) are 1.5 times the nominal design flowrate.

**Acronyms and Abbreviations:**
-- = not operating or not applicable due to baseline not having been established yet
btoc = below top of casing
ft = foot
gpm = gallon per minute
ID = identification
IRZ = in-situ reactive zone
NC = no comment
NTH = National Trails Highway
SCADA = supervisory data control and acquisition

**Table 3.4**

**First Quarter 2024 Water Quality Field Parameters**

**First Quarter 2024 Well Perfomance Report**

**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| C-BNS | 02/14/2024 | nm | 7.98 | 1,106 | 2.00 | 12.03 | 13.1 | 0.49 | 550 | 117.5 |
| C-CON-D | 02/15/2024 | nm | 7.96 | 1,106 | 2.00 | 12.06 | 12.7 | 0.49 | 550 | 126.3 |
| C-CON-S | 02/15/2024 | nm | 7.97 | 1,105 | 2.00 | 12.07 | 12.7 | 0.49 | 550 | 127.8 |
| C-I-3-D | 02/14/2024 | nm | 7.91 | 1,104 | 1.00 | 12.11 | 12.5 | 0.49 | 550 | 112.8 |
| C-I-3-S | 02/14/2024 | nm | 7.93 | 1,104 | 1.00 | 12.25 | 12.5 | 0.49 | 550 | 113.5 |
| C-MAR-D | 02/15/2024 | nm | 7.96 | 1,225 | 6.00 | 11.03 | 12.1 | 0.55 | 610 | 101.9 |
| C-MAR-S | 02/15/2024 | nm | 7.76 | 1,240 | 5.00 | 11.15 | 12.4 | 0.55 | 620 | 88.6 |
| C-NR1-D | 02/15/2024 | nm | 7.99 | 1,105 | 1.00 | 12.15 | 12.7 | 0.49 | 550 | 132.3 |
| C-NR1-S | 02/15/2024 | nm | 8.03 | 1,104 | 1.00 | 12.23 | 12.8 | 0.49 | 550 | 133.7 |
| C-NR3-D | 02/15/2024 | nm | 8.01 | 1,105 | 1.00 | 12.82 | 12.9 | 0.49 | 550 | 135.8 |
| C-NR3-S | 02/15/2024 | nm | 8.01 | 1,105 | 1.00 | 12.64 | 13.0 | 0.49 | 550 | 134.7 |
| C-NR4-D | 02/15/2024 | nm | 8.03 | 1,104 | 1.00 | 12.64 | 13.2 | 0.49 | 550 | 136.9 |
| C-NR4-S | 02/15/2024 | nm | 8.02 | 1,104 | 1.00 | 12.53 | 13.2 | 0.49 | 550 | 136.4 |
| C-R22A-D | 02/14/2024 | nm | 7.97 | 1,106 | 2.00 | 12.12 | 13.2 | 0.49 | 550 | 106.9 |
| C-R22A-S | 02/14/2024 | nm | 7.97 | 1,106 | 2.00 | 12.35 | 13.3 | 0.49 | 550 | 111.2 |
| C-R27-D | 02/14/2024 | nm | 7.97 | 1,105 | 2.00 | 12.25 | 13.2 | 0.49 | 550 | 120.5 |
| C-R27-S | 02/14/2024 | nm | 7.98 | 1,105 | 2.00 | 12.24 | 13.3 | 0.49 | 550 | 121.3 |
| C-TAZ-D | 02/14/2024 | nm | 7.92 | 1,104 | 2.00 | 12.23 | 12.3 | 0.49 | 550 | 123.5 |
| C-TAZ-S | 02/14/2024 | nm | 7.77 | 1,105 | 2.00 | 12.27 | 12.4 | 0.49 | 550 | 125.8 |
| IRZ-09-100 | 02/12/2024 | nm | 7.66 | 9,993 | 1.80 | 36.70 | 23.9 | nm | nm | 2.7 |
| IRZ-13D-210 | 02/12/2024 | nm | 7.28 | 13,395 | 0.50 | 0.89 | 26.3 | nm | nm | 22.4 |
| IRZ-13S-095 | 02/12/2024 | nm | 7.39 | 8,396 | 5.00 | 3.90 | 25.1 | nm | nm | 12.6 |
| IRZ-21-065 | 02/12/2024 | nm | 7.33 | 9,282 | 2.40 | 1.87 | 24.2 | nm | nm | 30.3 |
| IRZ-21-157 | 02/12/2024 | nm | 7.14 | 9,825 | 2.50 | 1.08 | 23.7 | nm | nm | -41.1 |
| IRZ-23-143 | 02/12/2024 | nm | 7.28 | 8,717 | 0.40 | 1.98 | 7.3 | nm | nm | 66.6 |
| IRZ-25-100 | 02/12/2024 | nm | 7.00 | 8,994 | 4.80 | 4.28 | 24.0 | nm | nm | 53.2 |
| IRZ-25-166 | 02/12/2024 | nm | 6.89 | 10,943 | 1.10 | 2.65 | 26.4 | nm | nm | -43.4 |
| MARINA-1 | 03/13/2024 | 32.65 | 7.22 | 15,960 | 8.00 | 4.88 | 30.9 | 7.97 | 9,310 | 130.6 |
| MTS-1 | 02/14/2024 | nm | 6.41 | 2,786 | 10.00 | 1.77 | 20.1 | 1.45 | 1,810 | 41.3 |
| MTS-2 | 02/14/2024 | nm | 6.51 | 2,644 | 20.00 | 2.92 | 36.7 | 1.34 | 1,710 | 69.2 |
| MW-15 | 02/21/2024 | 187.51 | 7.15 | 2,322 | 2.00 | 5.31 | 27.6 | 1.09 | 1,180 | 97.5 |
| MW-20-070 | 01/11/2024 | 47.1 | 7.37 | 3,143 | 5.00 | 5.20 | 26.3 | 1.63 | 2,040 | 42.8 |
| MW-20-070 | 02/09/2024 | 46.89 | 7.78 | 2,644 | 17.00 | 3.63 | 25.9 | 1.36 | 1,800 | 165.6 |

**Table 3.4**
**First Quarter 2024 Water Quality Field Parameters**
**First Quarter 2024 Well Perfomance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-20-070 | 03/14/2024 | 45.31 | 7.71 | 2,674 | 24.00 | 6.20 | 26.9 | 1.38 | 1,730 | 114.9 |
| MW-20-100 | 01/11/2024 | 47.5 | 7.68 | 4,981 | 3.00 | 0.87 | 25.1 | 2.47 | 3,020 | -32.9 |
| MW-20-100 | 02/09/2024 | 47.3 | 7.69 | 3,800 | 6.00 | 1.88 | 24.7 | 2.00 | 2,580 | 156.9 |
| MW-20-100 | 03/14/2024 | 44.88 | 7.35 | 4,197 | 9.00 | 2.54 | 27.1 | 2.23 | 2,740 | 111.9 |
| MW-20-130 | 01/11/2024 | 47.92 | 7.59 | 10,638 | 6.00 | 0.12 | 26.0 | 6.00 | 6,900 | 148.5 |
| MW-20-130 | 02/09/2024 | 47.65 | 7.70 | 10,013 | 7.00 | 2.39 | 24.9 | 5.62 | 6,800 | 157.4 |
| MW-20-130 | 03/14/2024 | 45.86 | 7.08 | 11,445 | 6.00 | 0.70 | 26.8 | 6.51 | 7,450 | 108.7 |
| MW-21 | 01/11/2024 | 50.32 | 7.43 | 10,113 | 23.00 | 0.40 | 23.3 | 5.56 | 6,470 | 63.7 |
| MW-21 | 02/08/2024 | 51.22 | 7.70 | 9,403 | 26.00 | 1.19 | 23.9 | 5.23 | 6,310 | -8.8 |
| MW-21 | 03/14/2024 | 50.54 | 7.27 | 10,885 | 11.00 | 0.71 | 24.6 | 6.16 | 7,070 | 22.9 |
| MW-22 | 02/19/2024 | 6.27 | 6.91 | 37,896 | 19.50 | 0.18 | 24.6 | 0.24 | 24,750 | -152.4 |
| MW-26 | 01/10/2024 | 47.53 | 6.97 | 9,130 | 4.00 | 0.69 | 26.3 | 5.09 | 5,920 | -94.5 |
| MW-26 | 02/08/2024 | 48.33 | 7.43 | 8,257 | 8.00 | 0.77 | 25.2 | 4.58 | 5,610 | -75.0 |
| MW-26 | 03/14/2024 | 47.3 | 7.25 | 8,763 | 13.00 | 0.94 | 23.1 | 4.88 | 5,680 | -108.7 |
| MW-27-020 | 02/19/2024 | 7.42 | 7.67 | 1,215 | 4.00 | 3.55 | 19.2 | 0.61 | 790 | 1.3 |
| MW-27-060 | 02/19/2024 | 8.05 | 7.36 | 4,177 | 5.00 | 1.77 | 20.3 | 2.22 | 2,710 | -68.5 |
| MW-27-085 | 02/19/2024 | 7.96 | 7.50 | 13,291 | 2.00 | 3.20 | 20.6 | 7.68 | 8,640 | -53.0 |
| MW-28-025 | 02/20/2024 | 13.53 | 7.70 | 1,411 | 10.80 | 2.53 | 22.2 | 0.75 | 964 | 225.5 |
| MW-28-090 | 02/20/2024 | 14.3 | 7.48 | 7,998 | 12.00 | 4.15 | 21.8 | 4.60 | 5,550 | 221.9 |
| MW-29 | 02/20/2024 | 32.47 | 6.88 | 30,165 | 24.00 | 0.28 | 24.3 | 0.15 | 18,780 | -81.1 |
| MW-30-030R | 02/06/2024 | 14.9 | 8.50 | 7,885 | 18.70 | 0.79 | 22.0 | 4.67 | 5,500 | -25.8 |
| MW-30-050 | 01/09/2024 | 14.5 | 7.18 | 1,153 | 2.00 | 0.31 | 22.9 | 0.57 | 750 | 51.4 |
| MW-30-050 | 02/06/2024 | 14.51 | 8.16 | 1,919 | 19.50 | 0.04 | 20.6 | 1.08 | 1,370 | -30.6 |
| MW-30-050 | 03/12/2024 | 11.4 | 7.50 | 1,948 | 12.00 | 0.13 | 23.1 | 1.00 | 1,270 | -121.8 |
| MW-31-060 | 01/09/2024 | 41.88 | 7.61 | 9,723 | 5.00 | 0.00 | 25.5 | 5.46 | 6,310 | -73.4 |
| MW-31-060 | 02/08/2024 | 42.04 | 7.56 | 504 | 48.00 | 0.43 | 20.4 | 0.24 | 340 | -42.3 |
| MW-31-060 | 03/13/2024 | 39.96 | 7.72 | 8,960 | 10.00 | 1.07 | 25.8 | 5.00 | 5,830 | -248.8 |
| MW-31-135 | 01/09/2024 | 42.9 | 7.28 | 10,817 | 45.00 | 1.62 | 27.2 | 6.09 | 7,010 | 62.4 |
| MW-31-135 | 02/08/2024 | 42.77 | 7.55 | 10,236 | 30.00 | 0.68 | 26.0 | 5.75 | 6,940 | -42.3 |
| MW-31-135 | 03/13/2024 | 41 | 7.58 | 10,213 | 2.00 | 0.62 | 26.8 | 5.74 | 6,630 | -61.9 |
| MW-32-020 | 02/22/2024 | 8.87 | 7.39 | 25,239 | 19.00 | 0.85 | 22.0 | 0.16 | 17,290 | -82.3 |
| MW-32-035 | 02/22/2024 | 8.81 | 7.23 | 14,269 | 16.30 | 0.25 | 23.5 | 8.90 | 9,960 | -111.4 |
| MW-33-040 | 02/21/2024 | 34.28 | 7.66 | 11,172 | 8.00 | 1.30 | 25.5 | 5.58 | 6,330 | 42.2 |

**Table 3.4**
**First Quarter 2024 Water Quality Field Parameters**
**First Quarter 2024 Well Perfomance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-33-090 | 02/21/2024 | 34.32 | 7.10 | 9,790 | 4.00 | 0.29 | 26.6 | 4.89 | 5,490 | 31.8 |
| MW-33-150 | 02/21/2024 | 34.44 | 7.27 | 19,559 | 4.00 | 0.21 | 25.8 | 9.78 | 11,620 | 27.2 |
| MW-33-210 | 02/21/2024 | 33.35 | 7.36 | 12,333 | 4.00 | 0.40 | 25.8 | 6.16 | 7,050 | 37.3 |
| MW-34-055 | 02/07/2024 | 8.9 | 7.65 | 1,117 | 9.00 | 4.10 | 18.0 | 0.56 | 750 | 192.5 |
| MW-34-080 | 01/10/2024 | 9.41 | 7.80 | 9,799 | 5.00 | 0.00 | 18.8 | 5.53 | 6,370 | 100.2 |
| MW-34-080 | 02/07/2024 | 9.04 | 7.65 | 9,629 | 6.00 | 3.92 | 18.5 | 5.43 | 6,540 | 165.3 |
| MW-34-080 | 03/12/2024 | 5.6 | 7.43 | 10,284 | 6.00 | 0.09 | 20.4 | 5.82 | 6,680 | -84.2 |
| MW-34-100 | 02/07/2024 | 9.16 | 7.67 | 13,164 | 4.00 | 4.31 | 19.0 | 7.61 | 8,940 | 179.5 |
| MW-34-100 | 03/12/2024 | 5.74 | 7.82 | 13,264 | 4.00 | 0.07 | 19.9 | 7.67 | 8,530 | -73.3 |
| MW-35-060 | 02/16/2024 | 29.51 | 7.41 | 7,290 | 9.00 | 1.88 | 24.8 | 3.08 | 3,650 | 72.2 |
| MW-35-135 | 02/16/2024 | 28.6 | 7.58 | 12,362 | 11.00 | 0.24 | 24.5 | 6.19 | 7,090 | -35.8 |
| MW-36-020 | 02/08/2024 | 13.28 | 6.68 | 6,909 | 12.80 | 0.24 | 21.4 | 4.18 | 4,829 | -26.9 |
| MW-36-040 | 02/08/2024 | 17.54 | 7.15 | 1,245 | 9.70 | 0.23 | 20.3 | 0.68 | 885 | -104.5 |
| MW-36-050 | 02/08/2024 | 17.53 | 6.92 | 1,485 | 11.10 | 0.94 | 20.5 | 0.81 | 1,053 | -68.9 |
| MW-36-070 | 02/08/2024 | 17.12 | 7.01 | 1,229 | 7.80 | 0.21 | 20.7 | 0.67 | 870 | -62.3 |
| MW-36-090 | 01/10/2024 | 18.1 | 7.26 | 8,496 | 5.00 | 0.00 | 20.4 | 4.75 | 5,520 | -88.2 |
| MW-36-090 | 02/08/2024 | 17.52 | 6.79 | 7,095 | 11.10 | 2.46 | 20.7 | 4.28 | 5,020 | -51.9 |
| MW-36-090 | 03/12/2024 | 14.86 | 7.32 | 9,167 | 5.00 | 0.08 | 21.5 | 5.15 | 5,960 | -100.4 |
| MW-36-100 | 01/10/2024 | 18.14 | 7.13 | 9,507 | 2.00 | 4.22 | 20.4 | 5.36 | 6,160 | 169.5 |
| MW-36-100 | 02/08/2024 | 18.1 | 6.67 | 9,385 | 8.50 | 0.22 | 19.9 | 5.95 | 6,810 | -35.3 |
| MW-36-100 | 03/12/2024 | 14.9 | 7.32 | 10,253 | 7.00 | 0.09 | 21.5 | 5.80 | 6,660 | -85.5 |
| MW-38D | 02/22/2024 | 72.73 | 10.93 | 20,578 | 29.50 | 0.29 | 27.6 | 0.12 | 12,750 | -105.8 |
| MW-38S | 02/22/2024 | 71.23 | 8.67 | 2,299 | 25.80 | 0.88 | 27.9 | 1.11 | 1,425 | -52.9 |
| MW-39-040 | 01/09/2024 | 16.03 | 7.82 | 1,484 | 24.00 | 0.48 | 20.9 | 0.75 | 960 | -177.2 |
| MW-39-040 | 02/06/2024 | 15.95 | 8.62 | 1,989 | 17.80 | 0.52 | 19.8 | 1.15 | 1,410 | -77.6 |
| MW-39-040 | 03/12/2024 | 12.97 | 7.89 | 1,212 | 20.00 | 0.17 | 21.8 | 0.61 | 790 | -178.6 |
| MW-39-050 | 01/09/2024 | 15.92 | 7.39 | 1,059 | 2.00 | 0.24 | 21.6 | 0.52 | 680 | -59.2 |
| MW-39-050 | 02/06/2024 | 16.2 | 8.43 | 1,149 | 10.50 | 0.06 | 20.3 | 0.63 | 816 | -20.9 |
| MW-39-050 | 03/12/2024 | 12.95 | 7.34 | 6,528 | 4.00 | 0.12 | 22.3 | 3.59 | 4,260 | 3.0 |
| MW-39-060 | 01/09/2024 | 16.03 | 7.39 | 1,084 | 17.00 | 0.28 | 21.1 | 0.54 | 700 | -24.3 |
| MW-39-060 | 02/06/2024 | 16.54 | 8.39 | 1,235 | 13.30 | 0.69 | 21.0 | 0.66 | 876 | -23.5 |
| MW-39-060 | 03/12/2024 | 13.11 | 7.56 | 1,252 | 8.00 | 0.18 | 22.5 | 0.62 | 810 | -21.5 |
| MW-39-070 | 01/09/2024 | 16.19 | 7.30 | 3,587 | 2.00 | 0.18 | 21.3 | 1.89 | 2,320 | 27.0 |

**Table 3.4**
**First Quarter 2024 Water Quality Field Parameters**
**First Quarter 2024 Well Perfomance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-39-070 | 02/06/2024 | 16.22 | 8.28 | 1,919 | 12.20 | 0.45 | 18.9 | 1.14 | 1,422 | -15.6 |
| MW-39-070 | 03/12/2024 | 13.59 | 7.42 | 4,531 | 3.00 | 0.23 | 21.9 | 2.42 | 2,950 | 86.1 |
| MW-39-080 | 01/09/2024 | 16.13 | 7.14 | 6,691 | 18.00 | 0.38 | 21.3 | 3.67 | 4,360 | 7.4 |
| MW-39-080 | 02/06/2024 | 16.85 | 8.07 | 7,155 | 11.70 | 0.55 | 20.6 | 4.32 | 5,130 | -6.5 |
| MW-39-080 | 03/12/2024 | 13.64 | 7.34 | 6,528 | 4.00 | 0.12 | 22.3 | 3.59 | 4,260 | 3.0 |
| MW-39-100 | 01/09/2024 | 16.2 | 6.93 | 10,442 | 1.00 | 0.18 | 21.6 | 5.92 | 6,790 | 5.8 |
| MW-39-100 | 02/06/2024 | 13.36 | 8.05 | 16,487 | 18.20 | 0.46 | 20.7 | 0.11 | 11,830 | 1.8 |
| MW-39-100 | 03/12/2024 | 13.61 | 7.09 | 13,489 | 5.00 | 0.11 | 22.7 | 7.78 | 8,750 | -21.9 |
| MW-42-030 | 02/09/2024 | 11.85 | 7.11 | 1,729 | 8.70 | 0.27 | 21.6 | 0.94 | 1,199 | -83.2 |
| MW-42-055 | 02/09/2024 | 11.8 | 7.06 | 1,289 | 12.50 | 0.71 | 20.9 | 0.70 | 910 | -75.6 |
| MW-42-065 | 02/09/2024 | 11.41 | 6.65 | 8,312 | 18.00 | 3.07 | 20.6 | 5.10 | 5,900 | 7.1 |
| MW-43-025 | 02/15/2024 | 10.34 | 7.01 | 2,166 | 15.00 | 1.54 | 22.7 | 0.86 | 1,070 | -80.8 |
| MW-43-075 | 02/15/2024 | 10.6 | 7.19 | 13,795 | 9.00 | 1.76 | 21.7 | 6.25 | 6,880 | -98.5 |
| MW-43-090 | 02/15/2024 | 10.81 | 7.40 | 18,805 | 5.00 | 1.33 | 21.7 | 9.02 | 9,580 | -94.8 |
| MW-44-070 | 02/07/2024 | 19.89 | 7.55 | 2,415 | 17.00 | 1.99 | 20.1 | 1.25 | 1,640 | 160.6 |
| MW-44-115 | 01/10/2024 | 20.46 | 7.58 | 15,770 | 4.00 | 0.00 | 19.6 | 9.23 | 10,240 | 114.7 |
| MW-44-115 | 02/07/2024 | 19.78 | 7.68 | 15,117 | 5.00 | 3.31 | 19.5 | 8.84 | 10,280 | 159.3 |
| MW-44-115 | 03/11/2024 | 17.01 | 8.05 | 15,438 | 5.00 | 2.99 | 22.1 | 9.05 | 10,030 | 21.3 |
| MW-44-125 | 01/10/2024 | 20.24 | 7.81 | 15,165 | 6.00 | 0.00 | 19.9 | 8.85 | 9,820 | 104.5 |
| MW-44-125 | 02/07/2024 | 19.98 | 7.56 | 14,631 | 7.00 | 2.42 | 20.3 | 8.52 | 9,940 | 148.2 |
| MW-44-125 | 03/11/2024 | 16.67 | 8.45 | 14,889 | 5.00 | 0.17 | 21.9 | 8.66 | 9,690 | -129.9 |
| MW-45-095A | 01/10/2024 | 16.72 | 7.34 | 9,454 | 3.00 | 0.02 | 19.9 | 5.32 | 6,140 | 138.4 |
| MW-45-095A | 02/07/2024 | 16.34 | 7.67 | 9,073 | 3.00 | 3.17 | 19.6 | 5.10 | 6,170 | 178.1 |
| MW-45-095A | 03/12/2024 | 13.18 | 7.66 | 9,200 | 3.00 | 0.14 | 22.7 | 5.17 | 5,990 | -105.8 |
| MW-46-175 | 02/22/2024 | 29.41 | 8.20 | 19,776 | 3.00 | 0.31 | 21.8 | 9.89 | 11,820 | 50.2 |
| MW-46-205 | 02/22/2024 | 29.64 | 8.21 | 23,205 | 3.00 | 0.20 | 22.3 | 0.12 | 14,030 | 34.9 |
| MW-47-115 | 02/22/2024 | 31.1 | 7.85 | 16,599 | 36.00 | 0.55 | 25.8 | 9.51 | 10,570 | -52.8 |
| MW-49-135 | 02/20/2024 | 30.81 | 7.74 | 14,697 | 8.00 | 1.16 | 24.6 | 7.35 | 8,520 | 62.1 |
| MW-49-275 | 02/20/2024 | 31.5 | 8.04 | 25,755 | 3.00 | 0.31 | 24.4 | 0.13 | 15,710 | 33.2 |
| MW-49-365 | 02/20/2024 | 33.11 | 7.48 | 37,710 | 3.00 | 0.21 | 24.4 | 0.19 | 23,920 | 32.8 |
| MW-51 | 01/10/2024 | 46.74 | 7.05 | 6,345 | 2.00 | 0.39 | 24.5 | 3.45 | 4,120 | -186.2 |
| MW-51 | 02/08/2024 | 47.83 | 7.29 | 991 | 23.00 | 0.81 | 25.5 | 0.49 | 670 | -59.5 |
| MW-51 | 03/14/2024 | 46.39 | 6.85 | 860 | 14.00 | 0.36 | 25.9 | 0.42 | 550 | -173.4 |

**Table 3.4**
**First Quarter 2024 Water Quality Field Parameters**
**First Quarter 2024 Well Perfomance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-52D | 02/21/2024 | 13.03 | 7.05 | 20,902 | 6.00 | 0.28 | 20.5 | 0.14 | 14,850 | 190.5 |
| MW-52M | 02/21/2024 | 12.7 | 6.95 | 16,615 | 13.00 | 0.39 | 20.6 | 0.11 | 11,750 | 163.9 |
| MW-52S | 02/21/2024 | 12.89 | 7.11 | 13,799 | 11.00 | 0.25 | 21.1 | 8.68 | 9,690 | 144.9 |
| MW-53D | 02/21/2024 | 17.81 | 7.31 | 25,645 | 11.10 | 0.52 | 20.3 | 0.17 | 18,290 | 169.1 |
| MW-53M | 02/21/2024 | 16.9 | 7.14 | 16,128 | 17.00 | 0.20 | 19.6 | 0.11 | 11,710 | 190.2 |
| MW-53S | 02/21/2024 | 17.22 | 7.58 | 1,396 | 12.80 | 0.21 | 19.9 | 0.78 | 998 | 147.5 |
| MW-57-070 | 02/20/2024 | 54.7 | 7.50 | 1,061 | 48.00 | 0.86 | 27.4 | 0.52 | 690 | -84.5 |
| MW-58BR | 02/20/2024 | 68.97 | 7.64 | 7,997 | 8.00 | 0.26 | 28.0 | 4.40 | 5,190 | -30.8 |
| MW-60-125 | 02/20/2024 | 101.41 | 7.53 | 7,970 | 40.00 | 1.01 | 26.6 | 4.39 | 5,170 | 4.7 |
| MW-62-065 | 02/20/2024 | 50.42 | 7.41 | 6,373 | 7.00 | 2.13 | 27.2 | 3.47 | 4,140 | 53.3 |
| MW-63-065 | 02/20/2024 | 51.6 | 7.19 | 6,808 | 6.00 | 1.51 | 24.6 | 3.73 | 4,420 | 26.0 |
| MW-64BR | 02/20/2024 | 122.26 | 7.66 | 13,047 | 26.00 | 0.12 | 26.5 | 7.49 | 8,490 | -175.6 |
| MW-65-160 | 02/19/2024 | 142.65 | 6.96 | 4,648 | 29.00 | 2.52 | 27.2 | 2.32 | 2,470 | 70.3 |
| MW-65-225 | 02/19/2024 | 142.45 | 7.15 | 8,093 | 5.00 | 2.58 | 27.5 | 4.03 | 4,450 | 75.2 |
| MW-67-185 | 01/11/2024 | 171.77 | 7.17 | 5,003 | 18.00 | 0.13 | 23.8 | 2.69 | 3,250 | 191.3 |
| MW-68-180 | 01/11/2024 | 166.78 | 7.30 | 4,428 | 16.00 | 0.05 | 26.8 | 2.34 | 2,860 | 209.3 |
| MW-69-195 | 02/19/2024 | 176.82 | 7.22 | 2,113 | 45.00 | 0.92 | 27.4 | 0.86 | 1,070 | 46.6 |
| MW-70BR-225 | 02/20/2024 | 82.32 | 7.57 | 13,383 | 5.00 | 0.49 | 26.9 | 6.69 | 7,680 | 55.1 |
| MW-71-035 | 01/11/2024 | 28.7 | 7.23 | 8,192 | 27.00 | 0.16 | 18.7 | 4.57 | 5,330 | 42.3 |
| MW-71-035 | 02/08/2024 | 29.35 | 7.46 | 6,430 | 30.00 | 1.66 | 20.9 | 4.10 | 5,030 | 78.7 |
| MW-71-035 | 03/14/2024 | 29.12 | 7.11 | 8,112 | 29.00 | 3.78 | 21.1 | 4.50 | 5,260 | 82.2 |
| MW-72-080 | 02/20/2024 | 59.95 | 7.91 | 16,394 | 50.00 | 0.76 | 25.9 | 9.60 | 10,660 | -16.3 |
| MW-75-033 | 02/12/2024 | 20.99 | 5.17 | 3,131 | 50.00 | 1.70 | 27.0 | 1.63 | 2,030 | 37.8 |
| MW-75-117 | 02/12/2024 | 21 | 5.24 | 13,559 | 18.00 | 0.16 | 26.4 | 7.79 | 8,800 | 65.9 |
| MW-75-202 | 02/12/2024 | 20.45 | 7.44 | 18,259 | 1.00 | 0.06 | 24.8 | 0.11 | 11,860 | 58.1 |
| MW-75-267 | 02/12/2024 | 19.85 | 8.90 | 22,981 | 1.00 | 0.18 | 23.2 | 0.14 | 14,940 | 62.3 |
| MW-75-337 | 02/12/2024 | 22.45 | 8.77 | 29,632 | 1.00 | 4.65 | 23.5 | 0.18 | 19,260 | 46.4 |
| MW-76-039 | 01/08/2024 | 28.42 | 7.76 | 9,105 | 17.00 | 7.26 | 25.3 | 5.09 | 5,920 | 97.7 |
| MW-76-039 | 02/05/2024 | 28.57 | 7.24 | 8,407 | 13.00 | 1.94 | 26.0 | 4.66 | 5,700 | 177.8 |
| MW-76-039 | 03/13/2024 | 26.47 | 7.06 | 10,300 | 11.00 | 1.01 | 28.3 | 5.79 | 6,700 | 36.5 |
| MW-76-156 | 01/08/2024 | 29 | 7.10 | 13,254 | 6.00 | 2.89 | 26.0 | 7.61 | 8,600 | 168.8 |
| MW-76-156 | 02/05/2024 | 28.44 | 7.32 | 8,965 | 20.00 | 1.05 | 25.4 | 5.01 | 6,090 | -85.3 |
| MW-76-156 | 03/13/2024 | 25.91 | 7.14 | 10,236 | 7.00 | 0.18 | 29.2 | 5.76 | 6,670 | -47.2 |

**Table 3.4**
**First Quarter 2024 Water Quality Field Parameters**
**First Quarter 2024 Well Perfomance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-76-181 | 01/08/2024 | 28.76 | 7.15 | 9,870 | 4.00 | 1.90 | 25.4 | 5.55 | 6,420 | 202.5 |
| MW-76-181 | 02/05/2024 | 28.2 | 7.35 | 9,021 | 15.00 | 0.70 | 25.5 | 5.04 | 6,140 | -52.1 |
| MW-76-181 | 03/13/2024 | 26.61 | 7.54 | 10,262 | 4.00 | 0.23 | 27.9 | 5.78 | 6,680 | -101.6 |
| MW-76-218 | 01/08/2024 | 28.64 | 7.44 | 12,155 | 6.00 | 2.05 | 25.3 | 6.94 | 7,900 | 173.6 |
| MW-76-218 | 02/05/2024 | 27.94 | 7.38 | 9,652 | 8.00 | 0.80 | 24.6 | 5.42 | 6,560 | -77.3 |
| MW-76-218 | 03/13/2024 | 25.87 | 7.92 | 10,871 | 3.00 | 0.23 | 30.1 | 6.11 | 7,060 | -203.7 |
| MW-77-046 | 01/08/2024 | 26.06 | 7.35 | 9,975 | 10.00 | 0.62 | 24.1 | 5.62 | 6,480 | -79.4 |
| MW-77-046 | 02/05/2024 | 26.66 | 8.16 | 9,701 | 13.20 | 1.67 | 25.1 | 5.42 | 6,290 | -57.2 |
| MW-77-046 | 03/13/2024 | 24.33 | 7.43 | 8,190 | 4.00 | 0.28 | 27.2 | 4.52 | 5,310 | -84.6 |
| MW-77-102 | 01/08/2024 | 26.49 | 7.03 | 8,142 | 14.00 | 0.26 | 24.9 | 4.51 | 5,290 | -106.8 |
| MW-77-102 | 02/05/2024 | 26.4 | 8.39 | 9,095 | 9.00 | 1.10 | 23.7 | 5.20 | 6,020 | -270.4 |
| MW-77-102 | 03/13/2024 | 24.15 | 7.67 | 11,522 | 9.00 | 0.22 | 27.0 | 6.52 | 7,490 | -151.4 |
| MW-77-158 | 01/08/2024 | 25.51 | 7.01 | 8,789 | 1.00 | 0.41 | 24.6 | 4.89 | 5,700 | -111.2 |
| MW-77-158 | 02/05/2024 | 25.31 | 8.49 | 9,074 | 16.40 | 2.85 | 23.0 | 5.24 | 6,020 | -251.5 |
| MW-77-158 | 03/13/2024 | 23.51 | 7.23 | 9,050 | 9.00 | 0.39 | 27.4 | 5.04 | 5,880 | -109.1 |
| MW-77-187 | 01/08/2024 | 25.43 | 7.75 | 7,784 | 1.00 | 0.47 | 23.7 | 4.31 | 5,060 | -248.9 |
| MW-77-187 | 02/05/2024 | 25.1 | 8.92 | 8,479 | 16.00 | 0.06 | 20.4 | 5.28 | 6,020 | -257.2 |
| MW-77-187 | 03/13/2024 | 23.39 | 8.21 | 8,972 | 30.00 | 0.18 | 27.5 | 5.00 | 5,900 | -248.5 |
| MW-78-070 | 01/10/2024 | 48.11 | 7.03 | 8,568 | 49.00 | 1.04 | 26.2 | 4.75 | 5,560 | 8.2 |
| MW-78-070 | 02/07/2024 | 48.49 | 7.85 | 10,591 | 15.80 | 0.97 | 25.4 | 5.93 | 6,820 | 0.2 |
| MW-78-070 | 03/14/2024 | 47.01 | 7.04 | 8,984 | 46.00 | 0.23 | 27.6 | 5.00 | 5,840 | -17.6 |
| MW-78-142 | 01/10/2024 | 48.26 | 7.18 | 8,875 | 2.00 | 1.08 | 26.3 | 4.94 | 5,760 | 12.8 |
| MW-78-142 | 02/07/2024 | 84.95 | 8.05 | 10,759 | 15.20 | 0.93 | 24.3 | 6.17 | 7,120 | -6.9 |
| MW-79-058 | 01/10/2024 | 46.9 | 6.97 | 8,479 | 45.00 | 2.92 | 25.7 | 4.71 | 5,520 | 39.8 |
| MW-79-058 | 02/07/2024 | 47.67 | 7.77 | 10,749 | 20.00 | 1.86 | 27.2 | 5.81 | 6,730 | 4.5 |
| MW-79-058 | 03/14/2024 | 46.43 | 7.12 | 9,145 | 12.00 | 0.89 | 25.3 | 5.11 | 5,940 | 40.8 |
| MW-79-102 | 01/10/2024 | 46.86 | 7.03 | 8,849 | 5.00 | 0.77 | 25.4 | 4.93 | 5,740 | -60.1 |
| MW-79-102 | 02/07/2024 | 47.23 | 7.96 | 10,398 | 19.50 | 0.99 | 24.6 | 5.89 | 6,750 | -6.3 |
| MW-79-102 | 03/14/2024 | 46.26 | 7.20 | 8,915 | 17.00 | 0.55 | 25.1 | 4.97 | 5,780 | -13.8 |
| MW-80-057 | 01/10/2024 | 48.41 | 6.95 | 8,779 | 26.00 | 1.23 | 25.4 | 4.88 | 5,700 | -17.0 |
| MW-80-057 | 02/07/2024 | 50 | 7.73 | 11,269 | 13.50 | 2.86 | 28.0 | 6.00 | 6,910 | -22.5 |
| MW-80-082 | 01/10/2024 | 48.33 | 6.94 | 8,783 | 10.00 | 0.75 | 25.5 | 4.89 | 5,710 | -70.6 |
| MW-80-082 | 02/07/2024 | 41.34 | 7.87 | 10,969 | 10.20 | 0.85 | 26.5 | 5.83 | 6,750 | -22.9 |

**Table 3.4**

**First Quarter 2024 Water Quality Field Parameters**

**First Quarter 2024 Well Perfomance Report**

**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-80-082 | 03/14/2024 | 48.45 | 7.02 | 9,986 | 19.00 | 0.18 | 28.2 | 5.58 | 6,480 | -11.5 |
| MW-81-043 | 01/10/2024 | 25.41 | 7.86 | 8,405 | 24.00 | 2.46 | 24.3 | 4.67 | 5,460 | 70.7 |
| MW-81-043 | 02/08/2024 | 25.53 | 7.72 | 8,338 | 15.00 | 2.47 | 24.0 | 4.64 | 5,670 | 193.3 |
| MW-81-043 | 03/13/2024 | 23.54 | 7.27 | 8,455 | 2.00 | 1.30 | 26.9 | 4.68 | 5,490 | 50.6 |
| MW-81-098 | 01/10/2024 | 25.74 | 7.42 | 9,569 | 12.00 | 3.73 | 24.2 | 5.36 | 6,250 | 35.4 |
| MW-81-098 | 02/08/2024 | 25.6 | 7.29 | 11,215 | 8.00 | 0.93 | 26.6 | 6.14 | 7,060 | 39.1 |
| MW-81-098 | 03/13/2024 | 23.6 | 7.67 | 10,229 | 2.00 | 0.94 | 27.0 | 5.75 | 6,640 | -38.6 |
| MW-82-046 | 01/09/2024 | 31.65 | 7.93 | 13,733 | 45.00 | 0.00 | 23.7 | 7.93 | 8,890 | 61.5 |
| MW-82-046 | 02/06/2024 | 31.92 | 7.54 | 13,882 | 33.00 | 1.10 | 23.9 | 8.04 | 9,450 | -29.5 |
| MW-82-046 | 03/13/2024 | 31.09 | 7.46 | 15,101 | 50.00 | 3.45 | 25.4 | 8.77 | 9,810 | -63.6 |
| MW-82-112 | 02/06/2024 | 32.11 | 7.55 | 9,680 | 5.00 | 4.23 | 24.5 | 5.46 | 6,580 | 179.7 |
| MW-82-168 | 01/09/2024 | 30.74 | 7.62 | 8,823 | 12.00 | 0.00 | 23.0 | 4.94 | 5,750 | 106.9 |
| MW-82-168 | 02/06/2024 | 30.14 | 7.58 | 8,907 | 12.00 | 1.06 | 23.3 | 4.98 | 6,070 | -5.6 |
| MW-82-168 | 03/13/2024 | 28.14 | 7.18 | 10,391 | 15.00 | 0.22 | 26.0 | 5.86 | 6,750 | -65.1 |
| MW-82-198 | 01/09/2024 | 30.53 | 7.92 | 8,868 | 11.00 | 0.00 | 23.6 | 4.96 | 5,770 | 169.1 |
| MW-82-198 | 02/06/2024 | 30.02 | 7.58 | 8,516 | 8.00 | 1.55 | 22.9 | 4.74 | 5,780 | 124.4 |
| MW-82-198 | 03/13/2024 | 28.26 | 8.01 | 9,582 | 5.00 | 0.19 | 26.0 | 5.37 | 6,230 | -146.6 |
| MW-86-030 | 02/20/2024 | 15.14 | 7.85 | 1,225 | 20.00 | 1.69 | 21.6 | 0.65 | 849 | -175.1 |
| MW-86-066 | 02/20/2024 | 14.4 | 7.47 | 8,310 | 17.50 | 2.40 | 21.3 | 4.98 | 5,790 | -110.9 |
| MW-86-120 | 02/20/2024 | 15 | 7.93 | 11,425 | 14.00 | 0.10 | 21.4 | 6.93 | 7,880 | -250.8 |
| MW-86-140 | 02/20/2024 | 15.19 | 7.89 | 14,110 | 18.50 | 8.86 | 21.5 | 8.79 | 9,800 | -214.2 |
| MW-87-109 | 01/10/2024 | 92.98 | 7.34 | 2,754 | 15.00 | 3.03 | 27.1 | 1.42 | 1,780 | 42.3 |
| MW-88-107 | 01/11/2024 | 92.11 | 7.32 | 749 | 19.00 | 0.07 | 25.5 | 0.36 | 480 | 135.2 |
| MW-88-107 | 02/22/2024 | 92.55 | 7.54 | 783 | 11.00 | 4.15 | 26.8 | 0.33 | 390 | 107.4 |
| MW-90-031 | 02/21/2024 | 6.7 | 7.05 | 19,129 | 10.70 | 0.22 | 23.6 | 0.12 | 12,740 | 211.4 |
| MW-96-045 | 02/22/2024 | 30.78 | 7.29 | 13,514 | 34.00 | 0.76 | 25.5 | 6.77 | 7,800 | 14.2 |
| MW-96-217 | 02/22/2024 | 30.62 | 7.14 | 20,318 | 7.00 | 0.33 | 25.5 | 0.10 | 12,100 | 24.1 |
| MW-97-042 | 02/16/2024 | 29.13 | 7.63 | 3,632 | 50.00 | 2.12 | 26.7 | 1.90 | 2,350 | 27.4 |
| MW-97-202 | 02/16/2024 | 29.41 | 7.38 | 19,004 | 5.00 | 0.29 | 26.4 | 0.11 | 12,370 | -99.6 |

**Table 3.4**
**First Quarter 2024 Water Quality Field Parameters**
**First Quarter 2024 Well Perfomance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| PT5D | 01/09/2024 | 22.26 | 7.07 | 12,089 | 3.00 | 0.57 | 21.3 | 6.92 | 7,850 | -74.8 |
| PT5D | 02/19/2024 | 21.19 | 7.59 | 14,918 | 16.60 | 0.47 | 24.9 | 8.69 | 9,740 | -172.1 |
| PT5D | 03/11/2024 | 19.37 | 7.70 | 8,719 | 11.00 | 0.14 | 23.7 | 4.87 | 5,680 | -113.8 |
| PT5M | 02/19/2024 | 20.19 | 7.52 | 4,749 | 10.00 | 0.35 | 25.3 | 2.53 | 3,070 | -164.0 |
| PT5S | 02/19/2024 | 20.21 | 7.86 | 1,375 | 7.20 | 0.43 | 24.6 | 0.66 | 904 | -208.1 |
| PT6D | 01/09/2024 | 24.7 | 6.98 | 7,234 | 2.00 | 0.47 | 22.1 | 3.99 | 4,700 | -68.2 |
| PT6D | 02/08/2024 | 23.6 | 7.06 | 5,359 | 8.20 | 0.89 | 20.0 | 3.23 | 3,846 | -132.5 |
| PT6D | 03/11/2024 | 21.79 | 7.47 | 6,922 | 7.00 | 0.13 | 23.6 | 3.80 | 4,500 | -94.6 |
| PTI-1D | 02/12/2024 | nm | 7.17 | 10,115 | 0.90 | 1.54 | 20.9 | nm | nm | 50.0 |
| PTI-1D | 03/20/2024 | nm | 6.84 | 10,855 | 4.90 | 2.33 | 20.8 | nm | nm | 96.6 |
| R-19 | 02/15/2024 | nm | 7.84 | 1,107 | 2.00 | 12.21 | 12.5 | 0.49 | 550 | 109.6 |
| R-28 | 02/14/2024 | nm | 7.84 | 1,105 | 2.00 | 12.33 | 13.5 | 0.49 | 550 | 114.5 |
| R-63 | 02/14/2024 | nm | 7.76 | 1,108 | 2.00 | 12.07 | 12.5 | 0.49 | 550 | 112.9 |
| RRB | 02/15/2024 | nm | 7.92 | 1,107 | 3.00 | 11.99 | 12.5 | 0.49 | 550 | 117.5 |
| SW1 | 02/14/2024 | nm | 7.87 | 1,106 | 2.00 | 12.09 | 13.1 | 0.49 | 550 | 100.5 |
| SW2 | 02/14/2024 | nm | 7.80 | 1,102 | 3.00 | 11.76 | 12.9 | 0.49 | 550 | 105.6 |
| Topock-2 | 03/14/2024 | nm | 7.71 | 1,453 | 2.00 | 5.42 | 28.9 | 0.68 | 720 | 106.3 |
| Topock-3 | 03/14/2024 | nm | 7.77 | 1,701 | 3.00 | 3.32 | 29.8 | 0.81 | 850 | 88.6 |
| TW-02D | 01/09/2024 | 41.41 | 7.33 | 9,178 | 4.00 | 1.44 | 27.3 | 5.10 | 5,940 | 74.6 |
| TW-02D | 02/06/2024 | 41.26 | 7.44 | 8,848 | 6.00 | 2.20 | 27.0 | 4.91 | 6,010 | 177.7 |
| TW-02D | 03/12/2024 | 39.14 | 7.41 | 10,261 | 2.00 | 0.03 | 28.4 | 5.76 | 6,670 | 26.4 |
| TW-02S | 01/09/2024 | 41.22 | 7.55 | 7,878 | 3.00 | 3.69 | 27.1 | 4.34 | 5,120 | 84.2 |
| TW-02S | 02/06/2024 | 41.34 | 7.45 | 7,638 | 3.00 | 3.23 | 27.3 | 4.20 | 5,180 | 58.1 |
| TW-02S | 03/12/2024 | 39.36 | 7.00 | 9,040 | 3.00 | 1.52 | 28.3 | 5.03 | 5,880 | 103.4 |
| TW-03D | 01/09/2024 | 41.1 | 7.55 | 9,360 | 6.00 | 1.38 | 27.7 | 5.22 | 6,090 | 54.3 |
| TW-03D | 02/06/2024 | 40.95 | 7.47 | 8,623 | 4.00 | 2.02 | 27.1 | 4.78 | 5,860 | 178.3 |

**Table 3.4**

**First Quarter 2024 Water Quality Field Parameters**

**First Quarter 2024 Well Perfomance Report**

**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Sample Date | Depth to Water (ft bTOC) | pH | Specific Conductance (µS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature (deg C) | Salinity (ppt) | Total Dissolved Solids (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|
| TW-03D | 03/12/2024 | 38.92 | 7.35 | 10,211 | 1.00 | 0.33 | 28.6 | 5.73 | 6,640 | 71.1 |
| TW-04 | 02/14/2024 | 31.74 | 7.86 | 24,632 | 5.00 | 3.21 | 27.5 | 0.11 | 12,330 | 105.4 |

**Notes:**

a Well was not sampled this reporting period because there was an insufficient volume of groundwater.

ppt = parts per thousand

µS/cm = microSiemens per centimeter

deg C = degrees Celsius

ft bTOC = feet below the top of casing

mg/L = milligrams per liter

mV = millivolts

nm = parameter was not measured

NTU = nephelometric turbidity units

ORP = oxidation-reduction potential

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| FW-02B-127 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| HNWR-01A-174 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| HNWR-01A-98 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| Marina-1 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MTS-1 | 02-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MTS-2 | 02-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-15 | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-070 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-070 | 02-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-070 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-100 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-100 | 02-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-100 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-130 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-130 | 02-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-20-130 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-21 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-21 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-21 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-22 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-26 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-26 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-26 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-27-020 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-27-060 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-27-085 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-28-025 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-28-090 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-29 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-30-030R | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-30-050 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-30-050 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-30-050 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-31-060 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-31-060 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-31-060 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-31-135 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-31-135 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-31-135 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-32-020 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-32-035 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-33-040 | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-33-090 | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-33-150 | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-33-210 | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-34-055 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-34-080 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-34-080 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-34-080 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-34-100 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-34-100 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-35-060 | 02-16-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-35-135 | 02-16-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-020 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-040 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-050 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-070 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-090 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-36-090 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-090 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-100 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-100 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-36-100 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-38D | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-38S | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-040 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-040 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-040 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-050 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-050 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-050 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-050 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-060 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-060 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-060 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-070 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-070 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-070 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-080 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-080 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-080 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-100 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-100 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-39-100 | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-42-030 | 02-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-42-055 | 02-09-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-42-065 | 02-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-43-025 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-43-075 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-43-090 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-070 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-115 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-115 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-115 | 03-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-125 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-125 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-44-125 | 03-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-45-095a | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-45-095a | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-45-095a | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-46-175 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-46-205 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-47-115 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-49-135 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-49-275 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-49-365 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-51 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-51 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-51 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-52D | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-52M | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-52S | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-53D | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-53M | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-53S | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-65-160 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-65-225 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-67-185 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-68-180 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-69-195 | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-71-035 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-71-035 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-71-035 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-75-033 | 02-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-75-117 | 02-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-75-202 | 02-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-75-267 | 02-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-75-337 | 02-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-039 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-039 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-039 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-156 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-156 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-156 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-181 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-181 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-181 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-218 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-218 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-76-218 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-046 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-046 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-046 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-102 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-77-102 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-102 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-158 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-158 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-158 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-187 | 01-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-187 | 02-05-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-77-187 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-78-070 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-78-070 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-78-070 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-78-142 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-78-142 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-78-142 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-79-058 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-79-058 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-79-058 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-79-102 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-79-102 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-79-102 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-80-057 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-80-057 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-80-057 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-80-082 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-80-082 | 02-07-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-80-082 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-81-043 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-81-043 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-81-043 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-81-098 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-81-098 | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-81-098 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-046 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-046 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-046 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-112 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-168 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-168 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-168 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-198 | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-198 | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-82-198 | 03-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-86-030 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-86-066 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-86-120 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-86-140 | 02-20-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-87-109 | 01-10-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-88-107 | 01-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-88-107 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-90-031 | 02-21-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-94-030 | 02-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-94-100 | 02-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-94-175 | 02-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-96-045 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-96-217 | 02-22-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-97-042 | 02-16-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-97-202 | 02-16-2024 | Yes | Yes | Yes | Good | -- | -- |
| MW-99-060 | 02-13-2024 | Yes | Yes | Yes | Good | -- | -- |

**Table 4.1**
**Monitoring Well Inspection Results**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Location | Date | Scope of Work Completed? | Well Inspection Completed? | Is the Well Labeled Properly? | Is the Well in Good Condition? | Description of Deficiencies (if noted) | Well Inspection Comments |
|---|---|---|---|---|---|---|---|
| MW-99-140 | 02-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| PGE-09N | 02-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| PGE-09S | 02-13-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT5D | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT5D | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT5D | 03-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT5M | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT5S | 02-19-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT6D | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT6D | 02-08-2024 | Yes | Yes | Yes | Good | -- | -- |
| PT6D | 03-11-2024 | Yes | Yes | Yes | Good | -- | -- |
| Site B-165 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| Site B-220 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| Site B-285 | 02-15-2024 | Yes | Yes | Yes | Good | -- | -- |
| Topock-2 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| Topock-3 | 03-14-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-02D | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-02D | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-02D | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-02S | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-02S | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-02S | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-03D | 01-09-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-03D | 02-06-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-03D | 03-12-2024 | Yes | Yes | Yes | Good | -- | -- |
| TW-04 | 02-14-2024 | Yes | Yes | Yes | Good | -- | -- |

**Acronyms and Abbreviations:**
-- = no comment

**Table 4.2**
**Monitoring Well Water Levels and Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Well Screen Lithology | Sample Date | Constructed Well Depth (feet bTOC) | Measured Well Depth (feet bTOC) | Difference in Constructed and Measured Well Depth (feet) | Screen Start Depth (feet bTOC) | Screen End Depth (feet bTOC) | Pre-Purge Depth to Water (feet bTOC) | Post-Purge Depth to Water (feet bTOC) | Drawdown During Purging (feet) | Purging Rate (ml/min) | Specific Capacity (gpm/feet) | Measured Depth Covering Greater than 20% of screen? | Flagged for Evaluation | Planned for Resurvey | Planned for Redevelopment | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-15 | Alluvial | 02/21/2024 | 204.90 | 200.50 | 4.40 | 182.40 | 202.40 | 187.51 | 187.55 | 0.04 | 500 | 3.30 | No | | | | |
| MW-20-070 | Alluvial | 01/11/2024 | 69.69 | 68.40 | 1.29 | 49.69 | 69.69 | 47.10 | 47.20 | 0.10 | 500 | 1.32 | No | | | | |
| MW-20-070 | Alluvial | 02/09/2024 | 69.69 | 68.38 | 1.31 | 49.69 | 69.69 | 46.89 | 47.00 | 0.11 | 500 | 1.20 | No | | | | |
| MW-20-070 | Alluvial | 03/14/2024 | 69.69 | 68.40 | 1.29 | 49.69 | 69.69 | 45.31 | 45.40 | 0.09 | 500 | 1.47 | No | | | | |
| MW-20-100 | Alluvial | 01/11/2024 | 100.49 | 98.08 | 2.41 | 88.59 | 98.59 | 47.50 | 47.50 | 0.00 | 500 | N/A | No | | | | |
| MW-20-100 | Alluvial | 02/09/2024 | 100.49 | 98.06 | 2.43 | 88.59 | 98.59 | 47.30 | 47.40 | 0.10 | 500 | 1.32 | No | | | | |
| MW-20-100 | Alluvial | 03/14/2024 | 100.49 | 98.08 | 2.41 | 88.59 | 98.59 | 44.88 | 44.88 | 0.00 | 500 | N/A | No | | | | |
| MW-20-130 | Alluvial | 01/11/2024 | 131.49 | 129.57 | 1.92 | 120.15 | 130.15 | 47.92 | 48.00 | 0.08 | 500 | 1.65 | No | | | | |
| MW-20-130 | Alluvial | 02/09/2024 | 131.49 | 129.55 | 1.94 | 120.15 | 130.15 | 47.65 | 47.75 | 0.10 | 500 | 1.32 | No | | | | |
| MW-20-130 | Alluvial | 03/14/2024 | 131.49 | 129.53 | 1.96 | 120.15 | 130.15 | 45.86 | 45.86 | 0.00 | 500 | N/A | No | | | | |
| MW-21 | Alluvial | 01/11/2024 | 58.95 | 58.33 | 0.62 | 38.45 | 58.45 | 50.32 | 51.08 | 0.76 | 100 | 0.03 | No | | | | |
| MW-21 | Alluvial | 02/08/2024 | 58.95 | 58.35 | 0.60 | 38.45 | 58.45 | 51.22 | 52.02 | 0.80 | 100 | 0.03 | No | | | | |
| MW-21 | Alluvial | 03/14/2024 | 58.95 | 58.30 | 0.65 | 38.45 | 58.45 | 50.54 | 51.03 | 0.49 | 100 | 0.05 | No | | | | |
| MW-22 | Fluvial | 02/19/2024 | 12.05 | 10.90 | 1.15 | 5.15 | 10.15 | 6.27 | 6.28 | 0.01 | 500 | 13.21 | No | | | | |
| MW-26 | Alluvial | 01/10/2024 | 70.82 | 69.27 | 1.55 | 50.82 | 70.82 | 47.53 | 47.64 | 0.11 | 500 | 1.20 | No | | | | |
| MW-26 | Alluvial | 02/08/2024 | 70.82 | 69.23 | 1.59 | 50.82 | 70.82 | 48.33 | 48.40 | 0.07 | 500 | 1.89 | No | | | | |
| MW-26 | Alluvial | 03/14/2024 | 70.82 | 69.20 | 1.62 | 50.82 | 70.82 | 47.30 | 47.37 | 0.07 | 500 | 1.89 | No | | | | |
| MW-27-020 | Fluvial | 02/19/2024 | 18.92 | 13.82 | 5.10 | 8.92 | 18.92 | 7.42 | 7.48 | 0.06 | 500 | 2.20 | Yes | X | | | Siltation. Not recommended for redevelopment based on location and fluvial sediments. |
| MW-27-060 | Fluvial | 02/19/2024 | 60.52 | 58.81 | 1.71 | 50.32 | 60.32 | 8.05 | 8.10 | 0.05 | 500 | 2.64 | No | | | | |
| MW-27-085 | Fluvial | 02/19/2024 | 100.05 | 100.40 | -0.35 | 80.05 | 90.05 | 7.96 | 8.00 | 0.04 | 500 | 3.30 | No | | | | |
| MW-28-025 | Fluvial | 02/20/2024 | 25.10 | 23.71 | 1.39 | 15.10 | 25.10 | 13.53 | 13.54 | 0.01 | 500 | 13.21 | No | | | | |
| MW-28-090 | Fluvial | 02/20/2024 | 101.46 | 98.00 | 3.46 | 73.10 | 93.10 | 14.30 | 14.31 | 0.01 | 500 | 13.21 | No | | | | |
| MW-29 | Fluvial | 02/20/2024 | 43.73 | 40.71 | 3.02 | 31.71 | 41.71 | 32.47 | 32.50 | 0.03 | 500 | 4.40 | No | | | | Siltation. Not recommended for redevelopment based on location and fluvial sediments. |
| MW-30-050 | Fluvial | 01/09/2024 | 55.01 | 50.23 | 4.78 | 42.41 | 52.41 | 14.50 | 14.56 | 0.06 | 500 | 2.20 | Yes | X | | | Siltation. Not recommended for redevelopment based on location and fluvial sediments. |
| MW-30-050 | Fluvial | 02/06/2024 | 55.01 | 50.18 | 4.83 | 42.41 | 52.41 | 14.51 | 15.52 | 1.01 | 500 | 0.13 | Yes | X | | | Siltation. Not recommended for redevelopment based on location and fluvial sediments. |
| MW-30-050 | Fluvial | 03/12/2024 | 55.01 | 50.21 | 4.80 | 42.41 | 52.41 | 11.40 | 11.42 | 0.02 | 500 | 6.60 | Yes | X | | | Siltation. Not recommended for redevelopment based on location and fluvial sediments. |
| MW-31-060 | Alluvial | 01/09/2024 | 65.71 | 61.42 | 4.29 | 43.21 | 63.21 | 41.88 | 41.95 | 0.07 | 500 | 1.89 | No | | | | |
| MW-31-060 | Alluvial | 02/08/2024 | 65.71 | 61.55 | 4.16 | 43.21 | 63.21 | 42.04 | 42.15 | 0.11 | 500 | 1.20 | No | X | | | High turbidity. Not repeated in March sampling event. Continue to monitor. |
| MW-31-060 | Alluvial | 03/13/2024 | 65.71 | 61.52 | 4.19 | 43.21 | 63.21 | 39.96 | 40.04 | 0.08 | 500 | 1.65 | No | | | | |
| MW-31-135 | Alluvial | 01/09/2024 | 133.16 | 130.83 | 2.33 | 112.86 | 132.86 | 42.90 | 43.00 | 0.10 | 500 | 1.32 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-31-135 | Alluvial | 02/08/2024 | 133.16 | 130.72 | 2.44 | 112.86 | 132.86 | 42.77 | 42.85 | 0.08 | 500 | 1.65 | No | X | | | High turbidity. Not repeated in March sampling event. Continue to monitor. |
| MW-31-135 | Alluvial | 03/13/2024 | 133.16 | 130.72 | 2.44 | 112.86 | 132.86 | 41.00 | 41.08 | 0.08 | 500 | 1.65 | No | | | | |
| MW-32-020 | Fluvial | 02/22/2024 | 22.41 | 19.15 | 3.26 | 12.41 | 22.41 | 8.87 | 8.89 | 0.02 | 500 | 6.60 | Yes | X | | | Not recommended for redevelopment based on location and fluvial sediments. |

**Table 4.2**
**Monitoring Well Water Levels and Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Well Screen Lithology | Sample Date | Constructed Well Depth (feet bTOC) | Measured Well Depth (feet bTOC) | Difference in Constructed and Measured Well Depth (feet) | Screen Start Depth (feet bTOC) | Screen End Depth (feet bTOC) | Pre-Purge Depth to Water (feet bTOC) | Post-Purge Depth to Water (feet bTOC) | Drawdown During Purging (feet) | Purging Rate (ml/min) | Specific Capacity (gpm/feet) | Measured Depth Covering Greater than 20% of screen? | Flagged for Evaluation | Planned for Resurvey | Planned for Redevelopment | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-32-035 | Fluvial | 02/22/2024 | 39.58 | 36.71 | 2.87 | 29.93 | 37.43 | 8.81 | 8.83 | 0.02 | 500 | 6.60 | No | | | | |
| MW-33-040 | Fluvial | 02/21/2024 | 44.64 | 40.96 | 3.68 | 31.80 | 41.80 | 34.28 | 34.31 | 0.03 | 500 | 4.40 | No | | | | |
| MW-33-090 | Alluvial | 02/21/2024 | 91.83 | 88.08 | 3.75 | 71.83 | 91.11 | 34.32 | 34.37 | 0.05 | 500 | 2.64 | No | | | | |
| MW-33-150 | Alluvial | 02/21/2024 | 158.15 | 155.06 | 3.09 | 134.77 | 154.77 | 34.44 | 34.48 | 0.04 | 500 | 3.30 | No | | | | |
| MW-33-210 | Alluvial | 02/21/2024 | 225.64 | 222.15 | 3.49 | 192.64 | 212.64 | 33.35 | 33.39 | 0.04 | 500 | 3.30 | No | | | | |
| MW-34-055 | Fluvial | 02/07/2024 | 58.81 | 56.39 | 2.42 | 47.21 | 57.21 | 8.90 | 8.95 | 0.05 | 500 | 2.64 | No | | | | |
| MW-34-080 | Fluvial | 01/10/2024 | 86.56 | 84.08 | 2.48 | 75.26 | 85.26 | 9.41 | 9.41 | 0.00 | 500 | N/A | No | | | | |
| MW-34-080 | Fluvial | 02/07/2024 | 86.56 | 84.09 | 2.47 | 75.26 | 85.26 | 9.04 | 9.10 | 0.06 | 500 | 2.20 | No | | | | |
| MW-34-080 | Fluvial | 03/12/2024 | 86.56 | 84.10 | 2.46 | 75.26 | 85.26 | 5.60 | 5.70 | 0.10 | 500 | 1.32 | No | | | | |
| MW-34-100 | Fluvial | 02/07/2024 | 116.44 | 115.72 | 0.72 | 91.44 | 101.44 | 9.16 | 9.20 | 0.04 | 500 | 3.30 | No | | | | |
| MW-34-100 | Fluvial | 03/12/2024 | 116.44 | 115.71 | 0.73 | 91.44 | 101.44 | 5.74 | 5.85 | 0.11 | 500 | 1.20 | No | | | | |
| MW-35-060 | Alluvial | 02/16/2024 | 61.63 | 57.92 | 3.71 | 41.33 | 61.33 | 29.51 | 29.56 | 0.05 | 500 | 2.64 | No | | | | |
| MW-35-135 | Alluvial | 02/16/2024 | 158.98 | 154.61 | 4.37 | 116.28 | 136.28 | 28.60 | 28.63 | 0.03 | 500 | 4.40 | No | | | | |
| MW-36-020 | Fluvial | 02/08/2024 | 23.08 | 22.20 | 0.88 | 12.78 | 22.78 | 13.28 | 13.30 | 0.02 | 500 | 6.60 | No | | | | |
| MW-36-040 | Fluvial | 02/08/2024 | 43.15 | 42.58 | 0.57 | 32.85 | 42.85 | 17.54 | 17.55 | 0.01 | 500 | 13.21 | No | | | | |
| MW-36-050 | Fluvial | 02/08/2024 | 55.79 | 53.02 | 2.77 | 48.79 | 53.79 | 17.53 | 17.54 | 0.01 | 500 | 13.21 | No | | | | |
| MW-36-070 | Fluvial | 02/08/2024 | 73.02 | 72.26 | 0.76 | 62.72 | 72.72 | 17.12 | 17.14 | 0.02 | 500 | 6.60 | No | | | | |
| MW-36-090 | Fluvial | 01/10/2024 | 93.34 | 92.33 | 1.01 | 83.04 | 93.04 | 18.10 | 18.20 | 0.10 | 500 | 1.32 | No | | | | |
| MW-36-090 | Fluvial | 02/08/2024 | 93.34 | 91.80 | 1.54 | 83.04 | 93.04 | 17.52 | 17.53 | 0.01 | 500 | 13.21 | No | | | | |
| MW-36-090 | Fluvial | 03/12/2024 | 93.34 | 92.38 | 0.96 | 83.04 | 93.04 | 14.86 | 14.95 | 0.09 | 500 | 1.47 | No | | | | |
| MW-36-100 | Fluvial | 01/10/2024 | 111.36 | 109.69 | 1.67 | 91.36 | 101.36 | 18.14 | 18.20 | 0.06 | 500 | 2.20 | No | | | | |
| MW-36-100 | Fluvial | 02/08/2024 | 111.36 | 109.00 | 2.36 | 91.36 | 101.36 | 18.10 | 18.11 | 0.01 | 500 | 13.21 | No | | | | |
| MW-36-100 | Fluvial | 03/12/2024 | 111.36 | 109.71 | 1.65 | 91.36 | 101.36 | 14.90 | 15.00 | 0.10 | 500 | 1.32 | No | | | | |
| MW-38D | Alluvial | 02/22/2024 | 186.58 | 184.80 | 1.78 | 166.28 | 186.28 | 72.73 | 72.75 | 0.02 | 500 | 6.60 | No | | | | |
| MW-38S | Alluvial | 02/22/2024 | 97.77 | 96.00 | 1.77 | 77.47 | 97.47 | 71.23 | 71.26 | 0.03 | 500 | 4.40 | No | | | | |
| MW-39-040 | Alluvial | 01/09/2024 | 43.33 | 37.94 | 5.39 | 33.03 | 43.03 | 16.03 | 16.09 | 0.06 | 500 | 2.20 | Yes | X | | | Second Quarter 2023 redevelopment with Waterra pump did not improve siltation. Well will not be considered for future redevelopment. |
| MW-39-040 | Alluvial | 02/06/2024 | 43.33 | 38.15 | 5.18 | 33.03 | 43.03 | 15.95 | 15.67 | -0.28 | 500 | -0.47 | Yes | X | | | Second Quarter 2023 redevelopment with Waterra pump did not improve siltation. Well will not be considered for future redevelopment. |
| MW-39-040 | Alluvial | 03/12/2024 | 43.33 | 38.12 | 5.21 | 33.03 | 43.03 | 12.97 | 12.99 | 0.02 | 500 | 6.60 | Yes | X | | | Second Quarter 2023 redevelopment with Waterra pump did not improve siltation. Well will not be considered for future redevelopment. |
| MW-39-050 | Alluvial | 01/09/2024 | 57.43 | 54.41 | 3.02 | 49.83 | 54.83 | 15.92 | 15.95 | 0.03 | 500 | 4.40 | No | | | | |
| MW-39-050 | Alluvial | 02/06/2024 | 57.43 | 54.00 | 3.43 | 49.83 | 54.83 | 16.20 | 16.22 | 0.02 | 500 | 6.60 | No | | | | |
| MW-39-050 | Alluvial | 03/12/2024 | 57.43 | 54.00 | 3.43 | 49.83 | 54.83 | 13.64 | 13.67 | 0.03 | 500 | 4.40 | No | | | | |
| MW-39-060 | Alluvial | 01/09/2024 | 69.00 | 61.48 | 7.52 | 51.70 | 61.70 | 16.03 | 16.08 | 0.05 | 500 | 2.64 | No | | | | |
| MW-39-060 | Alluvial | 02/06/2024 | 69.00 | 66.28 | 2.72 | 51.70 | 61.70 | 16.54 | 16.55 | 0.01 | 500 | 13.21 | No | | | | |
| MW-39-060 | Alluvial | 03/12/2024 | 69.00 | 66.23 | 2.77 | 51.70 | 61.70 | 13.11 | 13.14 | 0.03 | 500 | 4.40 | No | | | | |
| MW-39-070 | Alluvial | 01/09/2024 | 74.51 | 71.53 | 2.98 | 62.82 | 72.82 | 16.19 | 16.23 | 0.04 | 500 | 3.30 | No | | | | |
| MW-39-070 | Alluvial | 02/06/2024 | 74.51 | 71.10 | 3.41 | 62.82 | 72.82 | 16.22 | 16.22 | 0.00 | 500 | N/A | No | | | | |
| MW-39-070 | Alluvial | 03/12/2024 | 74.51 | 71.11 | 3.40 | 62.82 | 72.82 | 13.59 | 13.61 | 0.02 | 500 | 6.60 | No | | | | |
| MW-39-080 | Alluvial | 01/09/2024 | 85.37 | NM | N/A | 72.82 | 82.82 | 16.13 | 16.17 | 0.04 | 500 | 3.30 | N/A | X | | | Incorrect total depth measured. Confirmed during February sampling event. |
| MW-39-080 | Alluvial | 02/06/2024 | 85.37 | 81.60 | 3.77 | 72.82 | 82.82 | 16.85 | 16.86 | 0.01 | 500 | 13.21 | No | | | | |
| MW-39-080 | Alluvial | 03/12/2024 | 85.37 | 81.61 | 3.76 | 72.82 | 82.82 | 13.64 | 13.67 | 0.03 | 500 | 4.40 | No | | | | |
| MW-39-100 | Alluvial | 01/09/2024 | 120.53 | 116.57 | 3.96 | 82.82 | 102.82 | 16.20 | 16.23 | 0.03 | 500 | 4.40 | No | | | | |
| MW-39-100 | Alluvial | 02/06/2024 | 120.53 | 116.58 | 3.95 | 82.82 | 102.82 | 13.36 | 13.37 | 0.01 | 500 | 13.21 | No | | | | |
| MW-39-100 | Alluvial | 03/12/2024 | 120.53 | 116.55 | 3.98 | 82.82 | 102.82 | 13.61 | 13.65 | 0.04 | 500 | 3.30 | No | | | | |
| MW-42-030 | Fluvial | 02/09/2024 | 32.55 | 30.73 | 1.82 | 12.25 | 32.25 | 11.85 | 11.86 | 0.01 | 500 | 13.21 | No | | | | |
| MW-42-055 | Fluvial | 02/09/2024 | 55.29 | 55.00 | 0.29 | 44.99 | 54.99 | 11.80 | 11.82 | 0.02 | 500 | 6.60 | No | | | | |
| MW-42-065 | Fluvial | 02/09/2024 | 83.47 | 83.33 | 0.14 | 58.47 | 68.47 | 11.41 | 11.43 | 0.02 | 500 | 6.60 | No | | | | |

**Table 4.2**
**Monitoring Well Water Levels and Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Well Screen Lithology | Sample Date | Constructed Well Depth (feet bTOC) | Measured Well Depth (feet bTOC) | Difference in Constructed and Measured Well Depth (feet) | Screen Start Depth (feet bTOC) | Screen End Depth (feet bTOC) | Pre-Purge Depth to Water (feet bTOC) | Post-Purge Depth to Water (feet bTOC) | Drawdown During Purging (feet) | Purging Rate (ml/min) | Specific Capacity (gpm/feet) | Measured Depth Covering Greater than 20% of screen? | Flagged for Evaluation | Planned for Resurvey | Planned for Redevelopment | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-43-025 | Fluvial | 02/15/2024 | 27.52 | 26.55 | 0.97 | 17.52 | 27.52 | 10.34 | 10.39 | 0.05 | 500 | 2.64 | No | | | | |
| MW-43-075 | Fluvial | 02/15/2024 | 77.79 | 77.51 | 0.28 | 67.79 | 77.79 | 10.60 | 10.60 | 0.00 | 500 | N/A | No | | | | |
| MW-43-090 | Fluvial | 02/15/2024 | 99.82 | 102.67 | -2.85 | 82.82 | 92.82 | 10.81 | 10.86 | 0.05 | 500 | 2.64 | No | | | | |
| MW-44-070 | Fluvial | 02/07/2024 | 72.10 | 72.31 | -0.21 | 62.10 | 72.10 | 19.89 | 20.00 | 0.11 | 500 | 1.20 | No | | | | |
| MW-44-115 | Alluvial | 01/10/2024 | 114.52 | 114.38 | 0.14 | 106.52 | 114.52 | 20.46 | 20.50 | 0.04 | 500 | 3.30 | No | | | | |
| MW-44-115 | Alluvial | 02/07/2024 | 114.52 | 114.33 | 0.19 | 106.52 | 114.52 | 19.78 | 19.90 | 0.12 | 500 | 1.10 | No | | | | |
| MW-44-115 | Alluvial | 03/11/2024 | 114.52 | 114.35 | 0.17 | 106.52 | 114.52 | 17.01 | 17.13 | 0.12 | 500 | 1.10 | No | | | | |
| MW-44-125 | Alluvial | 01/10/2024 | 130.35 | 128.69 | 1.66 | 117.55 | 126.55 | 20.24 | 20.30 | 0.06 | 500 | 2.20 | No | | | | |
| MW-44-125 | Alluvial | 02/07/2024 | 130.35 | 128.66 | 1.69 | 117.55 | 126.55 | 19.98 | 20.10 | 0.12 | 500 | 1.10 | No | | | | |
| MW-44-125 | Alluvial | 03/11/2024 | 130.35 | 128.65 | 1.70 | 117.55 | 126.55 | 16.67 | 16.78 | 0.11 | 500 | 1.20 | No | | | | |
| MW-46-175 | Alluvial | 02/22/2024 | 176.84 | 176.11 | 0.73 | 166.34 | 176.34 | 29.41 | 29.45 | 0.04 | 500 | 3.30 | No | | | | |
| MW-46-205 | Alluvial | 02/22/2024 | 209.49 | 218.75 | -9.26 | 199.49 | 209.49 | 29.64 | 29.68 | 0.04 | 500 | 3.30 | No | | | | |
| MW-47-115 | Alluvial | 02/22/2024 | 116.58 | 115.25 | 1.33 | 106.58 | 116.58 | 31.10 | 31.13 | 0.03 | 500 | 4.40 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-49-135 | Alluvial | 02/20/2024 | 136.52 | 136.25 | 0.27 | 126.52 | 136.52 | 30.81 | 30.85 | 0.04 | 500 | 3.30 | No | | | | |
| MW-49-275 | Alluvial | 02/20/2024 | 276.45 | 274.78 | 1.67 | 256.45 | 276.45 | 31.50 | 31.58 | 0.08 | 500 | 1.65 | No | | | | |
| MW-49-365 | Alluvial | 02/20/2024 | 368.86 | 367.38 | 1.48 | 347.51 | 367.51 | 33.11 | 33.16 | 0.05 | 500 | 2.64 | No | | | | |
| MW-51 | Alluvial | 01/10/2024 | 112.94 | 113.28 | -0.34 | 96.69 | 111.69 | 46.74 | 46.81 | 0.07 | 500 | 1.89 | No | | | | |
| MW-51 | Alluvial | 02/08/2024 | 112.94 | 113.28 | -0.34 | 96.69 | 111.69 | 47.83 | 47.90 | 0.07 | 500 | 1.89 | No | | | | |
| MW-51 | Alluvial | 03/14/2024 | 112.94 | 113.25 | -0.31 | 96.69 | 111.69 | 46.39 | 46.39 | 0.00 | 500 | N/A | No | | | | |
| MW-57-070 | Bedrock | 02/20/2024 | 70.40 | 68.64 | 1.76 | 55.40 | 70.40 | 54.70 | 54.75 | 0.05 | 500 | 2.64 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-58BR | Bedrock | 02/20/2024 | 209.13 | 204.20 | 4.93 | 69.13 | 209.13 | 68.97 | 69.00 | 0.03 | 500 | 4.40 | No | | | | |
| MW-60-125 | Bedrock | 02/20/2024 | 122.69 | 121.93 | 0.76 | 102.69 | 122.69 | 101.41 | 101.45 | 0.04 | 500 | 3.30 | No | X | | | High turbidity. Not recommended for redevelopment at this time given measured well depth and specific capacity indicates good yield. |
| MW-62-065 | Bedrock | 02/20/2024 | 67.40 | 63.68 | 3.72 | 44.50 | 64.50 | 50.42 | 50.48 | 0.06 | 500 | 2.20 | No | | | | |
| MW-63-065 | Bedrock | 02/20/2024 | 65.47 | 63.20 | 2.27 | 45.47 | 65.47 | 51.60 | 51.63 | 0.03 | 500 | 4.40 | No | | | | |
| MW-64BR | Bedrock | 02/20/2024 | 260.02 | 258.00 | 2.02 | 2.02 | 258.02 | 122.26 | 122.30 | 0.04 | 500 | 3.30 | No | | | | |
| MW-65-160 | Alluvial | 02/19/2024 | 159.70 | 160.41 | -0.71 | 149.60 | 159.60 | 142.65 | 142.69 | 0.04 | 500 | 3.30 | No | | | | |
| MW-65-225 | Alluvial | 02/19/2024 | 224.68 | 225.32 | -0.64 | 214.59 | 224.59 | 142.45 | 142.51 | 0.06 | 500 | 2.20 | No | | | | |
| MW-67-185 | Alluvial | 01/11/2024 | 186.73 | 186.69 | 0.04 | 176.73 | 186.73 | 171.77 | 171.80 | 0.03 | 500 | 4.40 | No | | | | |
| MW-68-180 | Alluvial | 01/11/2024 | 179.68 | 180.02 | -0.34 | 164.59 | 179.59 | 166.78 | 166.80 | 0.02 | 500 | 6.60 | No | | | | |
| MW-69-195 | Bedrock | 02/19/2024 | 195.27 | 195.43 | -0.16 | 175.27 | 195.27 | 176.82 | 176.88 | 0.06 | 500 | 2.20 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-70BR-225 | Bedrock | 02/20/2024 | 228.89 | 221.60 | 7.29 | 119.61 | 226.61 | 82.32 | 82.36 | 0.04 | 500 | 3.30 | No | | | | |
| MW-71-035 | Bedrock | 01/11/2024 | 35.90 | 35.61 | 0.29 | 25.70 | 35.70 | 28.70 | 29.35 | 0.65 | 100 | 0.04 | No | | | | |
| MW-71-035 | Bedrock | 02/08/2024 | 35.90 | 35.60 | 0.30 | 25.70 | 35.70 | 29.35 | 30.05 | 0.70 | 100 | 0.04 | No | X | | | High turbidity. Not repeated in March sampling event. Continue to monitor. |
| MW-71-035 | Bedrock | 03/14/2024 | 35.90 | 35.61 | 0.29 | 25.70 | 35.70 | 29.12 | 30.10 | 0.98 | 100 | 0.03 | No | | | | |
| MW-72-080 | Bedrock | 02/20/2024 | 79.88 | 79.30 | 0.58 | 59.79 | 79.79 | 59.95 | 60.00 | 0.05 | 500 | 2.64 | No | X | | | High turbidity. Not recommended for redevelopment at this time given measured well depth and specific capacity indicates good yield. |
| MW-75-033 | Alluvial | 02/12/2024 | 35.48 | 34.79 | 0.69 | 18.08 | 33.08 | 20.99 | 21.05 | 0.06 | 500 | 2.20 | No | X | | | High turbidity. Not recommended for redevelopment at this time given screen is clear and specific capacity indicates good yield. |

**Table 4.2**
**Monitoring Well Water Levels and Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Well Screen Lithology | Sample Date | Constructed Well Depth (feet bTOC) | Measured Well Depth (feet bTOC) | Difference in Constructed and Measured Well Depth (feet) | Screen Start Depth (feet bTOC) | Screen End Depth (feet bTOC) | Pre-Purge Depth to Water (feet bTOC) | Post-Purge Depth to Water (feet bTOC) | Drawdown During Purging (feet) | Purging Rate (ml/min) | Specific Capacity (gpm/feet) | Measured Depth Covering Greater than 20% of screen? | Flagged for Evaluation | Planned for Resurvey | Planned for Redevelopment | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-75-117 | Alluvial | 02/12/2024 | 119.45 | 118.08 | 1.37 | 97.15 | 117.15 | 21.00 | 21.10 | 0.10 | 500 | 1.32 | No | | | | |
| MW-75-202 | Alluvial | 02/12/2024 | 204.49 | 204.28 | 0.21 | 182.49 | 202.49 | 20.45 | 20.50 | 0.05 | 500 | 2.64 | No | | | | |
| MW-75-267 | Alluvial | 02/12/2024 | 269.50 | 268.55 | 0.95 | 247.20 | 267.20 | 19.85 | 19.90 | 0.05 | 500 | 2.64 | No | | | | |
| MW-75-337 | Alluvial | 02/12/2024 | 339.79 | 338.44 | 1.35 | 317.49 | 337.49 | 22.45 | 22.50 | 0.05 | 500 | 2.64 | No | | | | |
| MW-76-039 | Alluvial | 01/08/2024 | 39.10 | 38.63 | 0.47 | 23.60 | 38.60 | 28.42 | 28.50 | 0.08 | 500 | 1.65 | No | | | | |
| MW-76-039 | Alluvial | 02/05/2024 | 39.10 | 38.71 | 0.39 | 23.60 | 38.60 | 28.57 | 28.60 | 0.03 | 500 | 4.40 | No | | | | |
| MW-76-039 | Alluvial | 03/13/2024 | 39.10 | 38.71 | 0.39 | 23.60 | 38.60 | 26.47 | 26.50 | 0.03 | 500 | 4.40 | No | | | | |
| MW-76-156 | Alluvial | 01/08/2024 | 158.01 | 155.50 | 2.51 | 135.71 | 155.71 | 29.00 | 29.10 | 0.10 | 500 | 1.32 | No | | | | |
| MW-76-156 | Alluvial | 02/05/2024 | 158.01 | 155.50 | 2.51 | 135.71 | 155.71 | 28.44 | 28.50 | 0.06 | 500 | 2.20 | No | | | | |
| MW-76-156 | Alluvial | 03/13/2024 | 158.01 | 155.52 | 2.49 | 135.71 | 155.71 | 25.91 | 25.91 | 0.00 | 500 | N/A | No | | | | |
| MW-76-181 | Alluvial | 01/08/2024 | 183.12 | 182.43 | 0.69 | 170.82 | 180.82 | 28.76 | 28.80 | 0.04 | 500 | 3.30 | No | | | | |
| MW-76-181 | Alluvial | 02/05/2024 | 183.12 | 182.40 | 0.72 | 170.82 | 180.82 | 28.20 | 28.25 | 0.05 | 500 | 2.64 | No | | | | |
| MW-76-181 | Alluvial | 03/13/2024 | 183.12 | 182.37 | 0.75 | 170.82 | 180.82 | 26.61 | 26.61 | 0.00 | 500 | N/A | No | | | | |
| MW-76-218 | Alluvial | 01/08/2024 | 220.05 | 219.48 | 0.57 | 197.75 | 217.75 | 28.64 | 28.70 | 0.06 | 500 | 2.20 | No | | | | |
| MW-76-218 | Alluvial | 02/05/2024 | 220.05 | 219.43 | 0.62 | 197.75 | 217.75 | 27.94 | 28.00 | 0.06 | 500 | 2.20 | No | | | | |
| MW-76-218 | Alluvial | 03/13/2024 | 220.05 | 219.40 | 0.65 | 197.75 | 217.75 | 25.87 | 25.90 | 0.03 | 500 | 4.40 | No | | | | |
| MW-77-046 | Alluvial | 01/08/2024 | 48.15 | 39.46 | 8.69 | 25.85 | 45.85 | 26.06 | 26.28 | 0.22 | 500 | 0.60 | Yes | X | | | Siltation. Not recommended for redevelopment at this time given low turbidity readings and specific capacity indicates good yield. |
| MW-77-046 | Alluvial | 02/05/2024 | 48.15 | 39.50 | 8.65 | 25.85 | 45.85 | 26.66 | 26.68 | 0.02 | 500 | 6.60 | Yes | X | | | Siltation. Not recommended for redevelopment at this time given low turbidity readings and specific capacity indicates good yield. |
| MW-77-046 | Alluvial | 03/13/2024 | 48.15 | 39.52 | 8.63 | 25.85 | 45.85 | 24.33 | 24.33 | 0.00 | 500 | N/A | Yes | X | | | Siltation. Not recommended for redevelopment at this time given low turbidity readings and specific capacity indicates good yield. |
| MW-77-102 | Alluvial | 01/08/2024 | 104.21 | 104.53 | -0.32 | 81.91 | 101.91 | 26.49 | 26.54 | 0.05 | 500 | 2.64 | No | | | | |
| MW-77-102 | Alluvial | 02/05/2024 | 104.21 | 104.35 | -0.14 | 81.91 | 101.91 | 26.40 | 26.42 | 0.02 | 500 | 6.60 | No | | | | |
| MW-77-102 | Alluvial | 03/13/2024 | 104.21 | 104.35 | -0.14 | 81.91 | 101.91 | 24.15 | 24.17 | 0.02 | 500 | 6.60 | No | | | | |
| MW-77-158 | Alluvial | 01/08/2024 | 160.14 | 160.02 | 0.12 | 137.64 | 157.74 | 25.51 | 25.55 | 0.04 | 500 | 3.30 | No | | | | |
| MW-77-158 | Alluvial | 02/05/2024 | 160.14 | 160.04 | 0.10 | 137.64 | 157.74 | 25.31 | 25.32 | 0.01 | 500 | 13.21 | No | | | | |
| MW-77-158 | Alluvial | 03/13/2024 | 160.14 | 160.04 | 0.10 | 137.64 | 157.74 | 23.51 | 23.54 | 0.03 | 500 | 4.40 | No | | | | |
| MW-77-187 | Alluvial | 01/08/2024 | 189.21 | 189.04 | 0.17 | 166.71 | 186.81 | 25.43 | 25.54 | 0.11 | 500 | 1.20 | No | | | | |
| MW-77-187 | Alluvial | 02/05/2024 | 189.21 | 188.97 | 0.24 | 166.71 | 186.81 | 25.10 | 25.12 | 0.02 | 500 | 6.60 | No | | | | |
| MW-77-187 | Alluvial | 03/13/2024 | 189.21 | 188.99 | 0.22 | 166.71 | 186.81 | 23.39 | 23.41 | 0.02 | 500 | 6.60 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-78-070 | Alluvial | 01/10/2024 | 71.85 | 72.00 | -0.15 | 49.55 | 69.55 | 48.11 | 48.24 | 0.13 | 500 | 1.02 | No | X | | | High turbidity. Not repeated in February sampling event. Continue to monitor. |
| MW-78-070 | Alluvial | 02/07/2024 | 71.85 | 71.78 | 0.07 | 49.55 | 69.55 | 48.49 | 48.51 | 0.02 | 500 | 6.60 | No | | | | |
| MW-78-070 | Alluvial | 03/14/2024 | 71.85 | 71.78 | 0.07 | 49.55 | 69.55 | 47.01 | 47.03 | 0.02 | 500 | 6.60 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-78-142 | Alluvial | 01/10/2024 | 141.76 | 142.03 | -0.27 | 121.46 | 141.46 | 48.26 | 48.37 | 0.11 | 500 | 1.20 | No | | | | |
| MW-78-142 | Alluvial | 02/07/2024 | 141.76 | 141.31 | 0.45 | 121.46 | 141.46 | 84.95 | 84.98 | 0.03 | 500 | 4.40 | No | | | | |
| MW-79-058 | Alluvial | 01/10/2024 | 60.05 | 60.35 | -0.30 | 47.55 | 57.55 | 46.90 | 46.95 | 0.05 | 500 | 2.64 | No | X | | | High turbidity. Not repeated in February sampling event. Continue to monitor. |
| MW-79-058 | Alluvial | 02/07/2024 | 60.05 | 60.00 | 0.05 | 47.55 | 57.55 | 47.67 | 47.66 | -0.01 | 500 | -9.43 | No | | | | |

**Table 4.2**
**Monitoring Well Water Levels and Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Well Screen Lithology | Sample Date | Constructed Well Depth (feet bTOC) | Measured Well Depth (feet bTOC) | Difference in Constructed and Measured Well Depth (feet) | Screen Start Depth (feet bTOC) | Screen End Depth (feet bTOC) | Pre-Purge Depth to Water (feet bTOC) | Post-Purge Depth to Water (feet bTOC) | Drawdown During Purging (feet) | Purging Rate (ml/min) | Specific Capacity (gpm/feet) | Measured Depth Covering Greater than 20% of screen? | Flagged for Evaluation | Planned for Resurvey | Planned for Redevelopment | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-79-058 | Alluvial | 03/14/2024 | 60.05 | 60.03 | 0.02 | 47.55 | 57.55 | 46.43 | 46.45 | 0.02 | 500 | 6.60 | No | | | | |
| MW-79-102 | Alluvial | 01/10/2024 | 104.23 | 104.47 | -0.24 | 91.43 | 101.43 | 46.86 | 46.92 | 0.06 | 500 | 2.20 | No | | | | |
| MW-79-102 | Alluvial | 02/07/2024 | 104.23 | 104.00 | 0.23 | 91.43 | 101.43 | 47.23 | 47.25 | 0.02 | 500 | 6.60 | No | | | | |
| MW-79-102 | Alluvial | 03/14/2024 | 104.23 | 104.00 | 0.23 | 91.43 | 101.43 | 46.26 | 46.29 | 0.03 | 500 | 4.40 | No | | | | |
| MW-80-057 | Alluvial | 01/10/2024 | 59.46 | 59.33 | 0.13 | 46.96 | 56.96 | 48.41 | 48.47 | 0.06 | 500 | 2.20 | No | | | | |
| MW-80-057 | Alluvial | 02/07/2024 | 59.46 | 58.75 | 0.71 | 46.96 | 56.96 | 50.00 | 50.01 | 0.01 | 500 | 13.21 | No | | | | |
| MW-80-082 | Alluvial | 01/10/2024 | 84.00 | 83.90 | 0.10 | 66.50 | 81.50 | 48.33 | 48.36 | 0.03 | 500 | 4.40 | No | | | | |
| MW-80-082 | Alluvial | 02/07/2024 | 84.00 | 83.43 | 0.57 | 66.50 | 81.50 | 41.34 | 41.36 | 0.02 | 500 | 6.60 | No | | | | |
| MW-80-082 | Alluvial | 03/14/2024 | 84.00 | 83.94 | 0.06 | 66.50 | 81.50 | 48.45 | 48.50 | 0.05 | 500 | 2.64 | No | | | | |
| MW-81-043 | Alluvial | 01/10/2024 | 44.73 | 43.30 | 1.43 | 22.43 | 42.43 | 25.41 | 25.45 | 0.04 | 500 | 3.30 | No | | | | |
| MW-81-043 | Alluvial | 02/08/2024 | 44.73 | 43.33 | 1.40 | 22.43 | 42.43 | 25.53 | 25.63 | 0.10 | 500 | 1.32 | No | | | | |
| MW-81-043 | Alluvial | 03/13/2024 | 44.73 | 43.35 | 1.38 | 22.43 | 42.43 | 23.54 | 23.64 | 0.10 | 500 | 1.32 | No | | | | |
| MW-81-098 | Alluvial | 01/10/2024 | 99.82 | 99.39 | 0.43 | 77.52 | 97.52 | 25.74 | 25.80 | 0.06 | 500 | 2.20 | No | | | | |
| MW-81-098 | Alluvial | 02/08/2024 | 99.82 | 99.39 | 0.43 | 77.52 | 97.52 | 25.60 | 25.70 | 0.10 | 500 | 1.32 | No | | | | |
| MW-81-098 | Alluvial | 03/13/2024 | 99.82 | 99.36 | 0.46 | 77.52 | 97.52 | 23.60 | 23.70 | 0.10 | 500 | 1.32 | No | | | | |
| MW-82-046 | Alluvial | 01/09/2024 | 48.87 | 47.38 | 1.49 | 26.57 | 46.57 | 31.65 | 31.70 | 0.05 | 500 | 2.64 | No | X | | | Consecutive high turbidity readings. Well redeveloped in Second Quarter 2023 and consistent turbidity readings followed. Not recommended for redevelopment at this time given screen is clear and specific capacity indicates good yield. |
| MW-82-046 | Alluvial | 02/06/2024 | 48.87 | 47.36 | 1.51 | 26.57 | 46.57 | 31.92 | 32.00 | 0.08 | 500 | 1.65 | No | X | | | Consecutive high turbidity readings. Well redeveloped in Second Quarter 2023 and consistent turbidity readings followed. Not recommended for redevelopment at this time given screen is clear and specific capacity indicates good yield. |
| MW-82-046 | Alluvial | 03/13/2024 | 48.87 | 47.33 | 1.54 | 26.57 | 46.57 | 31.09 | 31.15 | 0.06 | 500 | 2.20 | No | X | | | Consecutive high turbidity readings. Well redeveloped in Second Quarter 2023 and consistent turbidity readings followed. Not recommended for redevelopment at this time given screen is clear and specific capacity indicates good yield. |
| MW-82-112 | Alluvial | 02/06/2024 | 114.78 | 114.16 | 0.62 | 92.48 | 112.48 | 32.11 | 32.15 | 0.04 | 500 | 3.30 | No | | | | |
| MW-82-168 | Alluvial | 01/09/2024 | 170.34 | 169.72 | 0.62 | 148.04 | 168.04 | 30.74 | 30.80 | 0.06 | 500 | 2.20 | No | | | | |
| MW-82-168 | Alluvial | 02/06/2024 | 170.34 | 169.77 | 0.57 | 148.04 | 168.04 | 30.14 | 30.20 | 0.06 | 500 | 2.20 | No | | | | |
| MW-82-168 | Alluvial | 03/13/2024 | 170.34 | 169.73 | 0.61 | 148.04 | 168.04 | 28.14 | 28.20 | 0.06 | 500 | 2.20 | No | | | | |
| MW-82-198 | Alluvial | 01/09/2024 | 200.25 | 199.41 | 0.84 | 177.95 | 197.95 | 30.53 | 30.60 | 0.07 | 500 | 1.89 | No | | | | |
| MW-82-198 | Alluvial | 02/06/2024 | 200.25 | 199.40 | 0.85 | 177.95 | 197.95 | 30.02 | 30.10 | 0.08 | 500 | 1.65 | No | | | | |
| MW-82-198 | Alluvial | 03/13/2024 | 200.25 | 199.41 | 0.84 | 177.95 | 197.95 | 28.26 | 28.30 | 0.04 | 500 | 3.30 | No | | | | |
| MW-86-030 | Alluvial | 02/20/2024 | 34.51 | 31.51 | 3.00 | 12.21 | 32.21 | 15.14 | 15.15 | 0.01 | 500 | 13.21 | No | | | | |
| MW-86-066 | Alluvial | 02/20/2024 | 70.40 | 68.91 | 1.49 | 48.10 | 68.10 | 14.40 | 14.43 | 0.03 | 500 | 4.40 | No | | | | |
| MW-86-120 | Alluvial | 02/20/2024 | 124.67 | 122.50 | 2.17 | 102.37 | 122.37 | 15.00 | 15.04 | 0.04 | 500 | 3.30 | No | | | | |
| MW-86-140 | Alluvial | 02/20/2024 | 144.53 | 142.58 | 1.95 | 132.23 | 142.23 | 15.19 | 15.21 | 0.02 | 500 | 6.60 | No | | | | |
| MW-87-109 | Alluvial | 01/10/2024 | 111.14 | 110.59 | 0.55 | 88.84 | 108.84 | 92.98 | 93.05 | 0.07 | 500 | 1.89 | No | | | | |
| MW-88-107 | Bedrock | 01/11/2024 | 109.06 | 109.00 | 0.06 | 86.76 | 106.76 | 92.11 | 92.20 | 0.09 | 500 | 1.47 | No | | | | |
| MW-88-107 | Bedrock | 02/22/2024 | 109.06 | 109.09 | -0.03 | 86.76 | 106.76 | 92.55 | 92.59 | 0.04 | 500 | 3.30 | No | | | | |
| MW-90-031 | Alluvial | 02/21/2024 | 33.60 | 31.10 | 2.50 | 21.30 | 31.30 | 6.70 | 6.71 | 0.01 | 500 | 13.21 | No | | | | |

**Table 4.2**
**Monitoring Well Water Levels and Specific Capacities**
**First Quarter 2024 Well Performance Report**
**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California**

| Well ID | Well Screen Lithology | Sample Date | Constructed Well Depth (feet bTOC) | Measured Well Depth (feet bTOC) | Difference in Constructed and Measured Well Depth (feet) | Screen Start Depth (feet bTOC) | Screen End Depth (feet bTOC) | Pre-Purge Depth to Water (feet bTOC) | Post-Purge Depth to Water (feet bTOC) | Drawdown During Purging (feet) | Purging Rate (ml/min) | Specific Capacity (gpm/feet) | Measured Depth Covering Greater than 20% of screen? | Flagged for Evaluation | Planned for Resurvey | Planned for Redevelopment | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-96-045 | Alluvial | 02/22/2024 | 47.52 | 46.31 | 1.21 | 25.22 | 45.22 | 30.78 | 30.81 | 0.03 | 500 | 4.40 | No | X | | | High turbidity. Continue to monitor for consecutive high turbidity readings. |
| MW-96-217 | Alluvial | 02/22/2024 | 219.33 | 218.51 | 0.82 | 197.03 | 217.03 | 30.62 | 30.65 | 0.03 | 500 | 4.40 | No | | | | |
| MW-97-042 | Alluvial | 02/16/2024 | 42.63 | 41.92 | 0.71 | 22.13 | 42.13 | 29.13 | 29.20 | 0.07 | 500 | 1.89 | No | X | | | High turbidity. Not recommended for redevelopment given measured well depth and specific capacity indicates good yield. |
| MW-97-202 | Alluvial | 02/16/2024 | 201.47 | 200.44 | 1.03 | 190.97 | 200.97 | 29.41 | 29.44 | 0.03 | 500 | 4.40 | No | | | | |
| PT5D | Alluvial | 01/09/2024 | 107.37 | 107.24 | 0.13 | 97.37 | 107.37 | 22.26 | 22.30 | 0.04 | 500 | 3.30 | No | | | | |
| PT5D | Alluvial | 02/19/2024 | 107.37 | 106.89 | 0.48 | 97.37 | 107.37 | 21.19 | 21.22 | 0.03 | 500 | 4.40 | No | | | | |
| PT5D | Alluvial | 03/11/2024 | 107.37 | 106.89 | 0.48 | 97.37 | 107.37 | 19.37 | 19.40 | 0.03 | 500 | 4.40 | No | | | | |
| TW-02D | Alluvial | 01/09/2024 | 148.96 | 149.61 | -0.65 | 108.96 | 143.96 | 41.41 | 41.50 | 0.09 | 3,785 | 11.11 | No | | | | |
| TW-02D | Alluvial | 02/06/2024 | 148.96 | 149.61 | -0.65 | 108.96 | 143.96 | 41.26 | 41.30 | 0.04 | 3,785 | 25.00 | No | | | | |
| TW-02D | Alluvial | 03/12/2024 | 148.96 | 149.61 | -0.65 | 108.96 | 143.96 | 39.14 | 39.20 | 0.06 | 3,785 | 16.67 | No | | | | |
| TW-02S | Alluvial | 01/09/2024 | 94.39 | 96.27 | -1.88 | 39.39 | 89.39 | 41.22 | 41.30 | 0.08 | 3,785 | 12.50 | No | | | | |
| TW-02S | Alluvial | 02/06/2024 | 94.39 | 96.27 | -1.88 | 39.39 | 89.39 | 41.34 | 41.40 | 0.06 | 3,785 | 16.67 | No | | | | |
| TW-02S | Alluvial | 03/12/2024 | 94.39 | 96.20 | -1.81 | 39.39 | 89.39 | 39.36 | 39.40 | 0.04 | 3,785 | 25.00 | No | | | | |
| TW-03D | Alluvial | 01/09/2024 | 151.22 | 152.32 | -1.10 | 106.22 | 151.22 | 41.10 | 41.20 | 0.10 | 3,785 | 10.00 | No | | | | |
| TW-03D | Alluvial | 02/06/2024 | 151.22 | 152.32 | -1.10 | 106.22 | 151.22 | 40.95 | 41.00 | 0.05 | 3,785 | 20.00 | No | | | | |
| TW-03D | Alluvial | 03/12/2024 | 151.22 | 152.32 | -1.10 | 106.22 | 151.22 | 38.92 | 39.00 | 0.08 | 3,785 | 12.50 | No | | | | |
| TW-04 | Alluvial | 02/14/2024 | 256.49 | 253.89 | 2.60 | 211.49 | 251.49 | 31.74 | 31.80 | 0.06 | 500 | 2.20 | No | | | | |

**Notes and Abbreviations:**
1. Slant wells (MW-52D, MW-52M, MW-52S, MW-53D, MW-53M, and MW-53S) are not included in this evaluation.
2. Specific capacity is evaluated for alluvial and fluvial wells. Bedrock wells are not included in this evaluation.
3. Monitoring wells MW-20-70, MW-20-100, MW-20-130, MW-22, MW-22, MW-38-D, MW-38-S, PGE-9N, and PGE-9S were resurveyed on July 25, 2022 due to observed discrepancies between constructed and measured well depths.
4. Monitoring wells MW-75-33 and MW-75-117 were resurveyed on August 25, 2022 due to observed discrepancies between constructed and measured well depths.
5. Monitoring wells MW-15, MW-31-135, MW-34-100, MW-39-40, MW-39-60, MW-45-95, MW-57-50, MW-64BR, MW-70BR-200, MW-70BR-225, MW-70BR-287, MW-72BR-200, MW-99-60, and MW-99-140 were resurveyed on November 15, 2022 due to observed discrepancies between constructed and measured well depths.
6. Monitoring wells MW-75-202 and MW-75-267 were resurveyed on April 25, 2023 due to observed discrepancies between constructed and measured well depths.
7. Monitoring well MW-46-205 was resurveyed on August 31, 2023 due to observed discrepancies between constructed and measured well depths.
8. Monitoring well construction well depths and screen intervals are undergoing an Arcadis internal audit in First and Second Quarter 2024. As a result, depths may differ from what was provided in previous reports.
bTOC = below top of casing
gpm = gallon per minute
mL/min - milliliters per minute
N/A = Not Applicable
NM = Not Measured
-- = No drawdown during purging.

# Figures


**LEGEND**

- REMEDIATION WELL (EXTRACTION)
- REMEDIATION WELL (INJECTION)
- REMEDIATION WELL (NOT PLUMBED INTO SYSTEM CURRENTLY)
- PILOT TEST WELL (EXTRACTION)
- BAT CAVE WASH
- PIPELINE
- REMEDY STRUCTURE

**Notes:**
1. NTH = National Trails Highway
2. IRZ = In-Situ Reactive Zone

N

0 625 1,250

Feet

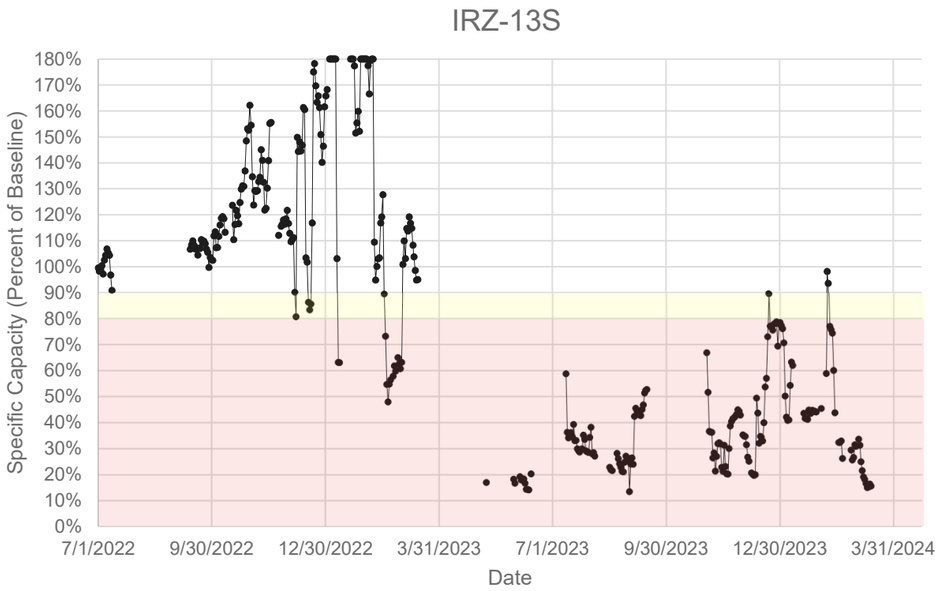
FIRST QUARTER 2024
WELL PERFORMANCE REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

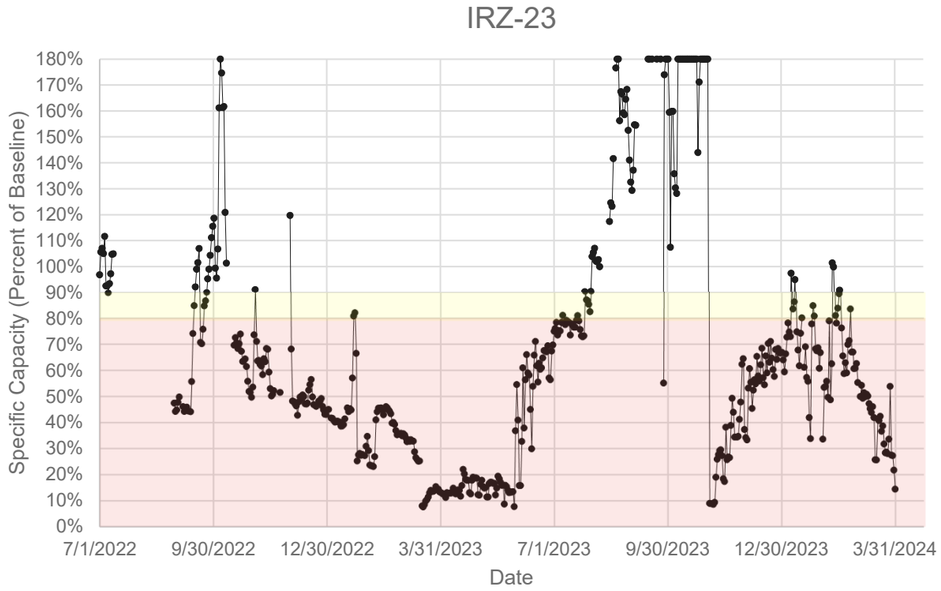
# PARTIAL REMEDY SYSTEM LAYOUT

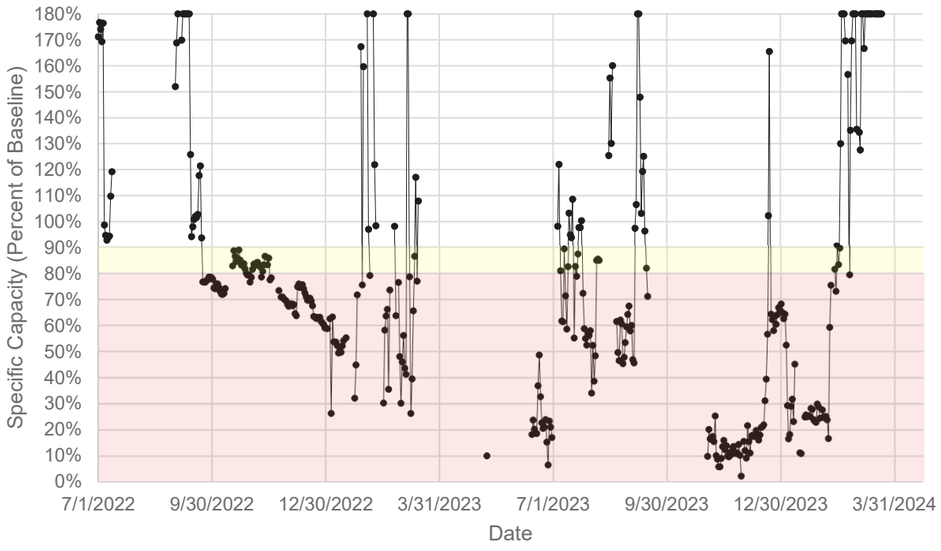
ARCADIS

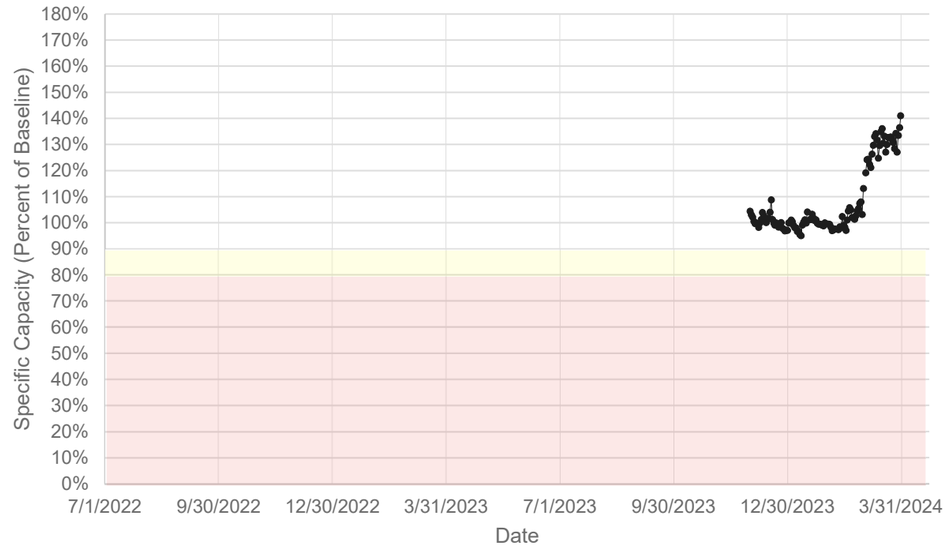
FIGURE
1.1

T:_ENV\PGE_TOPOCK\GEC\ARC_PRO\GMP\4Q23\FIGURE1_1_PARTIAL REMEDY SYSTEM LAYOUT.APRX 22-03-2024 15:23




**Notes:**

1. % - percent
2. Baseline specific capacity for each screen interval is represented as 100% on the y-axis.
3. Values greater than 100% indicate performance exceeding baseline. Values between 80% and 90% are considered fair. Values under 80% are considered poor. Values in the 80% to 90% range are shown in yellow, and values in the under 80% range are shown in red. Extraction wells consistently operating below 80% of baseline will be evaluated for potential rehabilitation.
4. IRZ-13D, IRZ-13S, and IRZ-23 operated 10/11/22-10/15/22, 11/17/22-11/20/22, and 11/21/22-11/23/22. Water level data was not collected during these timeframes due to a SCADA error and therefore specific capacities were not calculated.
5. Baseline specific capacity has not been established for IRZ-9 due to limited operation. Therefore, a graph of IRZ-9 is not included.
6. Specific capacities greater than or equal to 180% are shown as 180% to indicate well was operational at a high specific capacity.
7. PTI-1D began operation in November 2023. A baseline specific capacity was established for this well in December 2023. The graph excludes data collected prior to the baseline specific capacity being established.

FIRST QUARTER 2024
WELL PERFORMANCE REPORT

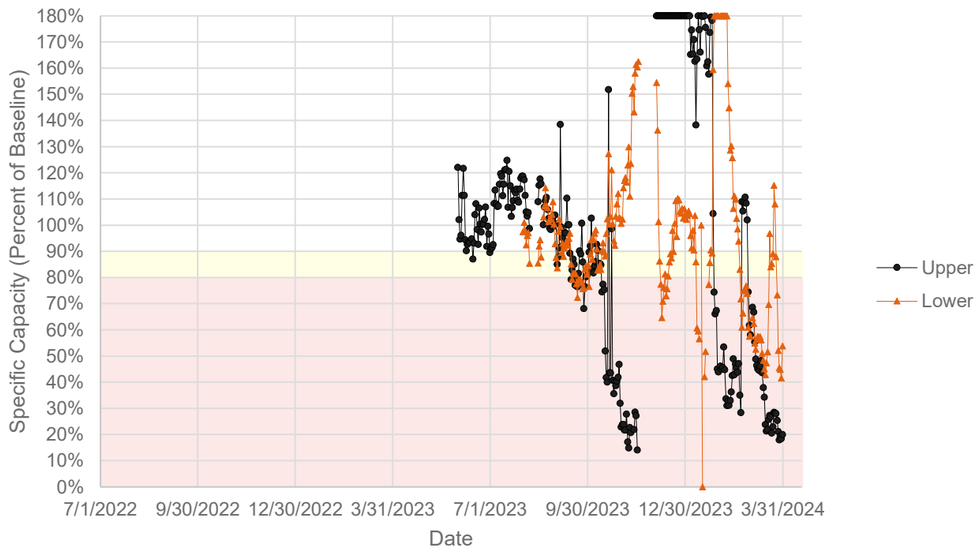
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

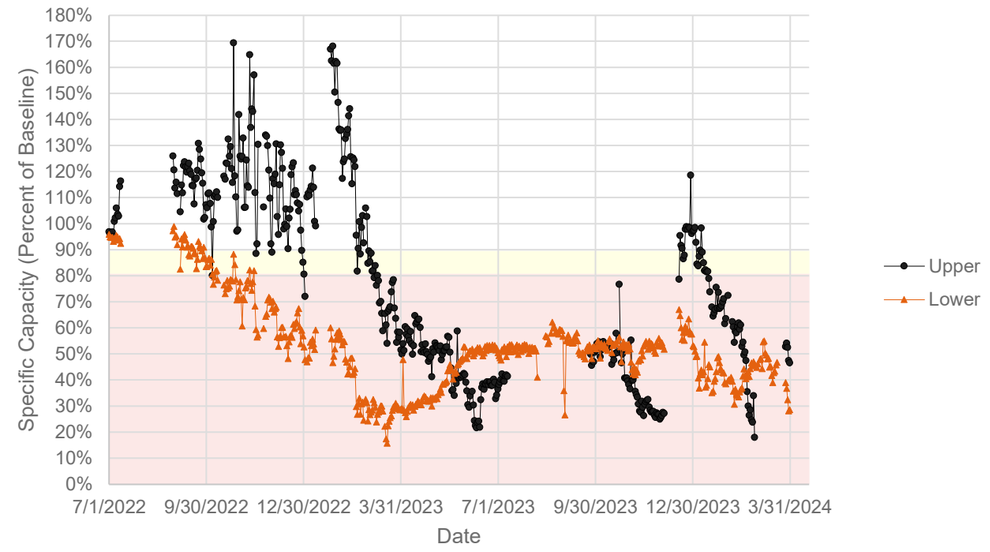
**EXTRACTION WELL SPECIFIC CAPACITY TRENDS**

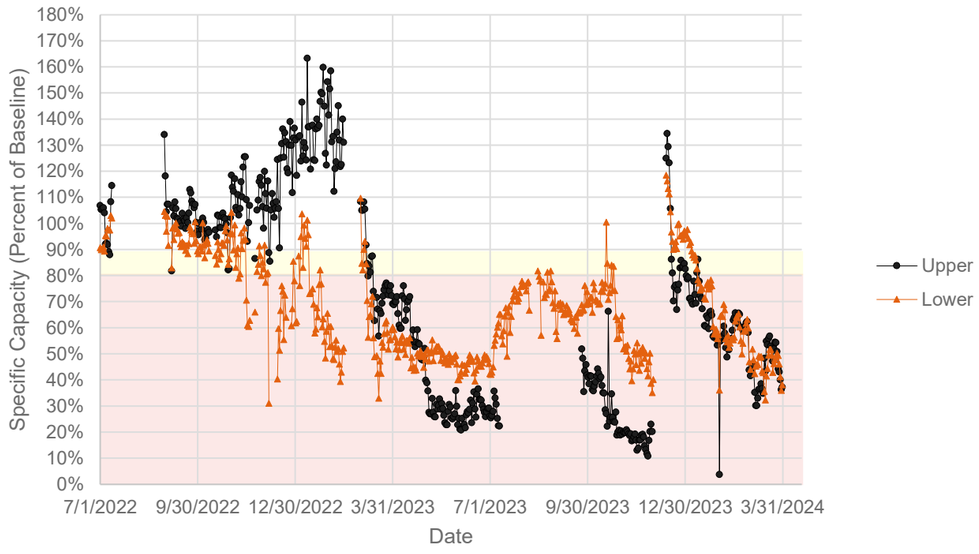
ARCADIS

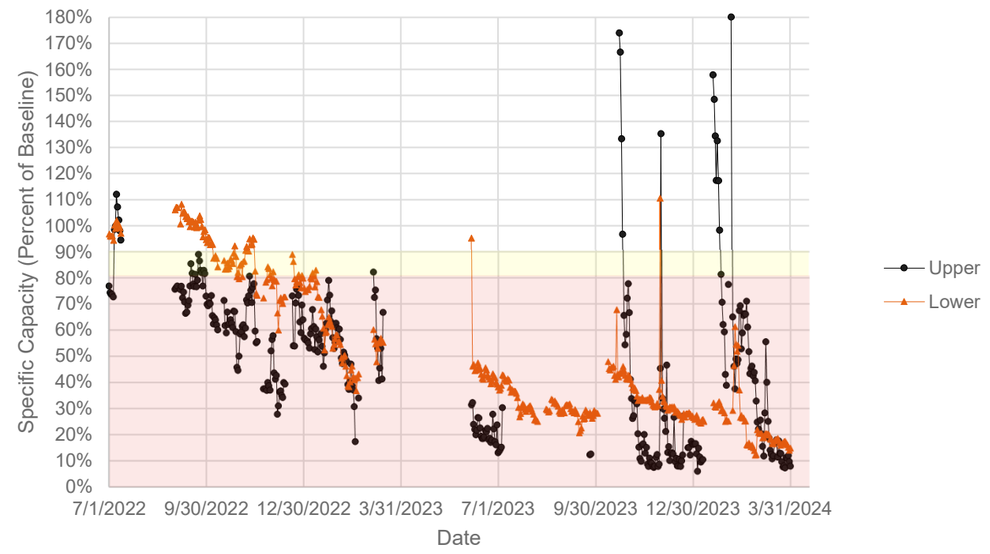
FIGURE
**3.1**

6/18/2024 10:10:18 AM




**Notes:**

1. % - percent
2. Baseline specific capacity for each screen interval is represented as 100% on the y-axis.
3. Specific capacity values greater than 100% indicate performance exceeding baseline. Values between 80% and 90% are considered fair and indicate backwashing frequency should increase to once every 0.75 weeks. Values under 80% are considered poor and indicate backwashing frequency should increase to twice weekly. Values in the 80% to 90% range are shown in yellow, and values in the under 80% range are shown in red.
4. IRZ-15 upper began operation in March 2023. IRZ-15 lower began operation in April 2023. Baseline specific capacities were established for these wells in June and August 2023, respectively. The graphs exclude data collected prior to the baseline specific capacity being established.
5. Specific capacities greater than or equal to 180% are shown as 180% to indicate well was operational at a high specific capacity.

FIRST QUARTER 2024
WELL PERFORMANCE REPORT

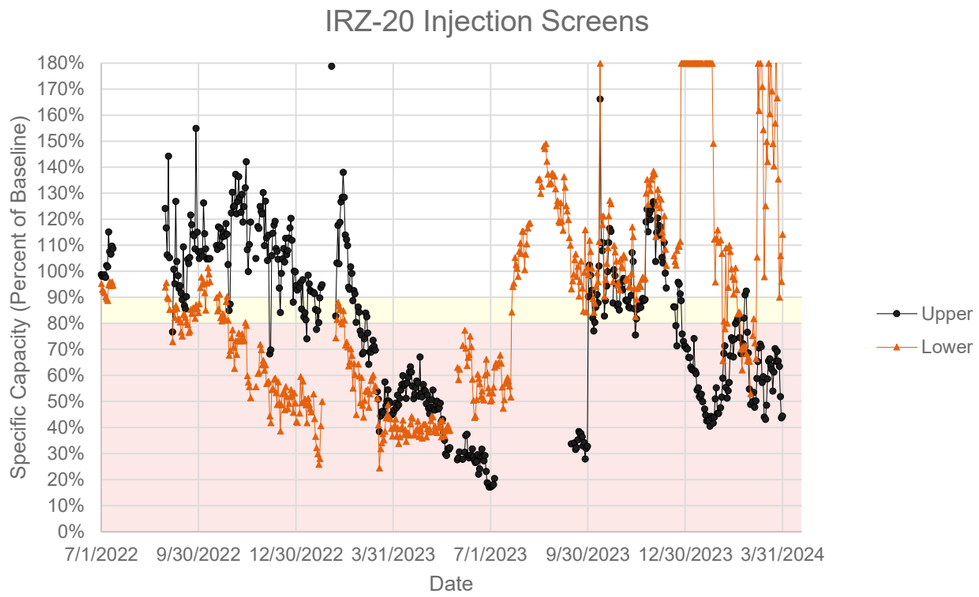
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

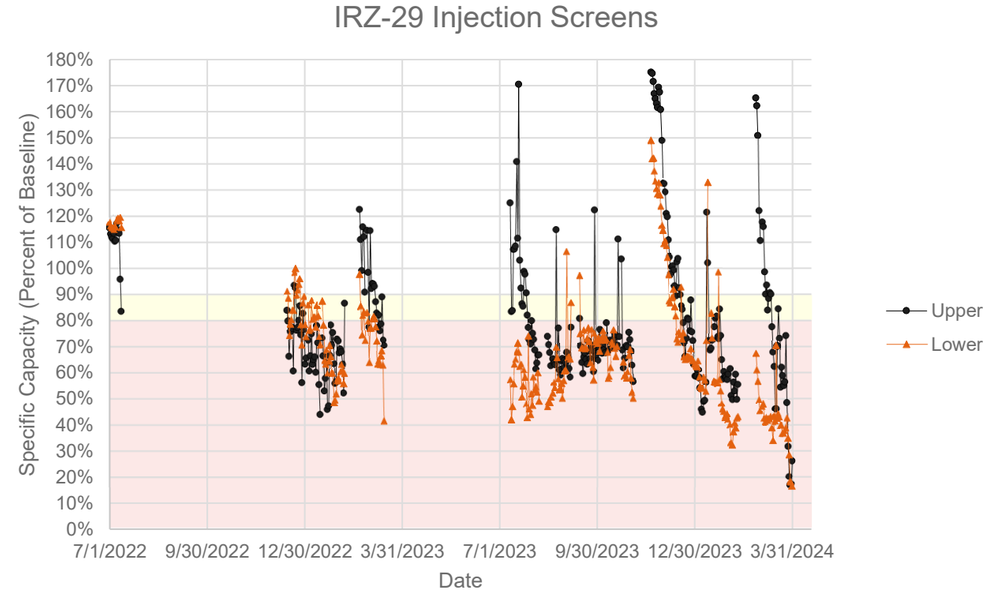
**INJECTION WELL SPECIFIC CAPACITY TRENDS PART 1**

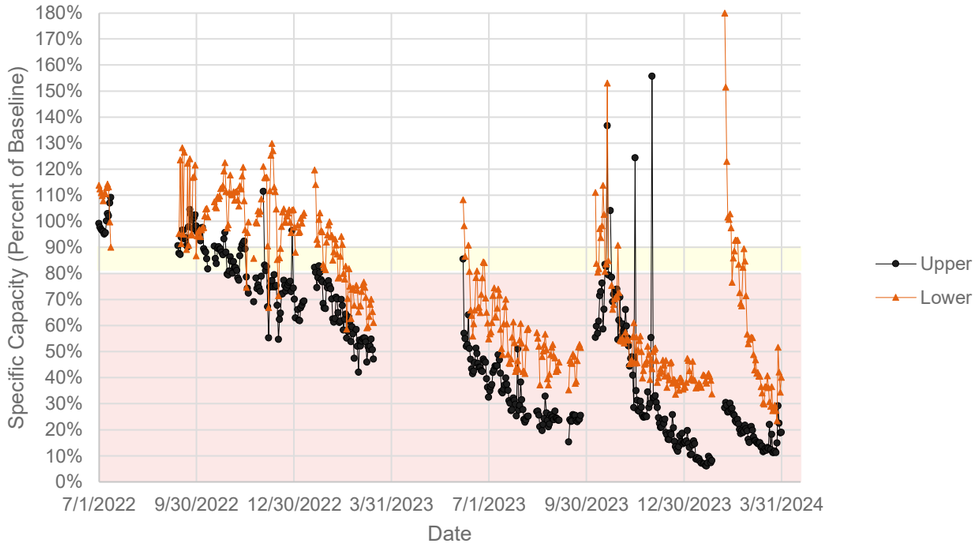
ARCADIS

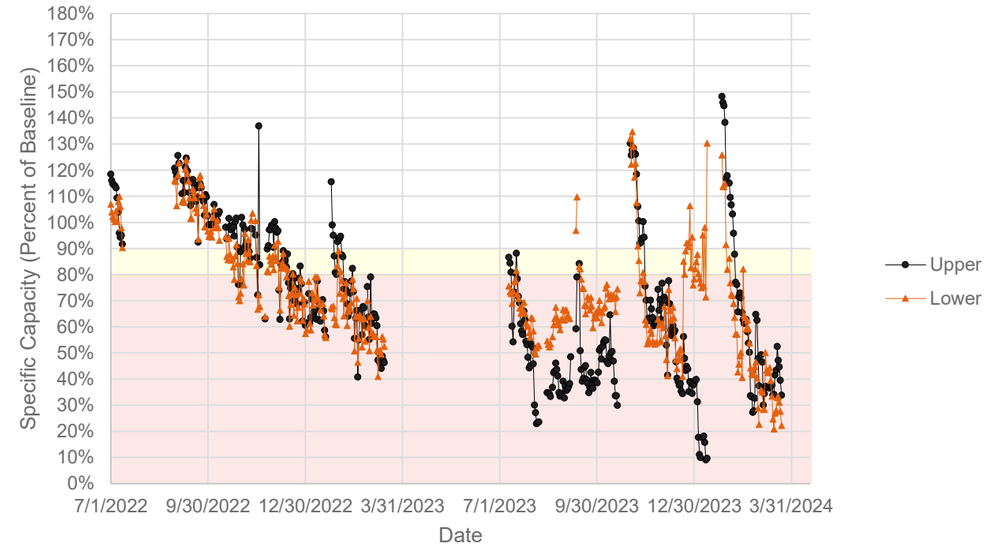
FIGURE
**3.2**

5/27/2024 11:13:15 AM




**Notes:**

1. % - percent
2. Baseline specific capacity for each screen interval is represented as 100% on the y-axis.
3. Specific capacity values greater than 100% indicate performance exceeding baseline. Values between 80% and 90% are considered fair and indicate backwashing frequency should increase to once every 0.75 weeks. Values under 80% are considered poor and indicate backwashing frequency should increase to twice weekly. Values in the 80% to 90% range are shown in yellow, and values in the under 80% range are shown in red.
4. Due to flow totalizer communication errors, data for IRZ-31 between July 5, 2023 and July 10, 2023 is unavailable. IRZ-31 was operational during this timeframe.
5. Specific capacities greater than or equal to 180% are shown as 180% to indicate well was operational at a high specific capacity.

FIRST QUARTER 2024
WELL PERFORMANCE REPORT

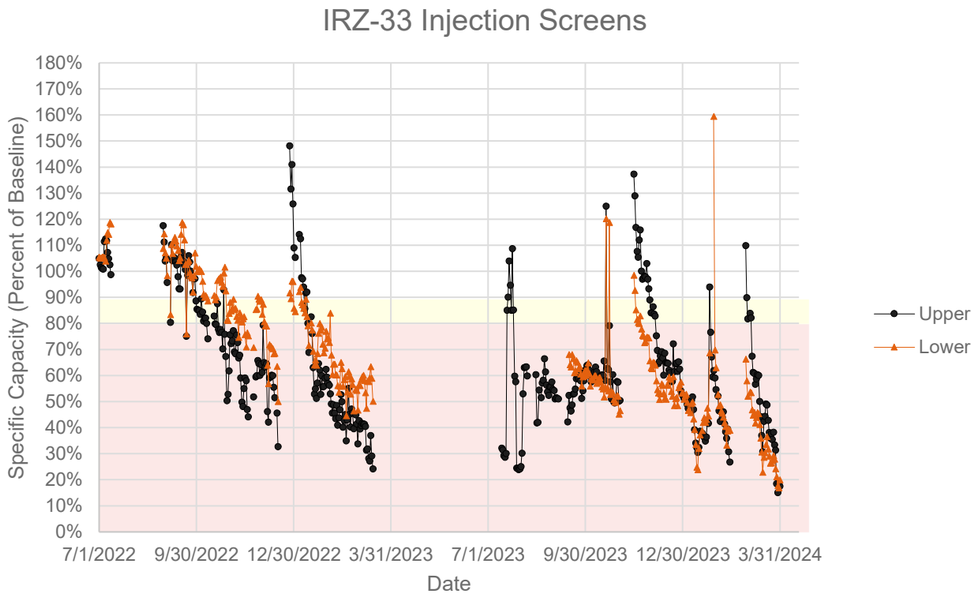
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

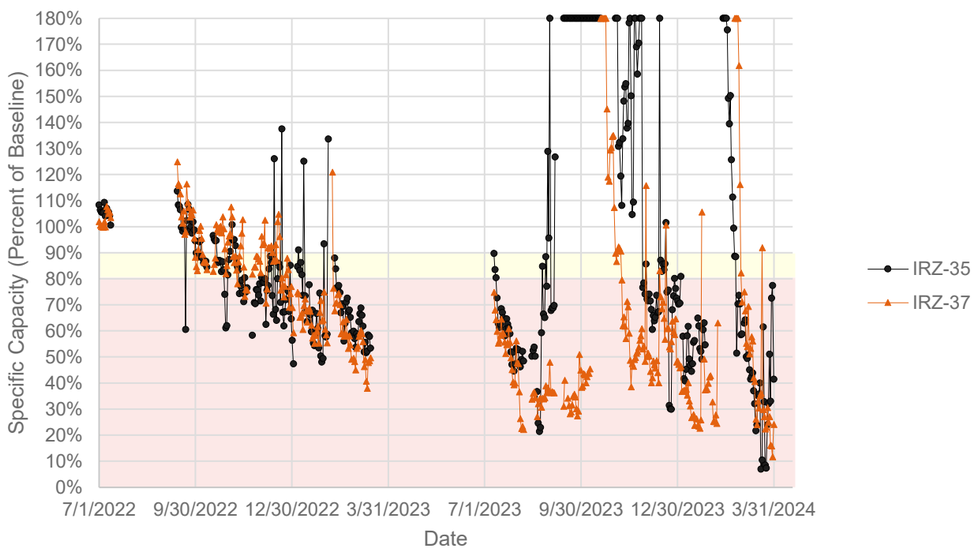
**INJECTION WELL SPECIFIC CAPACITY TRENDS PART 2**

ARCADIS

FIGURE
**3.3**

5/27/2024 11:13:15 AM




**Notes:**

1. % - percent
2. Baseline specific capacity for each screen interval is represented as 100% on the y-axis.
3. Specific capacity values greater than 100% indicate performance exceeding baseline. Values between 80% and 90% are considered fair and indicate backwashing frequency should increase to once every 0.75 weeks. Values under 80% are considered poor and indicate backwashing frequency should increase to twice weekly. Values in the 80% to 90% range are shown in yellow, and values in the under 80% range are shown in red.
4. IRZ-39 did not operate in Third Quarter 2023, and previous quarter IRZ-39 flowrates were low and unsustainable. As a result, a baseline specific capacity has not been determined for IRZ-39. Therefore, IRZ-39 is not included in Figures 3.2 through 3.4.
5. Specific capacities greater than or equal to 180% are shown as 180% to indicate well was operational at a high specific capacity.

FIRST QUARTER 2024
WELL PERFORMANCE REPORT

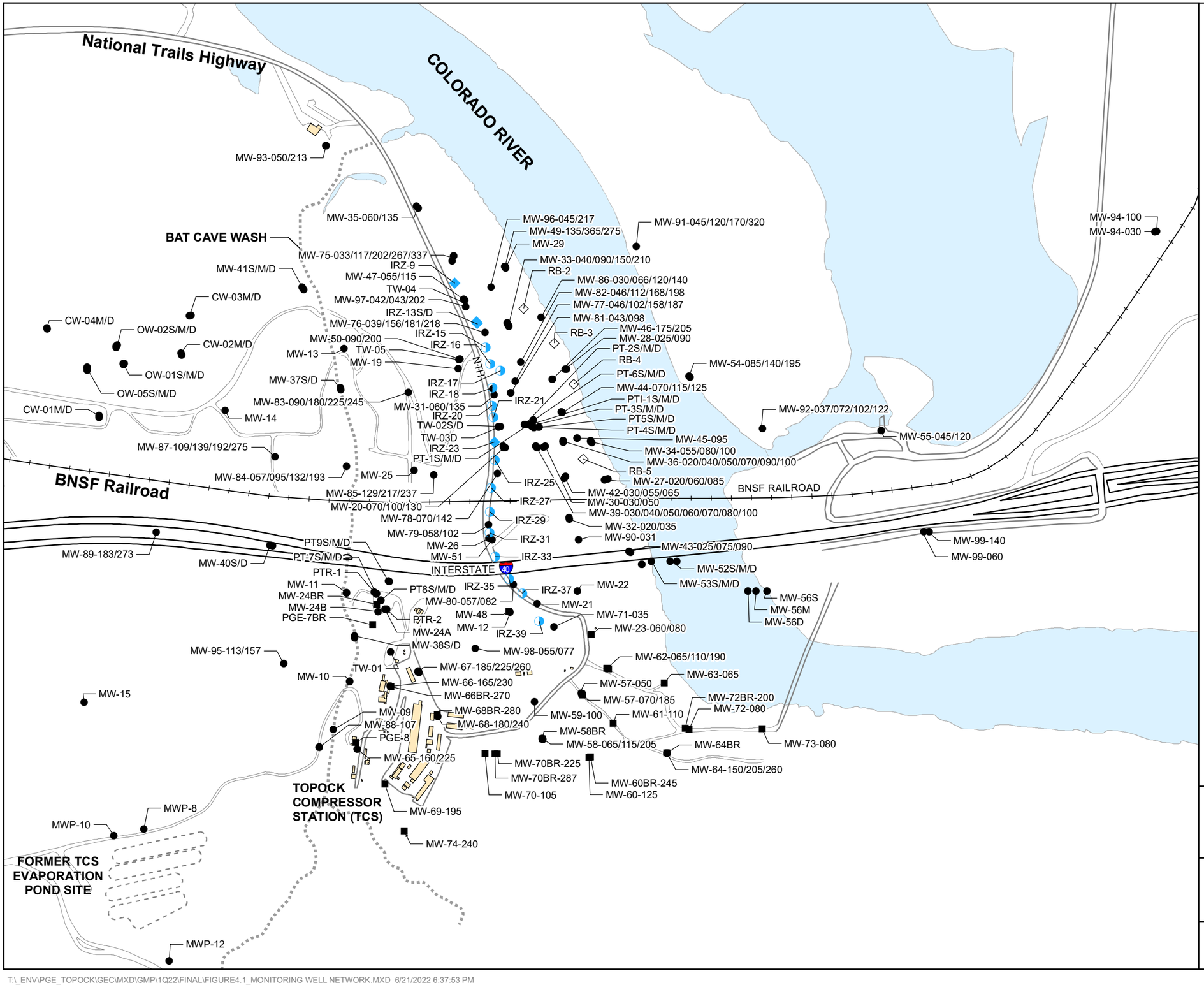
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

**INJECTION WELL SPECIFIC CAPACITY TRENDS PART 3**

ARCADIS

FIGURE
**3.4**

5/27/2024 11:13:15 AM




**LEGEND**

- GROUNDWATER MONITORING WELL
- REMEDIATION WELL (INJECTION)
- REMEDIATION WELL (EXTRACTION)
- REMEDIATION WELL (NOT PLUMBED INTO SYSTEM CURRENTLY)
- BEDROCK WELL
- BAT CAVE WASH

**Notes:**
1. NTH = National Trails Highway
2. TCS = Topock Compressor Station

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Feet

FIRST QUARTER 2024
WELL PERFORMANCE REPORT

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

# MONITORING WELL NETWORK

ARCADIS

FIGURE
**4.1**

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q22\FINAL\FIGURE4.1_MONITORING WELL NETWORK.MXD 6/21/2022 6:37:53 PM

# Appendices

# Memo

**SUBJECT**
PG&E Topock Chromium Non-detect Reporting Limit Correction

**DATE**
18 June 2024

**COPIES TO**
John Glass, Pacific Gas & Electric

**TO**
Mr. Christopher Ioan, California Department of Toxic Substances Control

**OUR REF**
30211191

**NAME**
Dan Bush, Arcadis

Dear Mr. Ioan,

Pacific Gas and Electric Company (PG&E) recognizes that data quality is the foundation for informed decision-making and ensuring compliance at environmental remediation sites. A recently conducted data quality audit on historical laboratory analytical data for the Topock Compressor Station revealed a data reporting error which was recognized and corrected in the first half of 2024. In limited instances between 2020 and 2023, select non-detect values were associated with an incorrect reporting limit in report tables. While the reporting error is unfortunate, it is important to note that:

- Non-detect values, regardless of the incorrect associated reporting limit, were still correctly reported as "non-detect."
- This reporting error occurred in a very small set of data, approximately 0.03% of total non-detect values measured during this period.
- No compliance issues were overlooked because of this error which is solely related to reporting table production.
- This reporting error has been identified, a root cause determined, and a corrective action implemented for all future reporting.

**Minimal Occurrence of Error**

Overall, 90,785 well/analyte samples have been collected, analyzed at a lab, and validated from 2020 to 2023 for the Topock Compressor Station. Of these, 37,155 were non-detect values. Of these, 11 well/analytes from the 2020 to 2023 were misreported due to this error (approximately 0.03% of total non-detect values measured during this period). The 11 misreported non-detect values consist of 2 hexavalent chromium, 7 total dissolved iron, and 2 ammonia as nitrogen sample results (Table 1). These misreported non-detect values were present on select tables from the quarterly progress report and well performance report. The incorrectly reported non-detect value and corrected non-detect value summarized on Table 1. All results have been corrected in reports submitted in 2024.

**Compliance Maintained**

This issue only affected downstream reports solely reliant on automated outputs of validated data from the database. All compliance, trigger, and/or sensitive well/analyte pairs are reviewed immediately upon receipt from the laboratory pre-validation by both an automated and manual data review process, ensuring an accurate, conservative, and quick response to results that may either have compliance, notification, or system operational implications. Therefore, no compliance issues were overlooked because of this error which is solely related to reporting table production.

**Root Cause Analysis**

This error occurred due to an incorrect assumption in automated table-generation programming when the database queries were established in 2020. The automation draws information from several fields in a source database. The table-generation programming assumed that the data fields indicating blank contamination were consistently applied in the database, but a limited number of results were found to have been inconsistent. The table-generation programming has been adjusted to confirm consistency between the data fields prior to inclusion in data tables.

These data fields contain data validation information that may result in an adjustment to the reporting limit if a qualifier is applied during the data validation process. Specifically, qualifiers that indicate that a blank (equipment blank, method blank, or instrument calibration blank) was contaminated by a site constituent of concern at a laboratory-measurable level may require an adjustment to the reporting limit.

Blank contamination is a standard quality control measure of field and laboratory reliability which, when an analyte is measured and correlated with a sample/set of samples, requires adjusting the reporting limits for applicable analytes for that sample/set of samples. This quality control measure aligns with the PG&E Program Quality Assurance Project Plan (QAPP; CH2MHILL 2014) and Addendum (Critigen 2018) as well as general environmental chemistry industry guidelines. In these instances, application of a qualifier during the data validation process due to contamination in a sample blank can be interpreted as a requirement to essentially widen the error bars on potential false positives. Thus, in these select cases, the increased non-detect reporting limit was not presented correctly in associated reports as it reflected the pre-validation reporting limit instead of the post-validation reporting limit which considers lab quality samples in data interpretation.

> *Example*: In the First Quarter 2023 Quarterly Progress Report (Arcadis U.S., Inc. [Arcadis] 2023), the March 6, 2023 hexavalent chromium concentration measured at monitoring well MW-77-046 was erroneously reported as non-detect at a concentration of 0.2 micrograms per liter (µg/L; the original laboratory reporting limit) instead of non-detect at a concentration of 0.71 µg/L (the elevated reporting limit post-validation due to associated blank contamination).

**Corrective Action**

PG&E is committed to applying the best science and knowledge to our programs including rigorous quality assurance and quality control measures assuring the highest quality data and reporting to our oversight agencies and communities. To mitigate both past and potential future errors, all table-generation programming was updated as applicable to include additional logic to handle instances in which the reporting limit is less than the original detected result for validated data when a result was qualified as non-detect during the data validation process. Data quality processes reflect improved transparency and management throughout the lifecycle of the data collection and reporting process. Voluntary data quality audits will continue to be conducted to ensure adherence to best practices and the QAPP (CH2MHILL 2014, Critigen 2018).

Please call me at 916.786.3302 if you have any questions regarding this memorandum.

Sincerely,

Dan Bush

## Enclosures

Table 1. 2020 to 2023 Topock Chromium Non-detect Reporting Limit Correction Summary

## Works Cited


Arcadis. 2023. First Quarter 2023 Quarterly Progress Report, Topock Compressor Station, Needles, California, Pacific Gas and Electric Company. June 14.

CH2MHILL. 2014. PG&E Program Quality Assurance Project Plan, Revision 3, Pacific Gas and Electric Company, PG&E Program wide. December.

Critigen. 2018. Addendum to the PG&E Program Quality Assurance Project Plan for Groundwater and Surface Water Sampling Projects at the Topock Chromium Site, Revision 24 July 2018, Pacific Gas and Electric Company. July 24.

**Table 1. 2020 to 2023 Topock Chromium Non-detect Reporting Limit Correction Summary**
**PGE Topock Chromium Non-detect Reporting Limit Correction Memorandum**

| Well ID | Sample ID | Sample Date | Analyte (Unit) | Laboratory Reporting Limit Listed Incorrectly in Original Tables | Reporting Limits Adjusted for Blank Detections Listed in Corrected Tables | Report | Affected Report Title |
|---|---|---|---|---|---|---|---|
| IRZ-13S-095 | IRZ-13S-095-Q222 | 6/13/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (39) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 2.5: Extraction Well Monitoring Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | Well Performance | Exhibit 3.1: Second Quarter 2022 NTH IRZ Extraction Well Analytical Results |
| MW-20-070 | MW-20-070-Q222 | 6/13/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (21) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | | Table 3.5: NTH IRZ Dose-Response Monitoring Wells Performance Summary |
| MW-20-130 | MW-20-130-Q222 | 6/13/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (23) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| MW-39-080 | MW-39-080-0622 | 6/15/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (24) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | | Table 3.6: NTH IRZ Downgradient Response Monitoring Wells Performance Summary |
| MW-75-337 | MW-918-Q220 | 4/20/2020 | Ammonia as Nitrogen (mg/L) | ND (0.1) | ND (0.14) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| MW-76-181 | MW-76-181-Q222 | 6/13/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (25) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | | Table 3.5: NTH IRZ Dose-Response Monitoring Wells Performance Summary |
| MW-77-046 | MW-77-046-0323 | 3/6/2023 | Hexavalent Chromium (ug/L) | ND (0.2) | ND (0.71) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | | Table 3.6: NTH IRZ Downgradient Response Monitoring Wells Performance Summary |
| | | | | | | | Table 3.8: Remedy Compliance Monitoring Analytical Results |
| MW-77-158 | MW-77-158-0622 | 6/15/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (32) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | | Table 3.6: NTH IRZ Downgradient Response Monitoring Wells Performance Summary |
| MW-91-320 | MW-91-320-0220 | 2/26/2020 | Ammonia as Nitrogen (mg/L) | ND (0.1) | ND (0.11) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| MW-97-042 | MW-97-042-0321 | 3/17/2021 | Hexavalent Chromium (ug/L) | ND (0.2) | ND (0.8) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | MW-923-Q121 | | Hexavalent Chromium (ug/L) | ND (0.2) | ND (0.83) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| TW-02D | MW-912-Q222 | 6/15/2022 | Total Dissolved Iron (ug/L) | ND (20) | ND (37) | Progress | Appendix B: January 2020 to December 2023 Analytical Results |
| | | | | | | | Table 3.4: Process Control Monitoring Analytical Results |
| | | | | | | | Table 3.5: NTH IRZ Dose-Response Monitoring Wells Performance Summary |

**Abbreviations**
ug/L = microgram(s) per liter
IRZ = in situ reactive zone
mg/L = milligram(s) per liter
ND = not detected (at the value as shown)
NTH = National Trails Highway
Progress = Quarterly Progress Report

Arcadis U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco
California 94104
Phone: 415 374 2744
Fax: 415 374 2745
www.arcadis.com