

# Topock Project Executive Abstract

<p>Document Title:</p> <p>Combined Compliance Monitoring Program 2016 Annual Groundwater Monitoring Report and Performance Assessment Report, Interim Measures No. 3, PG&amp;E Topock Compressor Station, Needles, California (PGE20170115A)</p> <p>Submitting Agency: DOI</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: January 15, 2017</p> <p>Who Created this Document?: (i.e. PG&amp;E, DTSC, DOI, Other) – PG&amp;E</p>
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<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input checked="" type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>Is this a Regulatory Requirement?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, why is the document needed?</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>Submittal of this report is a compliance requirement under DOI ARARs.</p>	<p>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>
<p>Brief Summary of attached document:</p> <p><u>Interim Measures No. 3 (IM-3) Injection Well Field Performance Assessment Report (PAR):</u> The objective of the PAR is to document IM-3 injection system operational performance and evaluate groundwater quality and hydraulic changes associated with the injection system. Based on data obtained through December 2016, hydraulic response of the aquifer to injection activity is consistent with expectations, and there are no indications of adverse effects to aquifer water quality due to injections. In addition, sufficient injection capacity has been maintained with no significant injection well performance issues. The IM-3 injection well field continues to be an effective strategy for managing treated groundwater from IM-3.</p> <p><u>Compliance Monitoring Program (CMP), 2016 Annual Report:</u> The purpose of the Topock CMP is twofold: 1) to monitor changes in groundwater hydraulics and/or water quality of the aquifer in the injection well area, and 2) to ensure that the quality of the aquifer is not adversely affected by the injected water. The monitoring network consists of multiple observation wells (OW series) and compliance wells (CW series) screened in the shallow, middle, and/or deep zones of the Alluvial Aquifer. The injection of treated groundwater in the area began in 2005. As of 2016, the majority of the compliance and observation wells demonstrate a treated/injected water signature, with the exception of one shallow-zone observation well (OW-2S) which continues to show little to no water quality effects due to injection operations.</p> <p>This report presents groundwater analytical results and water level data collected during the 2016 annual CMP monitoring event conducted in October 2016. During the 2016 annual monitoring event, no samples exceeded the water quality objectives for hexavalent chromium, chromium, pH, or total dissolved solids. The next CMP event is scheduled to occur in October 2017.</p> <p>Written by: PG&amp;E</p>	

Recommendations:

PG&E proposes to eliminate redundant (i.e., second quarter) groundwater elevation maps from future annual CMP reports, starting with the 2017 annual report. In addition, PG&E proposes combining the next PAR (covering the 2017 to 2018 biennial period) with the 2018 annual CMP report for the IM-3 injection well field that will be submitted by January 15, 2019.

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

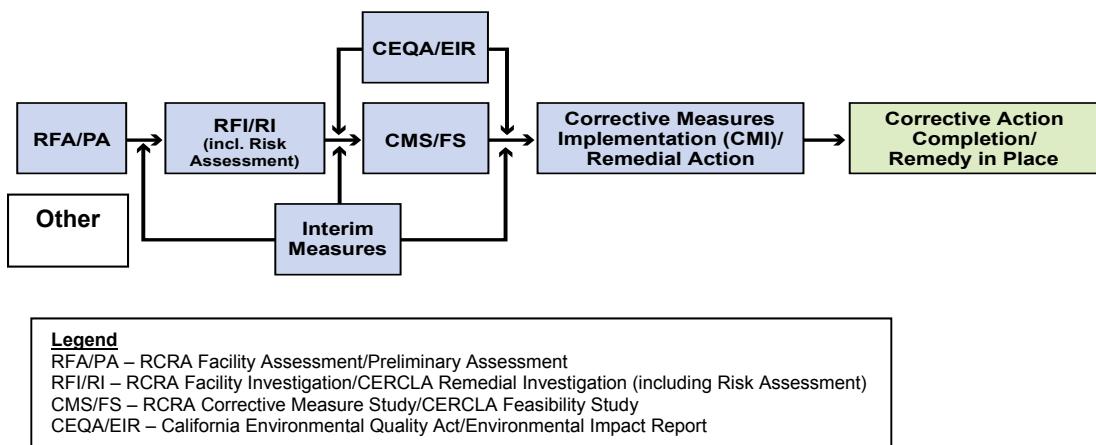
Submittal of this report is a compliance requirement under DOI ARARs beginning August 2011.

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](http://www.dtsc-topock.com)).*



Version 9



Pacific Gas  
and  
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January 15, 2017

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**Subject:** *Combined Compliance Monitoring Program 2016 Annual Groundwater Monitoring Report and Performance Assessment Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California* (Document ID: PGE20170115A)

Dear Ms. Innis and Mr. Yue:

Enclosed is the Combined Compliance Monitoring Program (CMP) 2016 Annual Groundwater Monitoring Report and Performance Assessment Report (PAR) for Interim Measures No. 3 (IM-3) at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station site near Needles, California. This combined report presents results of the biennial (2015-2016) assessment of IM-3 injection well field performance, and documents the results of compliance monitoring activities conducted during the 2016 annual period (from January 1, 2016 through December 31, 2016).

The first PAR for the IM-3 injection well field was submitted on November 30, 2006 in accordance with the California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC's) conditional authorization (Condition 18) to begin operating the IM-3 facilities, dated July 15, 2005. Based on data presented in this first biennial PAR, DTSC approved the continued operation of the IM-3 injection wells in a letter dated January 5, 2007. As part of this approval, DTSC required PG&E to continue to submit a PAR every 2 years to evaluate the injection well operations and the influence of treated water on aquifer quality. This combined report includes the sixth (2015-2016) biennial PAR and fulfills the DTSC requirement.

Additionally, the enclosed report presents CMP results for the 2016 annual period and has been prepared in accordance with the United States Department of the Interior's August 18, 2011 letter stating that the Interim Measures No. 3 Waste Discharge Requirements are applicable or relevant and appropriate requirements.

The current contingency plan specifies the water quality objectives/action levels for hexavalent chromium (Cr[VI]), chromium, total dissolved solids (TDS), and pH, which are used to determine whether contingency plan actions are necessary based on sample results. These threshold concentrations, used to trigger the contingency plan, are as follows: Cr(VI) greater than 32 micrograms per liter ( $\mu\text{g/L}$ ),

Ms. Pamela Innis and Mr. Aaron Yue

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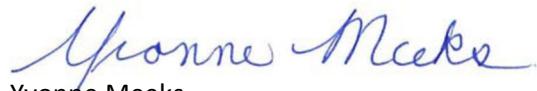
chromium greater than 28 µg/L, TDS greater than 10,800 milligrams per liter, and pH outside of the range of 6.2 to 9.2. No samples exceeded the water quality objectives for Cr(VI), chromium, pH, or TDS during the 2016 annual monitoring event. The next annual CMP monitoring event is scheduled for October 2017.

Please note that Section 6 of the enclosed report includes recommendations for modifications to the reporting program, including the following:

- Because aquifer hydraulic response to injection operations has been stable (with no significant seasonal variability), PG&E proposes to eliminate redundant groundwater elevation maps from future annual CMP reports. This is consistent with PG&E's recommendation in the previous CMP 2015 Annual Groundwater Monitoring Report. Starting with the 2017 annual report, a single set of groundwater elevation maps will be generated based on the fourth quarter manual water level measurements.
- The next PAR will cover the 2017 to 2018 biennial period, and PG&E proposes combining this 2017-2018 biennial PAR with the 2018 annual CMP report for the IM-3 injection well field that will be submitted by January 15, 2019.

Please contact me at (805) 234-2257 if you have any questions regarding the PAR/CMP or any concerns with PG&E's recommendations in Section 6.

Sincerely,



Yvonne Meeks

Topock Remediation Project Manager

Cc: Robert Perdue, Water Board

Jose Cortez, Water Board

Christopher Guerre, DTSC

Enclosure

Pacific Gas and Electric Company

# **COMBINED COMPLIANCE MONITORING PROGRAM 2016 ANNUAL GROUNDWATER MONITORING REPORT AND PERFORMANCE ASSESSMENT REPORT**

Interim Measures No. 3  
PG&E Topock Compressor Station  
Needles, California  
Document ID: PGE20170115A

January 15, 2017

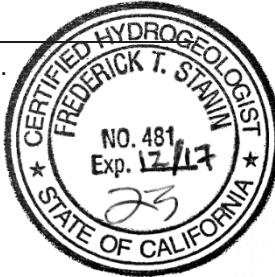
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COMBINED CMP 2016 ANNUAL GROUNDWATER MONITORING REPORT AND PERFORMANCE ASSESSMENT REPORT

**COMBINED CMP 2016  
ANNUAL  
GROUNDWATER  
MONITORING REPORT  
AND PERFORMANCE  
ASSESSMENT REPORT**



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Interim Measures No. 3  
PG&E Topock Compressor Station  
Needles, California

Document ID: PGE20170115A

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January 15, 2017

COMBINED CMP 2016 ANNUAL GROUNDWATER MONITORING REPORT AND PERFORMANCE  
ASSESSMENT REPORT

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- Appendix B      Field Data Collection Sheets (provided on CD-ROM only)
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## ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
ARAR	applicable or relevant and appropriate requirement
Arcadis	Arcadis U.S., Inc.
CMP	Compliance Monitoring Program
Cr(VI)	hexavalent chromium
CW	compliance well
DOI	United States Department of the Interior
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
IM-3	Interim Measures No. 3
mg/L	milligrams per liter
MRP	Monitoring and Reporting Program
MS	matrix spike
MSD	matrix spike duplicate
OW	observation well
PAR	Performance Assessment Report
PG&E	Pacific Gas and Electric Company
QAPP	Quality Assurance Project Plan
QC	quality control
TDS	total dissolved solids
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirement
WQO	water quality objective

# COMBINED CMP 2016 ANNUAL GROUNDWATER MONITORING REPORT AND PERFORMANCE ASSESSMENT REPORT

## 1 INTRODUCTION

This Combined Compliance Monitoring Program (CMP) 2016 Annual Groundwater Monitoring Report and Performance Assessment Report (PAR) has been prepared on behalf of Pacific Gas and Electric Company (PG&E) for the Interim Measures No. 3 (IM-3) injection well field area at the Topock Compressor Station site (the Site) near Needles, California. PG&E is currently implementing IM-3 to mitigate elevated chromium and hexavalent chromium (Cr[VI]) concentrations in groundwater at the Site. The components of IM-3 include groundwater extraction in the Colorado River floodplain, ex-situ treatment of the extracted groundwater, and discharge of the treated groundwater via an onsite injection well field located in the East Mesa Injection Area. Figure 1 shows the locations of the groundwater extraction, conveyance, treatment, and injection facilities associated with the IM-3 system.

The objectives of this report are to:

- Present the results of the biennial assessment of injection well field performance
- Document the results of CMP activities conducted during the 2016 annual period (from January 1, 2016 through December 31, 2016).

### 1.1 Description of Groundwater Injection Well Field

Treated water from the IM-3 system is pumped through an aboveground pipeline to the injection well field, which is located nearly 1,500 feet west of the treatment plant on what is known as the East Mesa (CH2M HILL 2015a). The injection well field comprises two injection wells (IW-02 and IW-03), which are constructed of 6-inch-diameter stainless-steel louvered screen connected to mild steel risers (CH2M HILL 2015a). The two injection wells are 340 and 330 feet deep, respectively, with a 160-foot screened interval and design injection capacity of 200 gallons per minute.

Three observation well (OW) clusters (OW-01, OW-02, and OW-05) are located between 50 and 100 feet from the injection wells on the East Mesa. Each OW cluster includes wells screened in the shallow, mid-depth, and deep monitoring zones. Four additional monitoring well clusters, known as the compliance well (CW) clusters (CW-01, CW-02, CW-03, and CW-04) surround the East Mesa and are located between 300 and 550 feet from the injection wells. Each CW cluster includes wells screened in the mid-depth and deep monitoring zones.

The locations of the injection wells, OW clusters, and CW clusters are shown on Figure 2, and Table 2 provides a summary of well construction and sampling method information for the wells in the CMP network.

### 1.2 PAR Background and Objectives

On July 15, 2005, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) conditionally authorized PG&E to begin operating the IM-3 facilities (DTSC 2005). This authorization allowed the injection of treated water from the IM-3 system as a limited-duration pilot study lasting through January 31, 2007. DTSC further directed PG&E to assess the performance of the injection well field and submit a report by November 30, 2006 (DTSC 2005).

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As directed, PG&E submitted the first biennial PAR for the IM-3 Injection Well Field, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2006) on November 30, 2006. This report documented performance of the IM-3 injection well field during the DTSC-mandated temporary operation period. Based on data presented in the first biennial PAR, DTSC approved the continued operation of the IM-3 injection wells in a letter dated January 5, 2007 (DTSC 2007). As part of this approval, DTSC required PG&E to continue to submit a PAR every 2 years to evaluate the injection well operations and the influence of treated water on aquifer quality (DTSC 2007).

On November 29, 2012, DTSC concurred with PG&E's proposal to combine the 2015-2016 biennial PAR with the annual CMP report for the IM-3 injection well field for submittal by January 15, 2017 (DTSC 2012). Accordingly, submission of this document, which includes the sixth biennial PAR, meets the requirement of Condition 18 in DTSC's July 15, 2005 and January 5, 2007 letters to assess the performance of the injection well field as a means for management of treated water from the IM-3 system beyond the pilot study period. This report documents injection system operational performance and evaluates groundwater quality and hydraulic changes associated with the injection system based on data obtained through December 2016.

## 1.3 CMP Background and Objectives

In addition to fulfilling the biennial PAR requirement, this document satisfies IM-3 injection well field compliance reporting requirements under the CMP. The objectives, proposed sampling plan and data evaluation methods, and reporting requirements for monitoring of the IM-3 injection well field were documented in the Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area, Topock Compressor Station, Needles, California (Compliance Monitoring Plan; CH2M HILL 2005a), which was submitted to the California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) and DTSC on June 17, 2005. An addendum to the Compliance Monitoring Plan was subsequently submitted on December 13, 2005 (Compliance Monitoring Plan Addendum; CH2M HILL 2005b). Several modifications to the CMP monitoring and reporting requirements have since been approved as summarized in Exhibit 1 below.

Exhibit 1. Historical Modifications to the CMP

Modification	Approval Date
Modification of reporting requirements	DTSC: June 9, 2006
Reduction of constituents analyzed during quarterly sampling of CMP observation wells	Water Board: January 23, 2007 DTSC: January 22, 2007
Change from laboratory pH to field collected pH for reporting	Water Board: October 16, 2007 DTSC: January 22, 2008
Modification of Cr(VI) analytical methods to extend hold time to 28 days	Water Board: November 13, 2007 DTSC: January 22, 2008

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Modification	Approval Date
Modification of sampling and reporting frequency and the field pH trigger range for the CMP contingency plan	Water Board: August 28, 2008 DTSC: December 12, 2008 (pH), September 3, 2009
United States Department of the Interior (DOI) adopts waste discharge requirements (WDRs) as applicable or relevant and appropriate requirements (ARARs)	DOI: August 18, 2011 Water Board: July 26, 2011
Modification of sampling and reporting frequency to eliminate the first half semiannual monitoring event and report (DOI 2015)	DOI: March 20, 2015 Water Board: March 16, 2015

**Note:** Information above taken from the Combined Compliance Monitoring Program Semiannual Groundwater Monitoring Report, Second Half 2014, and Performance Assessment Report, Interim Measures No. 3, Injection Well Field, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2015a).

Prior to September 2011, PG&E operated the IM-3 injection system under Water Board WDR Order No. R7-2004-0103 (adopted on October 13, 2004), Order No. R7-2006-0060 (issued on September 20, 2006), and the revised Monitoring and Reporting Program (MRP; issued on August 28, 2008 under Order No. R7-2006-0060). After Order No. R7-2006-0060 expired on September 20, 2011, discharge compliance oversight and enforcement was transferred from the Water Board to the United States Department of the Interior (DOI). As documented in the August 18, 2011 letter from the DOI to the Water Board, the DOI confirmed the following (DOI 2011):

- WDRs are ARARs under the Comprehensive Environmental Response Compensation and Liability Act response action ongoing at the Site.
- DOI will enforce the WDRs pursuant to the Administrative Consent Agreement entered into by DOI and PG&E in 2005 (DOI 2005), in lieu of the Water Board's adoption of a new Order to replace the expiring Order (Order No. R7-2006-0060) that originally established the WDRs.
- DOI concurred with the division of roles and responsibilities between DOI and the Water Board for monitoring and enforcing compliance with the WDRs.

Currently, PG&E operates the IM-3 injection system under the DOI waste discharge ARARs, which specify effluent limitations, prohibitions, specifications, and provisions for subsurface injection. The MRP set forth in the ARARs specifies the requirements for monitoring the area around the IM-3 injection well field (East Mesa Injection Area) to ensure that the injection of treated groundwater does not adversely impact aquifer water quality.

The IM-3 injection system comprises IW-02 and IW-03 (Figure 2). As discussed in Section 1.2, operation of the treatment system was conditionally approved on July 15, 2005 (DTSC 2005), and injection into IW-02 began on July 31, 2005 (CH2M HILL 2015a). Table 1 provides a chronological summary of injection activities implemented for IM-3 through 2015.

Currently, samples are collected from OWs and CWs according to the following schedule:

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- Nine OWs (OW-01S, OW-01M, OW-01D, OW-02S, OW-02M, OW-02D, OW-05S, OW-05M, and OW-05D) in the East Mesa Injection Area are sampled annually during the fourth quarter for a limited suite of constituents.
- In addition, six of the OWs (OW-01M, OW-01D, OW-02M, OW-02D, OW-05M, and OW-05D) are sampled for a full suite of constituents, one cluster at a time, on a triennial (once every 3 years) schedule. By the end of each 3-year period, all middle- and deep-zone OWs are sampled for a full suite of constituents. The triennial sampling occurs during the fourth quarter with the annual sampling.
- Eight CWs are sampled annually during the fourth quarter for a full suite of constituents.

The full suite of constituents includes Cr(VI), chromium, metals, specific conductance, total dissolved solids (TDS), turbidity, alkalinity, ammonia, and major inorganic cations and anions. The limited suite of constituents is similar to the full suite except that several metals/cations, total alkalinity, and ammonia are omitted.

Groundwater elevation data and field water quality data—including specific conductance, temperature, pH, oxidation reduction potential, dissolved oxygen, and turbidity—are also measured during each monitoring event.

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## 2 SUMMARY OF 2016 ACTIVITIES

This section provides an overview of activities completed for the 2016 annual monitoring event, which was conducted between October 18 and 20, 2016. Field activities included the following:

- Manual water level measurements and field water quality parameter data were collected prior to sampling.
- Water quality samples were collected from nine OWs and eight CWs.
- Field duplicate samples were collected at wells CW-02D, OW-01D, and OW-02M to assess field sampling and analytical quality control.

In addition, groundwater elevation data were collected continuously using pressure transducers installed in five of the 17 CMP wells: OW-01S, OW-02S, OW-05S, OW-05M, and OW-05D. Data from the transducers were downloaded approximately monthly during the 2016 annual period. Manual water level measurements were also collected from the 17 CMP wells quarterly.

Field activities were performed in accordance with existing standard operating procedures for the Site, which are available in the Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2015b).

CMP groundwater samples were analyzed by Asset Laboratories in Las Vegas, Nevada, a California-certified analytical laboratory. Analytical methods, sample volumes and containers, sample preservation, and quality control sample requirements were in accordance with the PG&E Program Quality Assurance Project Plan, Revision 2 (QAPP; CH2M HILL 2012) and QAPP Addendum (CH2M HILL 2015c).

Moreover, data validation and management were conducted in accordance with the quality assurance and quality control requirements in the QAPP and QAPP Addendum.

## 3 SUMMARY OF 2016 RESULTS

This section summarizes the results of the CMP groundwater sampling activities conducted in 2016. Nine OWs and eight CWs were sampled during the 2016 annual monitoring event. Locations of the CMP groundwater monitoring well clusters are shown on Figure 2. Groundwater samples collected from these wells were analyzed for Cr(VI), chromium, specific conductance, metals, TDS, turbidity, alkalinity, ammonia, and/or major inorganic cations and anions. These results are presented in Section 3.1, and the findings from the laboratory data quality review are provided in Section 3.2. Water level measurement and field water quality parameter data collected as part of sampling are presented in Section 3.3. Laboratory analytical reports and field data collection sheets for the 2016 annual monitoring event are included in Appendices A and B, respectively.

### 3.1 Analytical Results

Analytical results for Cr(VI) and chromium, other metals, and general chemistry parameters are presented in Tables 3, 4, and 5, respectively, and are discussed below. Where applicable, these results have been compared to the water quality objectives (WQOs)/action levels set forth in the Compliance Monitoring Plan Addendum (CH2M HILL 2005b) and updated in the revised contingency plan flowchart submitted by PG&E on August 8, 2006 (PG&E 2006). The contingency plan and associated flowchart address groundwater quality changes potentially associated with the IM-3 injection system, and specify threshold concentrations for Cr(VI), chromium, TDS, and pH that would trigger contingency actions. The target pH range for the CMP contingency plan was updated again in 2008 with the approval of the Water Board and DTSC (Water Board 2008; DTSC 2008).

#### 3.1.1 Hexavalent Chromium and Chromium

Table 3 summarizes the Cr(VI) and chromium analytical results for groundwater in the shallow, middle, and deep wells sampled during the 2016 annual monitoring event. These results are discussed below.

- For shallow wells:
  - Cr(VI) was reported at concentrations ranging up to 17 micrograms per liter ( $\mu\text{g/L}$ ). The maximum detected Cr(VI) concentration was collected in OW-02S.
  - Chromium was reported at concentrations ranging up to 19  $\mu\text{g/L}$ . The maximum detected chromium concentration was collected in OW-02S.
- For middle wells:
  - Cr(VI) was reported at concentrations ranging up to 5.9  $\mu\text{g/L}$ . The maximum detected Cr(VI) concentration was collected in CW-03M.
  - Chromium was reported at concentrations ranging up to 5.8  $\mu\text{g/L}$ . The maximum detected chromium concentration was collected in CW-03M.
- For deep wells:
  - Cr(VI) was reported at concentrations ranging up to 0.57  $\mu\text{g/L}$ . The maximum detected Cr(VI) concentration was collected in CW-04D.

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- Chromium was not detected in deep well samples collected during the 2016 annual monitoring event.

Cr(VI) and chromium concentrations in samples collected during the 2016 annual monitoring event did not exceed the WQO trigger levels of 32 µg/L and 28 µg/L, respectively. Thus, the contingency plan was not triggered for these constituents.

### **3.1.2 Other Metals and General Chemistry**

Other metals results for groundwater samples collected during the 2016 annual monitoring event are summarized in Table 4. Detected metals were arsenic, barium, manganese, molybdenum, selenium, vanadium, boron, calcium, total and dissolved iron, potassium, magnesium, and sodium. In general, concentrations of these metals observed during the 2016 annual monitoring event were similar to those observed historically.

General chemistry results—including specific conductance, field pH, TDS, turbidity, alkalinity, ammonia, and major anions—for groundwater samples collected during the 2016 annual monitoring event are summarized in Table 5. TDS concentrations ranged from 1,500 milligrams per liter (mg/L; OW-02S) to 4,700 mg/L (CW-03M), while field pH measurements ranged from 7.6 (OW-02D) to 8.5 (CW-03D). During the 2016 annual monitoring event, analytical results for the sampled wells met the WQOs for TDS (i.e., less than 10,800 mg/L) and pH (i.e., between 6.2 and 9.2). Thus, the contingency plan was not triggered for these parameters.

## **3.2 Analytical Data Quality Review**

The laboratory analytical data generated from the 2016 annual monitoring event were independently reviewed by project chemists to assess data quality and identify deviations from analytical requirements. The quality assurance and quality control requirements are outlined in the QAPP and QAPP Addendum (CH2M HILL 2012 and 2015c, respectively). A detailed discussion of data quality for CMP sampling data is presented in the data validation reports, which are maintained in the project file and available upon request.

### **3.2.1 Matrix Spike and Matrix Spike Duplicate Samples**

Matrix spike (MS)/matrix spike duplicate (MSD) samples were performed as required by the analytical method. In some cases, other project samples were used to fulfil the laboratory's quality control (QC) batch requirements. When CMP samples were selected for MS/MSD analyses, recoveries were within QC criteria with a few exceptions as follows:

- Dissolved lead was recovered at concentrations less than QC limits in the MS and MSD of sample CW-02M-Q416. The associated parent sample was qualified as estimated non-detect for dissolved lead and flagged "UJ" accordingly.
- Dissolved lead and dissolved iron were recovered at concentrations less than QC limits in the MS of sample CW-01M-Q416. The associated parent sample was qualified as estimated non-detect ("UJ" flag) for dissolved lead and estimated detect ("J" flag) for dissolved iron, accordingly.

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### **3.2.2 Quantitation and Sensitivity**

All method and analyte combinations met the project decision-making requirements.

### **3.2.3 Holding Time**

All samples were analyzed within the QAPP-recommended holding times.

### **3.2.4 Field Duplicates**

Field duplicate samples were collected and analyzed, and met QC criteria with exceptions as follows:

- Dissolved barium and dissolved vanadium demonstrated a relative percent difference greater than QC limits in the field duplicate pair of samples CW-02D-Q416/MW-901-Q416. The detected results were qualified as estimated (“J” flagged), and the non-detects were qualified as estimated non-detects (“UJ” flagged), accordingly.

### **3.2.5 Method Blanks**

Method blanks were analyzed at the required frequency and were free of contamination.

### **3.2.6 Equipment Blanks**

Equipment blanks were collected at the frequency required by the QAPP and were free of contamination.

### **3.2.7 Laboratory Duplicates**

All laboratory duplicate acceptance criteria for the analytical methods were met.

### **3.2.8 Laboratory Control Sample**

Laboratory control samples were analyzed as required, and accuracy and precision criteria were met.

### **3.2.9 Calibration**

Initial calibration curves, blanks, and verification analyses were performed at the required frequency and met QC criteria.

### **3.2.10 Conclusion**

Except as noted above, the analyses and data quality met the QAPP and laboratory method QC criteria. The data are considered usable, as qualified during the data validation process, and are of adequate quantity and quality for the purpose of the CMP.

## **3.3 Field Parameter Data**

Water level was measured at each well prior to purging and sampling. In addition, water quality parameters, including specific conductance, temperature, pH, oxidation reduction potential, dissolved

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oxygen, and turbidity, were measured during purging using a field water quality instrument and flow-through cell to determine sufficient well purging. Field water quality data collected during the 2016 annual monitoring event are summarized in Table 6. Field data collection sheets for the 2016 annual monitoring event are provided in Appendix B.

### **3.4 ARAR Monitoring Requirements**

Appendix C identifies the laboratory that performed each analysis and lists the following information for the 2016 annual monitoring event, as required by the ARARs:

- Sample location
- Sample identification number
- Sampler name
- Sample date
- Sample time
- Laboratory performing analysis
- Analysis method
- Parameter
- Analysis date
- Laboratory technician
- Result unit
- Sample result
- Reporting limit
- Method detection limit.

## 4 INFLUENCE OF TREATED WATER ON AQUIFER WATER QUALITY

The influence of injection operations on aquifer water quality in the East Mesa Injection Area and vicinity is assessed through the comparison of groundwater chemistry measured in the OWs and CWs, both pre-injection (baseline) and post-injection, to chemistry of the injected water.

The subsurface injection of effluent water (treated groundwater) from the IM-3 groundwater treatment system was initiated on July 31, 2005. Since that time, PG&E has conducted routine sampling, including effluent sampling, of the IM-3 treatment system in compliance with the WDRs for the IM-3 facility, previously enforced under WDR Order No. R7-2006-0060 and currently enforced under the ARARs. Analytical results from the effluent sampling are used to establish the baseline chemistry for treated water injected into the IM-3 injection well field.

Table 7 provides selected treated water analytical results from system sampling events conducted on August 29, 2005; April 7, 2010; October 6, 2015; and October 4, 2016. As discussed in previous CMP reports, while concentrations of some parameters vary in the effluent samples, a number of constituents have exhibited relatively consistent concentrations over the duration of injection operations (e.g., Cr[VI], chromium, fluoride, dissolved molybdenum, nitrate/nitrite as nitrogen, sulfate, and TDS [CH2M HILL 2015a]). These seven constituents are used to characterize the injected water and serve as a basis for determining whether a given groundwater monitoring well is being affected by injection operations. Based on review of the August 2005 through October 2016 effluent sampling results, the injected water exhibits the following general characteristics:

- Cr(VI): typically non-detect (or below 1.0 µg/L)
- Chromium: typically non-detect (or below 1.0 µg/L)
- Fluoride: approximately 2 mg/L
- Molybdenum: approximately 20 µg/L
- Nitrate/nitrite as nitrogen: approximately 3 mg/L
- Sulfate: approximately 500 mg/L
- TDS: approximately 4,000 mg/L.

These chemistry characteristics serve as a general basis for comparison, but should not be considered statistically representative of the effluent water quality over time.

Pre-injection conditions in the East Mesa Injection Area and vicinity were established based on the results of baseline sampling conducted for the OWs (July 27 and 28, 2005) and CWs (September 15, 2005). Analytical results for the baseline samples are presented in Table 7 and are considered representative of groundwater unaffected by injection operations. Comparison of pre-injection groundwater quality to the injected water profile shows that there are some similarities in constituent concentrations. For example, most of the baseline samples collected from deep wells (OW-01D, OW-02D, OW-05D, CW-03D, and CW-04D) contained no detectable Cr(VI) or chromium, similar to the injected water (CH2M HILL 2015a).

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However, other constituents are present at significantly different concentrations in the injected water versus pre-injection groundwater. Thus, when considering the entire suite of seven constituents, as shown in Table 7, it is evident that the injected water and pre-injection groundwater have distinct chemistries.

In contrast, Table 8 compares constituent concentrations in the injected water (treated groundwater) to those measured in the OWs and CWs during the most recent (2016 annual) monitoring event (i.e., more than 10 years following the initiation of injection operations). Unlike the pre-injection (July through September 2005) well monitoring results, the 2016 annual monitoring results demonstrate that water chemistry measured in a majority of the OWs and CWs either has shifted towards or been replaced by the chemistry of the injected treated water. This conclusion is supported by the concentration versus time plots presented on Figures 3A through 3E for all of the OWs and CWs. These plots, which include data from baseline through the 2016 annual monitoring event, illustrate shifts from baseline concentrations towards the injected treated water chemistry that indicate arrival of the injected water front.

In general, the following 12 wells currently display the characteristics of injected water and are considered to be representative of locations and depths where this water has largely displaced ambient groundwater: OW-01M, OW-01D, OW-02M, OW-02D, OW-05M, OW-05D, CW-01M, CW-01D, CW-02M, CW-02D, CW-03D, and CW-04D. Four additional wells (OW-01S, OW-05S, CW-03M, and CW-04M) exhibit shifting chemistries (e.g., increasing concentrations of sulfate, TDS, and/or nitrate/nitrite as nitrogen) indicative of potential injected water influence. However, to date, shallow observation well OW-02S has demonstrated little or no water quality effects due to injection operations. Concentrations of sulfate and TDS in this well have remained relatively stable and consistent with baseline levels.

## 5 INJECTION WELL OPERATIONAL ASSESSMENT

### 5.1 Injection Well Performance

The primary performance metric for the IM-3 injection well field is sufficient capacity to accept treated water from the IM-3 plant. Table 9 lists the average injection rate, monthly and cumulative total volumes of water injected, and the primary injection well in service from August 2005 through December 2016. In addition, Table 1 summarizes operational status of the IM-3 injection wells from July 2005 through December 2016.

Injection well performance has been monitored since the wells were put into service and is tracked using specific injectivity as the metric. Specific injectivity is defined as the rate of injection (measured in gallons per minute) per unit of draw-up/water level rise in the well (measured in feet). The performance of injection wells typically declines over time due to a variety factors (e.g., plugging of the well screen, sand pack, and/or surrounding formation by sediments, mineral precipitates, or biological deposits; or air entrapment in the formation).

Manganese oxide precipitation is believed to be the primary cause of performance decline in the IM-3 injection wells (CH2M HILL 2015a). Since 2010, the IM-3 treatment plant has been operated to reduce manganese concentrations in the effluent (treated) water (i.e., generally to less than 10 µg/L) and to decrease pH of the effluent water to 7.0 via acidification (CH2M HILL 2015a). If a significant decrease in specific injectivity is observed, the injection wells are backwashed at a higher frequency or rehabilitated using Aqua Gard™ or other methods (CH2M HILL 2015a). Figure 4 shows the history of IM-3 well performance trends and well maintenance events. Aqua Gard™ treatments were conducted in April 2015, June 2015, September 2015, and February 2016.

Currently, each injection well (IW-02 and IW-03) has sufficient capacity to individually manage 100 percent of the effluent water flow from the IM-3 treatment plant. Furthermore, the system has adequate spare capacity, and the maintenance program has been effective in maintaining sufficient injection capacity for operation.

### 5.2 Water Level Measurements

Table 10 summarizes the manual water level measurements and calculated groundwater elevations from the quarterly well gauging events conducted in 2016. In compliance with Condition No. 2 of DTSC's 2009 conditional approval letter (DTSC 2009), the IM-3 Plant Manager confirmed that the IM-3 system was operating normally both the day before and the day of manual water level collection, with no injection well backwashing events or unplanned shutdowns.

In addition to the manual water level measurements, water level data were collected continuously (with readings recorded every 30 minutes) using pressure transducers deployed in select wells: OW-1S, OW-2S, OW-5S, OW-5M, and OW-5D. Hydrographs produced using the transducer data are presented on Figures 5A through 5C, and illustrate groundwater elevation trends and vertical hydraulic gradients observed over the biennial period (2015-2016) for specific OWs.

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Figures 6A (April 29, 2016) and 7A (December 6, 2016) show groundwater elevations for the three shallow wells, and the shallow-zone water level elevations are not contoured due to an insufficient number of wells to satisfactorily illustrate a groundwater potentiometric surface under injection conditions. Groundwater elevation maps for the middle and deep wells are provided as Figures 6B and 7B, and Figures 6C and 7C, respectively. The data that were plotted and/or used for contouring were the April 29, 2016 (second quarter, Figure 6 series) and December 6, 2016 (fourth quarter, Figure 7 series) manual water level measurements collected within a 1-hour period.

As shown on Figure 2, the IM-3 injection well field is located in the uplands (East Mesa) area of the Site. Based on site-wide groundwater elevation data, regional groundwater flow in the uplands portion of the Site is generally to the east/northeast (CH2M HILL 2015b). On a local scale, as shown on Figures 6B, 6C, 7B, and 7C, injections of treated water have resulted in a potentiometric mound in the middle and deep zones centered on the active IM-3 injections wells. Consistent with previous observations, the potentiometric mound is generally elliptical in shape, with the major axis running from approximately southwest to northeast (CH2M HILL 2015a, Arcadis U.S., Inc. [Arcadis] 2016). The potentiometric mound appears to be stable at a height of approximately 1 foot or less above the surrounding water level (based on the April 29, 2016 manual water level measurements [see Figures 6B and 6C] and December 6, 2016 manual water level measurements [see Figures 7B and 7C]), which is consistent with information reported previously (CH2M HILL 2015a). Groundwater elevation contour maps generated using fourth quarter 2014 (October 21, 2014) and fourth quarter 2012 (October 23, 2012) data are provided in Appendix D for comparison. As shown by these figures, the hydraulic response of middle- and deep-zone monitoring wells to injection activity has been relatively predictable over the past 4 years, and significant change is not anticipated with ongoing injections at the current rate.

Table 11 summarizes the vertical gradients calculated using the December 6, 2016 manual water level measurement data. In general, average vertical gradients have been upward at the OW and CW clusters since injection began (CH2M HILL 2015a). As shown in Table 11, upward vertical gradients were generally observed between depth intervals (i.e., deep to middle and middle to shallow) in a given well cluster, consistent with historical data. The exceptions were as follows:

- Downward vertical gradient observed between OW-02S and OW-02M. As discussed in Section 4, OW-02S has shown little or no water quality effects due to injection operations to date. This, taken into consideration with the vertical gradient data, suggests a lesser degree of hydraulic connection between the injection zone (deeper zones) and shallow zone monitored by OW-02S.
- Downward vertical gradient observed between OW-05M and OW-05D. A downward gradient between the middle and deep zones at the OW-05 cluster location is also demonstrated by the hydrographs for OW-05M and OW-05D, generated using available transducer data (see Figure 5C), and is consistent with the relatively higher degree of mounding observed in the middle zone versus the deep zone based on the April 29, 2016 and December 6, 2016 manual water level measurement data.

Calculated vertical gradients were generally of the same order of magnitude between well clusters or between the different depth intervals (Table 11). The magnitude of the vertical gradients for the OW-05 cluster (calculated using December 6, 2016 groundwater elevation data) were slightly higher than those for other well clusters, which may be due to the close proximity of OW-05 to the primary injection well in service at the time (IW-03). Because the injection wells are screened in the deeper portions of the aquifer,

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the head increase resulting from the injection of treated groundwater is typically greater in the deep and middle zones compared to the shallow zone (CH2M HILL 2015a).

## 6 SUMMARY AND RECOMMENDATIONS

The injection well field has operated successfully since July 31, 2005, and has proven to be an effective strategy for managing treated groundwater generated through implementation of IM-3 at the Site. The following summarizes the performance highlights of the injection system:

- **Predicted aquifer response:** Hydraulic response of the aquifer to injection activity is consistent with expectations. Potentiometric mounding with a magnitude of approximately 1 foot or less occurs primarily in the middle and deep aquifer zones in the immediate vicinity of the injection well, dissipating with distance from the injection well. Outside of the injection area, gradients indicate groundwater flow generally to the east/northeast, consistent with regional groundwater flow in the uplands portion of the Site.
- **No adverse effect to aquifer water quality:** There are no indications of adverse effects to aquifer water quality as a result of injections. In general, water quality in the shallow, middle, and deep zones has improved (i.e., decreasing Cr[VI] and chromium concentrations) where the injected water has displaced native groundwater. Only the shallow well OW-02S has shown little to no water quality effects from injection operations.
- **Successful injection well operation and maintenance:** During the sixth biennial period, sufficient injection capacity was maintained with no significant injection well performance issues. Well maintenance using backwashing and Aqua Gard™ treatment continues to be effective.
- **Improved environment and safer operations:** Operating the injection wells reduces the adverse environmental and safety impacts associated with the trucking of treated groundwater to a permitted offsite facility. Reduced truck traffic results in lower vehicle emissions and reduces the chance of accidents.
- **Water quality objectives achieved:** During the 2016 annual monitoring event, no sample results exceeded the WQOs for Cr(VI), chromium, pH, or TDS.

Based on the above, PG&E plans continued operation of the IM-3 injection well field for the management of treated water under DTSC and DOI oversight. The next annual CMP monitoring event will occur in October 2017, and the groundwater monitoring report for this event will be submitted by January 15, 2018. The next PAR will cover the 2017 to 2018 biennial period, and PG&E proposes combining this 2017-2018 biennial PAR with the 2018 annual CMP report for the IM-3 injection well field that will be submitted by January 15, 2019.

In addition, as previously discussed in the CMP 2015 Annual Groundwater Monitoring Report (Arcadis 2016), PG&E proposes to eliminate redundant (i.e., second quarter) groundwater elevation maps from future annual CMP reports, starting with the 2017 annual report. This is because the potentiometric mounding associated with injection operations has been stable with no substantial seasonal variability. Quarterly water level data will continue to be provided in tabular format, and a single set of groundwater elevation maps will be generated based on the fourth quarter manual water level measurements.

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## 8 CERTIFICATION

PG&E submitted a signature delegation letter to the DOI and the Water Board on February 27, 2013 (PG&E 2013). The letter delegated PG&E signature authority to Ms. Sheryl Bilbrey, Ms. Yvonne Meeks, and Mr. Curt Russell for correspondence regarding required ARARs.

Certification Statement:

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

**Signature:**



**Name:**

Yvonne J. Meeks

**Company:**

Pacific Gas and Electric Company

**Title:**

Topock Environmental Remediation Project Manager

**Date:**

January 15, 2017

# TABLES

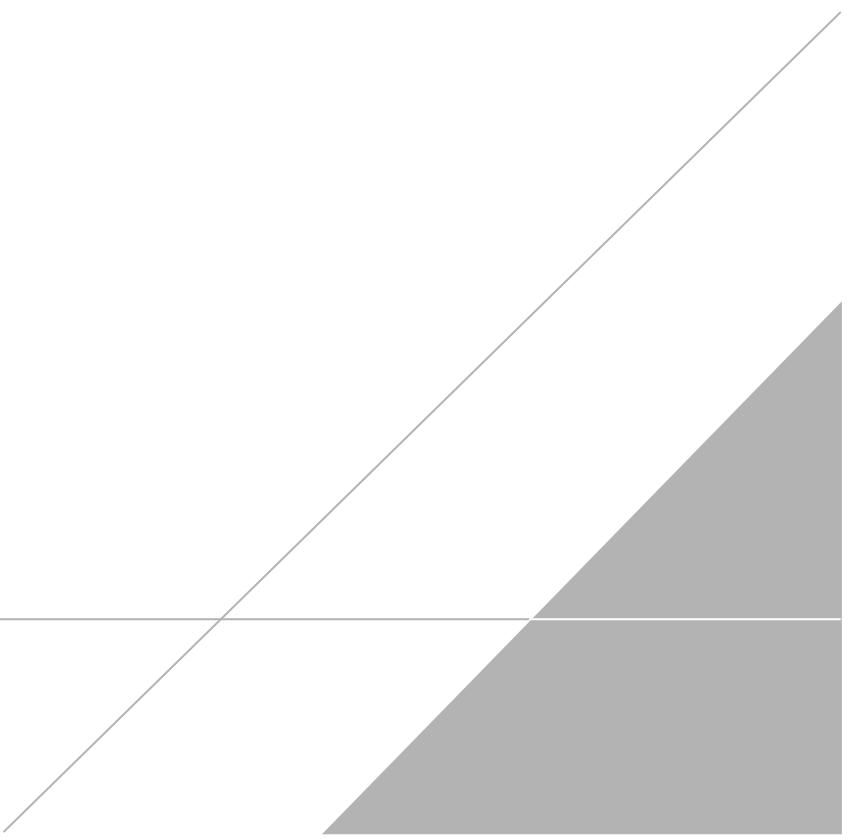


Table 1

**Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2016**

PG&amp;E Topock Compliance Monitoring Program

<b>Time Period</b>	<b>Injection Status</b>
July 31, 2005 to Fourth Quarter 2005	Injection occurred at IW-02.
First Quarter 2006	Injection occurred primarily at IW-02 except during intervals of operational testing, when injection was divided equally between IW-02 and IW-03.
Second Quarter 2006	Injection occurred at IW-02.
Third Quarter 2006	In August 2006, IW-02 went offline for routine maintenance, and injection commenced at IW-03.
Fourth Quarter 2006	Injection occurred at IW-03, except during routine maintenance.
First Quarter 2007	Injection occurred at IW-03 and transitioned over to IW-02 on March 8.
Second Quarter 2007	Injection occurred at IW-03 from April 3 through June 20. Injection switched to IW-02 on June 20 and continued through July 20, 2007.
Third Quarter 2007	Injection occurred at IW-03 after July 20. Injection occurred at IW-02 on August 30 for an injection test and then returned to IW-03 after August 31.
Fourth Quarter 2007	Injection occurred at IW-03 and then switched to IW-02 on September 25 for routine maintenance. Injection returned to IW-03 after October 9.
First Quarter 2008	Injection occurred at IW-03 only. From February 5 through February 13, well maintenance activities were conducted at IW-02.
Second Quarter 2008	Injection occurred at IW-03 only. IM-3 system offline from April 21 through April 28 due to routine maintenance. Backwashing was performed at IW-03 on April 9, May 7, May 15, May 22, June 3, and June 4, 2008.
Third Quarter 2008	Injection occurred primarily at IW-03. Injection also occurred at IW-02 for short interval on July 25 and from August 12 - August 31, 2008. Backwashing was performed at IW-03 on June 17, June 27, July 9, July 15, July 17, July 18, August 12, August 13, September 2, and September 3, 2008. Backwashing was performed at IW-02 on September 9 - September 11, 2008.
Fourth Quarter 2008	Injection occurred at IW-03 and then switched to IW-02 on September 23. Injection returned to IW-03 on October 7 and switched back to IW-02 on October 21. Injection primarily occurred at IW-02 until November 11 when it switched to IW-03 until December 3, 2008. Injection continued at IW-02 until December 16, 2008 and occurred concurrently and continued at IW-03 on December 11, 2008.
First Quarter 2009	Injection switched to IW-02 on December 30, 2008. On January 13, 2009 injection transitioned to IW-03. Backwashing events were performed periodically during the intervals when each injection well was offline. Routine and scheduled maintenance occurred December 18, 2008 and January 21, 2009 at which time both wells were offline.
Second Quarter 2009	Injection continued at IW-03 until April 20, 2009. Injection ceased from April 20, 2009 to April 27, 2009 due to routine maintenance after which injection continued at IW-03 until May 26, 2009 when it transitioned to IW-02. Injection continued at IW-02 until June 9, 2009 when it switched to IW-03. Injection returned to IW-02 on June 24, 2009.
Third Quarter 2009	IM-3 injection alternates between the two wells approximately every two weeks. Injection continued at IW-02 until July 8, when it transitioned to IW-03. Injection ceased from July 23 to 27, 2009 when it continued at IW-03 until September 9, 2009. Unplanned downtime occurred from September 9 - 14, 2009. On September 16, 2009 injection continued at IW-02, except during times of routine maintenance or otherwise mentioned.
Fourth Quarter 2009	Injection occurred at IW-02 until November 25, 2009 when it switched to IW-03. Injection continued at IW-03, except during times of routine maintenance.
First Half 2010	Injection occurred mainly at IW-03 until March 3, 2010. Beginning March 3, 2010, IM-3 injection alternated between the two wells approximately every two weeks until April 20, 2010 for a planned shutdown. On April 22, 2010, injection resumed at IW-03 and alternated between the two wells approximately every two weeks. Backwashing was performed periodically during the intervals when each injection well was offline.
Second Half 2010	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 22 - August 25, August 30 - September 7, September 16 - October 15, November 5 - 18, and December 17 - 31, 2010.
First Half 2011	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 27 - February 10, February 23 - March 7, March 30 - April 20, May 6 - June 7, and June 22 - 28, 2011. Backwashing was performed periodically during the intervals when each injection well was offline. A planned shutdown occurred April 25 - 29 and June 28 - 30.

Table 1

**Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2016**

PG&amp;E Topock Compliance Monitoring Program

Time Period	Injection Status
Second Half 2011	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 14 through August 3, August 10 through 13, September 11 through 22, October 6 through 10, and October 27 through December 31. Backwashing was performed periodically during the intervals when each injection well was offline.
First Half 2012	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 1 through January 6, 2012; February 2 through February 16, 2012; March 2 through April 5, 2012; May 10 through May 21, 2012; May 29 through June 1, 2012; June 14, 2012; and June 21 through June 27, 2012.
Second Half 2012	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 18 through July 25, 2012; August 1 through August 13, 2012; August 17 through August 22, 2012; August 31 through September 26, 2012; and September 29 through October 9, 2012.
First Half 2013	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: March 5 through March 14, 2013; April 8 through May 22, 2013; June 24 through June 25, 2013; and June 29 through June 30, 2013.
Second Half 2013	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 1 - 9, 2013; July 31 through August 12, 2013; October 22 through November 6, 2013; November 26 through December 12, 2013; and December 28 - 31, 2013.
First Half 2014	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: January 6, 2014; January 16 through January 29, 2014; April 17 through 23, 2014; and May 10 through June 22, 2014, and June 25, 2014.
Second Half 2014	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 21 - 30, 2014; September 23 - 25, 2014; and November 19 - 24, 2014.
First Half 2015	Injection occurred primarily at IW-03 with the exception of the following periods when it occurred primarily at IW-02: January 1 - 14, 2015; March 5 - 31, 2015; April 7 and 8, 2015; June 11, 2015; and June 26, 2015. The system was shut down from April 28, 2015 to May 4, 2015 for scheduled semiannual facility maintenance.
Second Half 2015	Injection occurred primarily at IW-02 with the exception of the following periods when it occurred primarily at IW-03: July 1 - 19, 2015; August 31 - September 1, 2015; and September 26 - October 13, 2015.
First Half 2016	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 1 through 31, 2016; February 1 through 25, 2016; and March 1 through 4, 2016.
Second Half 2016	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 1 through 31, 2016; August 1, 2016; November 12, 2016; and December 1 through 11, 2016.

Table 2

**Well Construction and Sampling Summary for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

Well ID	Site Area	Measuring Point Elevation (feet amsl)	Screen Interval (feet bgs)	Well Casing (inches)	Depth to Water (feet btoc)	Sampling System	Typical Purge Rate (gpm)	Typical Purge Volume (gallons)	Pump Depth (feet bgs)	Transducer Status
<b>IM Compliance Wells</b>										
CW-01M	East Mesa	566.07	140 - 190	2 (PVC)	109.66	Temp Redi-Flo AR	2	42	165.0	
CW-01D	East Mesa	566.46	250 - 300	2 (PVC)	109.45	Temp Redi-Flo AR	3	98	180.0	
CW-02M	East Mesa	549.45	152 - 202	2 (PVC)	93.36	Temp Redi-Flo AR	2	56	195.0	
CW-02D	East Mesa	549.43	285 - 335	2 (PVC)	92.91	Temp Redi-Flo AR	3	134	159.0	
CW-03M	East Mesa	534.10	172 - 222	2 (PVC)	78.26	Temp Redi-Flo AR	2	74	180.0	
CW-03D	East Mesa	534.14	270 - 320	2 (PVC)	77.57	Temp Redi-Flo AR	3	134	143.0	
CW-04M	East Mesa	518.55	119.5 - 169.5	2 (PVC)	62.07	Temp Redi-Flo AR	2	56	160.0	
CW-04D	East Mesa	518.55	233 - 283	2 (PVC)	61.86	Temp Redi-Flo AR	3	124	134.0	
<b>IM Observation Wells</b>										
OW-01S	East Mesa	550.21	83.5 - 113.5	2 (PVC)	94.21	Temp Redi-Flo AR	1	10.2	100.0	Active
OW-01M	East Mesa	550.36	165 - 185	2 (PVC)	93.98	Temp Redi-Flo AR	3	48	109.6	
OW-01D	East Mesa	550.36	257 - 277	2 (PVC)	93.64	Temp Redi-Flo AR	3	94	111.4	
OW-02S	East Mesa	548.88	71 - 101	2 (PVC)	92.12	Temp Redi-Flo AR	1	15	100.0	Active
OW-02M	East Mesa	548.52	190 - 210	2 (PVC)	92.02	Temp Redi-Flo AR	2	61	111.4	
OW-02D	East Mesa	549.01	310 - 330	2 (PVC)	92.18	Temp Redi-Flo AR	2	127	110.3	
OW-05S	East Mesa	551.83	70 - 110	2 (PVC)	95.33	Temp Redi-Flo AR	1	8	100.0	Active
OW-05M	East Mesa	551.81	210 - 250	2 (PVC)	94.33	Temp Redi-Flo AR	2	80	112.5	Active
OW-05D	East Mesa	552.41	300 - 320	2 (PVC)	95.32	Temp Redi-Flo AR	3	131	113.2	Active

## Notes:

amsl = above mean sea level

bgs = below ground surface

btoc = below top of casing

gpm = gallons per minute

IM = Interim Measures

PVC = polyvinyl chloride

Temp Redi-Flo AR = temporary adjustable-rate electric submersible pump

Depth to water in each well was measured on December 6, 2016.

All wells were purged and sampled using the 3-well-volume method.

Table 3

**Chromium Results for Groundwater Samples, 2016***PG&E Topock Compliance Monitoring Program*

<b>Location ID</b>	<b>Sample Date</b>	<b>Method:</b>	EPA 218.6	EPA 200.8
			Hexavalent Chromium ( $\mu\text{g}/\text{L}$ )	Chromium ( $\mu\text{g}/\text{L}$ )
CW-01M	10/19/2016		0.86	1.2
CW-01D	10/19/2016		0.45	ND (1.0)
CW-02M	10/18/2016		1.8	1.6
CW-02D	10/19/2016		0.33	ND (1.0)
CW-02D	10/19/2016	(FD)	0.29	ND (1.0)
CW-03M	10/18/2016		5.9	5.8
CW-03D	10/18/2016		0.37	ND (1.0)
CW-04M	10/18/2016		2.2	2.1
CW-04D	10/18/2016		0.57	ND (1.0)
OW-01S	10/18/2016		5.0	5.5
OW-01M	10/18/2016		0.52	ND (1.0)
OW-01D	10/18/2016		0.21	ND (1.0)
OW-01D	10/18/2016	(FD)	ND (0.20)	ND (1.0)
OW-02S	10/19/2016		17	19
OW-02M	10/20/2016		0.29	ND (1.0)
OW-02M	10/20/2016	(FD)	0.30	ND (1.0)
OW-02D	10/20/2016		0.53	ND (1.0)
OW-05S	10/19/2016		13	14
OW-05M	10/19/2016		0.50	ND (1.0)
OW-05D	10/19/2016		0.35	ND (1.0)

Notes:

 $\mu\text{g}/\text{L}$  = micrograms per liter

EPA = United States Environmental Protection Agency

FD = field duplicate

ND = parameter not detected at the listed reporting limit

Hexavalent chromium and chromium samples are field filtered.

Table 4  
**Metals Results for Groundwater Samples, 2016**  
PG&E Topock Compliance Monitoring Program

Method:		Dissolved EPA 200.7, 200.8, 245.1, 6010B/6020																								
Location ID	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Boron	Calcium	Iron, total	Iron, dissolved	Potassium	Magnesium	Sodium
CW-01M	10/19/2016	ND (50)	ND (2.5)	1.2	87	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (25 J)	1.3	ND (0.20)	17	ND (5.0)	3.6	ND (12)	ND (12)	2.1	ND (50)	1.0	160	0.62	0.046 J	13	13	1300
CW-01D	10/19/2016	ND (50)	ND (2.5)	1.1	23	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (25)	0.87	ND (0.20)	20	ND (5.0)	3.8	ND (12)	ND (12)	1.9	ND (50)	1.1	150	ND (0.020)	ND (0.020)	13	16	1400
CW-02M	10/18/2016	ND (50)	ND (2.5)	2.0	67	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (25 J)	1.2	ND (0.20)	18	ND (1.0)	2.7	ND (2.5)	ND (12)	3.7	ND (10)	1.2	140	1.4	ND (0.020)	11	9.8	1400
CW-02D	10/19/2016	ND (50)	ND (2.5)	3.1	16 J	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (5.0)	1.9	ND (0.20)	16	ND (5.0)	3.5	ND (2.5)	ND (2.5)	4.1 J	ND (50)	1.1	90	ND (0.020)	ND (0.020)	11	4.8	1400
CW-02D	10/19/2016 (FD)	ND (50)	ND (12)	3.1	ND (25 J)	ND (2.5)	ND (12)	ND (0.50)	ND (5.0)	ND (5.0)	1.8	ND (0.20)	15	ND (5.0)	3.3	ND (12)	ND (2.5)	ND (5.0 J)	ND (50)	1.1	90	ND (0.020)	ND (0.020)	8.7	4.9	1500
CW-03M	10/18/2016	ND (50)	ND (2.5)	1.2	48	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (25)	1.2	ND (0.20)	28	ND (1.0)	ND (2.5)	ND (2.5)	ND (12)	2.8	ND (10)	1.3	190	0.54	ND (0.020)	14	15	1700
CW-03D	10/18/2016	ND (50)	ND (2.5)	1.5	17	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (25)	1.9	ND (0.20)	17	ND (1.0)	3.2	ND (2.5)	ND (12)	2.6	ND (10)	1.1	78	0.030	ND (0.020)	11	5.3	1500
CW-04M	10/18/2016	ND (50)	ND (2.5)	1.9	93	ND (2.5)	ND (2.5)	ND (0.50)	ND (5.0)	ND (25)	0.78	ND (0.20)	9.0	ND (5.0)	2.9	ND (2.5)	ND (12)	3.7	ND (50)	1.0	190	0.14	ND (0.020)	13	15	1300
CW-04D	10/18/2016	ND (50)	ND (2.5)	3.0	17	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (25)	1.4	ND (0.20)	17	ND (1.0)	2.9	ND (2.5)	ND (12)	3.3	ND (10)	1.2	130	ND (0.020)	ND (0.020)	12	8.9	1500
OW-01S	10/18/2016	--	--	--	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--	--	--	--	--	850
OW-01M	10/18/2016	--	--	--	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--	--	1400
OW-01D	10/18/2016	--	--	--	--	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	--	--	--	--	--	1300
OW-01D	10/18/2016 (FD)	--	--	--	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--	--	--	--	--	1300
OW-02S	10/19/2016	--	--	--	--	--	--	--	--	--	--	--	28	--	--	--	--	--	--	--	--	--	--	--	--	450
OW-02M	10/20/2016	ND (50)	ND (0.50)	1.9	37	ND (2.5)	ND (0.50)	ND (0.50)	ND (1.0)	ND (1.0)	ND (0.50)	ND (0.20)	23	ND (1.0)	3.5	ND (0.50)	ND (0.50)	2.7	ND (10)	1.1	140	0.020	ND (0.020)	15	26	1400
OW-02M	10/20/2016 (FD)	ND (50)	ND (2.5)	2.2	42	ND (2.5)	ND (2.5)	ND (0.50)	ND (1.0)	ND (1.0)	ND (0.50)	ND (0.20)	22	ND (5.0)	3.4	ND (12)	ND (0.50)	2.7	ND (50)	1.0	140	0.027	ND (0.020)	14	25	1400
OW-02D	10/20/2016	ND (50)	ND (2.5)	1.8	17	ND (12)	ND (0.50)	ND (0.50)	ND (1.0)	ND (1.0)	ND (0.50)	ND (0.20)	21	ND (5.0)	3.3	ND (0.50)	ND (0.50)	ND (1.0)	ND (50)	1.0	150	ND (0.020)	ND (0.020)	14	28	1400
OW-05S	10/19/2016	--	--	--	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--	550
OW-05M	10/19/2016	--	--	--	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--	--	1300
OW-05D	10/19/2016	--	--	--	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--	--	1300

Notes:

-- = data not collected or available

µg/L = micrograms per liter

FD = field duplicate

J = concentration estimated by laboratory or data validation

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

EPA = United States Environmental Protection Agency

Table 5  
**Other Inorganics Results for Groundwater Samples, 2016**  
PG&E Topock Compliance Monitoring Program

		Method:	EPA 120.1	Field	SM2540C	SM2130B	EPA 300.0	EPA 300.0	EPA 300.0	SM4500-NO3F	SM2320B	SM4500-NH3C
Location ID	Sample Date		Specific Conductance ( $\mu\text{mhos}/\text{cm}$ )	pH (pH units)	Total Dissolved Solids (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Alkalinity, total as $\text{CaCO}_3$ (mg/L)	Ammonia as Nitrogen (mg/L)
CW-01M	10/19/2016		7,100	7.7	4,200	0.35	2,100	2.0	480	2.6	77	--
CW-01D	10/19/2016		7,100	7.9	4,100	0.29	2,100	2.2	480	2.8	65	--
CW-02M	10/18/2016		7,800	8.2	4,200	21	2,200	2.8	530	2.6	57	--
CW-02D	10/19/2016		7,700	8.2	4,200	0.30	2,100	1.8	490	2.8	62	--
CW-02D	10/19/2016 (FD)		7,200	--	4,400	0.32	2,100	1.8	490	2.8	62	--
CW-03M	10/18/2016		8,900	8.2	4,700	12	2,600	2.8	530	2.1	53	--
CW-03D	10/18/2016		7,800	8.5	4,200	0.57	2,300	2.7	520	2.9	59	--
CW-04M	10/18/2016		7,300	8.1	4,100	1.8	2,200	1.8	520	2.9	56	--
CW-04D	10/18/2016		7,400	8.3	4,200	0.49	2,200	3.0	520	2.9	62	--
OW-01S	10/18/2016		6,400	7.7	4,000	0.94	2,000	1.4	430	2.8	--	--
OW-01M	10/18/2016		7,300	8.1	4,100	0.54	2,200	2.2	510	2.7	--	--
OW-01D	10/18/2016		7,500	8.1	3,900	4.5	2,100	2.1	500	2.4	--	--
OW-01D	10/18/2016 (FD)		7,500	--	4,100	5.3	2,100	2.1	500	2.5	--	--
OW-02S	10/19/2016		2,600	7.7	1,500	1.9	750	3.6	110	3.1	--	--
OW-02M	10/20/2016		7,100	7.7	4,000	0.24	2,100	2.3	470	2.6	73	--
OW-02M	10/20/2016 (FD)		7,100	--	4,100	0.27	2,100	2.3	460	2.5	73	--
OW-02D	10/20/2016		7,000	7.6	4,100	0.27	2,100	2.1	480	2.0	73	--
OW-05S	10/19/2016		4,600	7.9	3,500	0.84	1,400	1.5	270	2.9	--	--
OW-05M	10/19/2016		6,900	8.2	4,100	0.38	2,100	2.3	460	2.4	--	--
OW-05D	10/19/2016		6,800	7.7	4,100	0.34	2,000	2.3	460	2.5	--	--

Notes:

-- = data not collected or available

$\mu\text{mhos}/\text{cm}$  = micro-mhos per centimeter

$\text{CaCO}_3$  = calcium carbonate

EPA = United States Environmental Protection Agency

FD = field duplicate

mg/L = milligrams per liter

NTU = Nephelometric Turbidity Unit

SM = Standard Method

Table 6

**Field Parameters and Manual Water Level Measurements for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample Date	Specific Conductance ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{C}$ )	pH (pH units)	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Salinity (%)	Depth to Water (feet btoc)
CW-01M	10/19/2016	7,910	28.9	7.7	140	6.07	18	0.51	109.25
CW-01D	10/19/2016	7,470	29.1	7.9	150	5.93	2	0.48	109.30
CW-02M	10/18/2016	8,370	29.9	8.2	130	5.99	18	0.54	94.10
CW-02D	10/19/2016	8,180	30.0	8.2	140	5.84	1	0.53	92.55
CW-03M	10/18/2016	9,460	30.1	8.2	200	3.88	37	0.61	77.44
CW-03D	10/18/2016	8,430	30.1	8.5	230	5.62	9	0.55	76.99
CW-04M	10/18/2016	8,030	29.4	8.1	210	6.56	18	0.52	61.55
CW-04D	10/18/2016	8,090	29.9	8.3	220	5.90	9	0.52	61.54
OW-01S	10/18/2016	8,120	31.0	7.7	170	5.42	12	0.53	93.53
OW-01M	10/18/2016	8,230	29.2	8.1	200	6.16	9	0.53	93.30
OW-01D	10/18/2016	8,170	27.8	8.1	200	5.97	14	0.53	94.30
OW-02S	10/19/2016	2,920	31.9	7.7	170	5.66	2	0.19	92.40
OW-02M	10/20/2016	7,930	28.5	7.7	160	6.91	2	0.51	91.30
OW-02D	10/20/2016	7,980	28.5	7.6	200	7.36	1	0.52	91.22
OW-05S	10/19/2016	5,820	29.9	7.9	160	4.77	2	0.38	95.10
OW-05M	10/19/2016	7,890	29.7	8.2	160	5.96	2	0.51	94.78
OW-05D	10/19/2016	7,690	29.8	7.7	150	5.64	2	0.50	95.10

Notes:

% = percent

°C = degrees Celsius

 $\mu\text{S}/\text{cm}$  = micro-Siemens per centimeter

btoc = below top of casing

mg/L = milligrams per liter

mV = millivolt

NTU = Nephelometric Turbidity Unit

ORP = oxidation reduction potential

Salinity is calculated using the specific conductance field measurement.

Table 7  
**Treated Water Quality Compared to OW and CW Pre-injection Water Quality**  
*PG&E Topock Compliance Monitoring Program*

Location ID	Sample Date	Hexavalent Chromium ( $\mu\text{g/L}$ )	Chromium ( $\mu\text{g/L}$ )	Fluoride (mg/L)	Dissolved Molybdenum ( $\mu\text{g/L}$ )	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	8/29/2005	ND (1.0)	ND (2.1)	1.95	8.3	3.70	450	3,620
Treated Water	4/7/2010	0.29	ND (1.0)	1.82	18.6	2.87	512	4,270
Treated Water	10/6/2015	0.24	ND (1.0)	2.10	21.0	2.60	480	4,200
Treated Water	10/4/2016	ND (0.2)	ND (1.0)	2.1	22	2.9	460	4,000
OW-01S	7/28/2005	18.7	18.8 J	2.45	15.7	3.20	114	1,320
OW-01S	7/28/2005 (FD)	19.4	23.5 J	2.44	17.2	3.15	114	1,260
OW-01M	7/27/2005	16.3	18.9	2.31	27	1.01	311	3,450 J
OW-01D	7/27/2005	ND (1.0)	ND (1.3)	1.14	46.1	0.321	441	6,170 J
OW-02S	7/28/2005	15.3	14.8	3.79	35.6	3.81	126	1,090
OW-02M	7/28/2005	5.4	5.7	2.19	32.4	0.735	342	4,380
OW-02D	7/28/2005	ND (1.0)	ND (1.2)	0.966	51.2	ND (0.1)	616	9,550
OW-05S	7/28/2005	23.4	25.6	2.30	17.1	3.55	105	1,060
OW-05M	7/28/2005	8.6 J	8.8	2.74	35.4	0.621	417	5,550
OW-05D	7/28/2005	ND (1.0)	ND (1.2)	1.11	57	0.151	480	8,970
CW-01M	9/15/2005	18.1	17.8	2.34	21.6	1.11	318	2,990
CW-01D	9/15/2005	ND (1.0)	1.6	0.951	32.1	0.972	379	6,230
CW-02M	9/15/2005	15.6	15.5	2.30	23.1	0.908	342	3,500
CW-02M	9/15/2005 (FD)	15.8	14.7	2.30	21.1	0.96	341	3,440
CW-02D	9/15/2005	ND (1.0)	1.6	0.982	41.6	0.28	601	8,770
CW-03M	9/16/2005	8.8	8.1	2.57	24.2	0.642	464	4,740
CW-03D	9/16/2005	ND (1.0)	ND (1.0)	1.40	29.2	0.304	672	9,550
CW-04M	9/13/2005	19.2	19	1.50	12.3	1.18	240	3,310
CW-04D	9/13/2005	ND (1.0)	ND (1.0)	1.01	26	0.188	534	7,470

Notes:

$\mu\text{g/L}$  = micrograms per liter

CW = compliance well

FD = field duplicate

J = concentration estimated by laboratory or data validation

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

OW = observation well

Table 8

**Treated Water Quality Compared to 2016 Annual Monitoring Event Water Quality**

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	10/7/2014	ND (0.2)	ND (1.0)	1.48	20.8	2.69	497	4,440
Treated Water	10/6/2015	0.24	ND (1.0)	2.1	21.0	2.60	480	4,200
Treated Water	10/4/2016	ND (0.2)	ND (1.0)	2.1	22	2.9	460	4,000
CW-01M	10/19/2016	0.86	1.2	2.0	17	2.6	480	4,200
CW-01D	10/19/2016	0.45	ND (1.0)	2.2	20	2.8	480	4,100
CW-02M	10/18/2016	1.8	1.6	2.8	18	2.6	530	4,200
CW-02D	10/19/2016	0.33	ND (1.0)	1.8	16	2.8	490	4,200
CW-02D	10/19/2016 (FD)	0.29	ND (1.0)	1.8	15	2.8	490	4,400
CW-03M	10/18/2016	5.9	5.8	2.8	28	2.1	530	4,700
CW-03D	10/18/2016	0.37	ND (1.0)	2.7	17	2.9	520	4,200
CW-04M	10/18/2016	2.2	2.1	1.8	9.0	2.9	520	4,100
CW-04D	10/18/2016	0.57	ND (1.0)	3.0	17	2.9	520	4,200
OW-01S	10/18/2016	5.0	5.5	1.4	5.8	2.8	430	4,000
OW-01M	10/18/2016	0.52	ND (1.0)	2.2	24	2.7	510	4,100
OW-01D	10/18/2016	0.21	ND (1.0)	2.1	23	2.4	500	3,900
OW-01D	10/18/2016 (FD)	ND (0.20)	ND (1.0)	2.1	22	2.5	500	4,100
OW-02S	10/19/2016	17	19	3.6	28	3.1	110	1,500
OW-02M	10/20/2016	0.29	ND (1.0)	2.3	23	2.6	470	4,000
OW-02M	10/20/2016 (FD)	0.30	ND (1.0)	2.3	22	2.5	460	4,100
OW-02D	10/20/2016	0.53	ND (1.0)	2.1	21	2.0	480	4,100
OW-05S	10/19/2016	13	14	1.5	12	2.9	270	3,500
OW-05M	10/19/2016	0.50	ND (1.0)	2.3	24	2.4	460	4,100
OW-05D	10/19/2016	0.35	ND (1.0)	2.3	24	2.5	460	4,100

Notes:

µg/L = micrograms per liter

FD = field duplicate

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

Table 9  
**Injection Rates and Volumes**  
*PG&E Topock Compliance Monitoring Program*

Month and Year	Average Injection Rate (gpm)	Monthly Total (gallons)	Cumulative Total (gallons)	Primary Injection Well in Service
August-05	58.8	2,626,360	2,626,360	IW-02
September-05	67.2	2,904,094	5,530,454	IW-02
October-05	80.6	3,597,275	9,127,729	IW-02
November-05	74.5	3,216,979	12,344,708	IW-02
December-05	103.5	4,622,252	16,966,960	IW-02
January-06	113.5	5,067,560	22,034,520	IW-02
February-06	121.4	4,896,522	26,931,042	IW-02
March-06	121.1	5,405,223	32,336,265	IW-02
April-06	116.7	5,039,655	37,375,920	IW-02
May-06	118.9	5,305,831	42,681,751	IW-02
June-06	116.9	5,050,593	47,732,344	IW-02
July-06	119.2	5,322,857	53,055,201	IW-02
August-06	121.6	5,429,628	58,484,829	IW-03
September-06	121	5,229,047	63,713,876	IW-03
October-06	122.6	5,473,384	69,187,260	IW-03
November-06	122.1	5,275,516	74,462,776	IW-03
December-06	124.1	5,542,012	80,004,788	IW-03
January-07	123.5	5,510,915	85,515,703	IW-03
February-07	126	5,079,402	90,595,105	IW-03
March-07	123.8	5,525,669	96,120,774	IW-02
April-07	96.5	4,169,396	100,290,170	IW-03
May-07	126.8	5,658,656	105,948,826	IW-03
June-07	127.3	5,499,332	111,448,158	IW-03
July-07	122.1	5,448,764	116,896,922	IW-02
August-07	125.8	5,614,418	122,511,340	IW-03
September-07	128.1	5,531,784	128,043,124	IW-03
October-07	128.1	5,717,776	133,760,900	IW-03
November-07	124.1	5,361,317	139,122,217	IW-03
December-07	124.6	5,560,689	144,682,906	IW-03
January-08	123.1	5,492,958	150,175,864	IW-03
February-08	126.5	5,283,674	155,459,538	IW-03
March-08	124.3	5,550,583	161,010,121	IW-03
April-08	93.5	4,040,973	165,051,094	IW-03

Table 9  
**Injection Rates and Volumes**  
*PG&E Topock Compliance Monitoring Program*

Month and Year	Average Injection Rate (gpm)	Monthly Total (gallons)	Cumulative Total (gallons)	Primary Injection Well in Service
May-08	124.2	5,542,847	170,593,941	IW-03
June-08	128.6	5,553,857	176,147,798	IW-03
July-08	127.4	5,685,501	181,833,299	IW-03
August-08	127.7	5,702,022	187,535,321	IW-02
September-08	120.2	5,193,691	192,729,012	IW-03
October-08	125.7	5,613,447	198,342,459	IW-02
November-08	128.4	5,548,109	203,890,568	IW-03
December-08	124.2	5,542,252	209,432,820	IW-03
January-09	123.6	5,517,257	214,950,079	IW-03
February-09	131.5	5,303,429	220,253,508	IW-03
March-09	125.9	5,618,103	225,871,612	IW-03
April-09	101.2	4,372,758	230,244,370	IW-03
May-09	122.8	5,482,349	235,726,719	IW-03
June-09	125.5	5,420,397	241,147,116	IW-02
July-09	83.4	3,725,059	244,872,175	IW-03
August-09	127.3	5,680,943	250,553,118	IW-03
September-09	93.7	4,046,699	254,599,817	IW-02
October-09	131.1	5,853,536	260,453,352	IW-02
November-09	130.5	5,639,433	266,092,786	IW-02
December-09	120.5	5,377,155	271,469,941	IW-03
January-10	126.3	5,637,472	277,107,412	IW-03
February-10	124.8	5,031,840	282,139,252	IW-03
March-10	126.0	5,625,524	287,764,777	IW-03
April-10	112.0	4,839,690	292,604,467	IW-03
May-10	131.8	5,882,290	298,486,757	IW-03
June-10	123.9	5,354,115	303,840,872	IW-03
July-10	120.8	5,390,898	309,231,770	IW-02
August-10	118.8	5,302,122	314,533,892	IW-03
September-10	131.2	5,667,255	320,201,147	IW-03
October-10	126.8	5,658,794	325,859,940	IW-02
November-10	130.3	5,629,913	331,489,853	IW-02
December-10	129.4	5,774,967	337,264,820	IW-03
January-11	126.5	5,647,947	342,912,767	IW-03

Table 9  
**Injection Rates and Volumes**  
*PG&E Topock Compliance Monitoring Program*

Month and Year	Average Injection Rate (gpm)	Monthly Total (gallons)	Cumulative Total (gallons)	Primary Injection Well in Service
February-11	129.2	5,208,707	348,121,474	IW-02
March-11	128.8	5,747,411	353,868,885	IW-03
April-11	113.5	4,903,434	358,772,319	IW-02
May-11	130.5	5,825,578	364,597,897	IW-02
June-11	121.2	5,236,904	369,834,802	IW-02
July-11	125.0	5,580,178	375,414,979	IW-02
August-11	114.7	5,120,270	380,535,249	IW-03
September-11	130.0	5,614,683	386,149,933	IW-03
October-11	128.8	5,748,120	391,898,052	IW-03
November-11	129.7	5,603,492	397,501,544	IW-02
December-11	129.6	5,784,322	403,285,866	IW-02
January-12	130.8	5,837,548	409,123,414	IW-03
February-12	130.1	5,432,832	414,556,246	IW-02
March-12	128.8	5,747,601	420,303,847	IW-02
April-12	115.2	4,975,734	425,279,582	IW-03
May-12	133.3	5,951,440	431,231,022	IW-03
June-12	134.2	5,795,380	437,026,402	IW-03
July-12	133.4	5,954,462	442,980,863	IW-03
August-12	114.0	5,091,104	448,071,968	IW-02
September-12	130.9	5,654,269	453,726,237	IW-02
October-12	132.1	5,896,425	459,622,662	IW-03
November-12	131.6	5,686,609	465,309,270	IW-03
December-12	130.9	5,841,981	471,151,251	IW-03
January-13	131.2	5,855,164	477,006,415	IW-03
February-13	130.9	5,279,234	482,285,649	IW-03
March-13	134.5	6,005,382	488,291,032	IW-03
April-13	117.4	5,073,222	493,364,254	IW-02
May-13	134.2	5,989,613	499,353,867	IW-02
June-13	128.0	5,528,925	504,882,792	IW-03
July-13	128.9	5,755,955	510,638,747	IW-03
August-13	114.3	5,101,661	515,740,408	IW-03
September-13	131.9	5,697,317	521,437,725	IW-03
October-13	135.1	6,031,939	527,469,664	IW-03

Table 9  
**Injection Rates and Volumes**  
*PG&E Topock Compliance Monitoring Program*

Month and Year	Average Injection Rate (gpm)	Monthly Total (gallons)	Cumulative Total (gallons)	Primary Injection Well in Service
November-13	129.6	5,597,036	533,066,700	IW-03
December-13	133.9	5,977,834	539,044,534	IW-02
January-14	133.1	5,943,725	544,988,259	IW-02
February-14	132.1	5,327,968	550,316,227	IW-02
March-14	130.6	5,828,858	556,145,086	IW-02
April-14	115.7	4,997,542	561,142,628	IW-02
May-14	133.9	5,978,013	567,120,640	IW-03
June-14	122.3	5,282,957	572,403,598	IW-03
July-14	129.1	5,765,249	578,168,847	IW-02
August-14	116.0	5,177,316	583,346,163	IW-02
September-14	131.8	5,693,165	589,039,328	IW-02
October-14	133.9	5,978,467	595,017,795	IW-02
November-14	131.0	5,659,761	600,677,556	IW-02
December-14	132.2	5,902,346	606,579,902	IW-02
January-15	129.6	5,787,130	612,367,032	IW-03
February-15	128.2	5,351,970	617,719,002	IW-03
March-15	129.4	5,778,510	623,497,512	IW-02
April-15	116.4	5,029,977	628,527,489	IW-02
May-15	118.7	5,296,731	633,824,220	IW-03
June-15	132.9	5,740,117	639,564,338	IW-03
July-15	128.7	5,746,980	645,311,317	IW-03
August-15	112.5	5,021,214	650,332,532	IW-02
September-15	133.1	5,751,891	656,084,423	IW-02
October-15	133.7	5,967,913	662,052,336	IW-02
November-15	134.0	5,790,514	667,842,850	IW-02
December-15	133.6	5,963,422	673,806,272	IW-02
January-16	134.7	6,013,515	679,819,786	IW-02
February-16	126.9	5,482,797	685,302,583	IW-02
March-16	126.3	5,638,278	690,940,861	IW-03
April-16	96.7	4,177,595	695,118,456	IW-03
May-16	133.6	5,962,540	701,080,996	IW-03
June-16	131.7	5,688,462	706,769,458	IW-03
July-16	133.7	5,967,525	712,736,983	IW-03

Table 9  
**Injection Rates and Volumes**  
*PG&E Topock Compliance Monitoring Program*

<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
August-16	114.9	5,127,532	717,864,515	IW-02
September-16	134.9	5,827,182	723,691,697	IW-02
October-16	133.3	5,948,951	729,640,648	IW-02
November-16	131.8	5,693,070	735,333,719	IW-02
December-16	137.1	6,119,549	741,453,268	IW-02

Notes:

gpm = gallons per minute

The injection flow rate is measured by flow meters mounted in the piping leading into IW-02 and IW-03. Data are logged in the Interim Measures No. 3 control system, from which this information is reported.

Table 10  
**Manual Water Level Measurements and Elevations, 2016**  
*PG&E Topock Compliance Monitoring Program*

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet btoc)	Salinity (%)	Groundwater/Water Elevation Adjusted for Salinity and Temperature (feet amsl)
CW-01M	190.0	566.07	3/1/2016	7:53	109.89	0.50	456.18
			4/29/2016	10:19	108.91	0.50	457.16
			9/26/2016	13:58	109.00	0.50	457.07
			12/6/2016	14:26	109.66	0.50	456.39
CW-01D	300.2	566.46	3/1/2016	7:56	110.04	0.49	456.40
			4/29/2016	10:19	108.73	0.49	457.71
			9/26/2016	14:01	109.28	0.49	457.16
			12/6/2016	14:24	109.45	0.49	456.92
CW-02M	208.3	549.45	3/1/2016	8:07	93.32	0.49	456.09
			4/29/2016	10:10	92.20	0.49	457.21
			9/26/2016	13:43	92.54	0.49	456.87
			12/6/2016	14:30	93.36	0.49	456.01
CW-02D	355.0	549.43	3/1/2016	8:11	92.91	0.48	456.39
			4/29/2016	10:10	92.05	0.48	457.25
			9/26/2016	13:41	92.07	0.48	457.23
			12/6/2016	14:28	92.91	0.48	456.32
CW-03M	222.0	534.10	3/1/2016	8:01	78.09	0.56	456.04
			4/29/2016	10:15	76.85	0.56	457.28
			9/26/2016	13:50	77.39	0.56	456.74
			12/6/2016	14:36	78.26	0.56	455.80
CW-03D	340.0	534.14	3/1/2016	8:04	77.48	0.49	456.52
			4/29/2016	10:15	76.36	0.49	457.64
			9/26/2016	13:52	76.76	0.49	457.24
			12/6/2016	14:33	77.57	0.49	456.37
CW-04M	169.8	518.55	3/1/2016	7:27	62.16	0.47	456.34
			4/29/2016	10:40	61.14	0.47	457.36
			9/26/2016	14:15	61.35	0.47	457.15
			12/6/2016	15:18	62.07	0.47	456.41
CW-04D	303.0	518.55	3/1/2016	7:25	29.02 <sup>(a)</sup>	0.49	489.39
			4/29/2016	10:40	60.92	0.49	457.51
			9/26/2016	14:11	61.20	0.49	457.23
			12/6/2016	15:15	61.86	0.49	456.52
OW-01S	113.5	550.21	3/1/2016	7:45	94.23	0.41	455.97
			4/29/2016	10:32	92.90	0.43	457.30
			9/26/2016	14:11	61.20	0.49	457.23
			12/6/2016	14:43	94.21	0.42	455.97
OW-01M	185.8	550.36	3/1/2016	7:50	93.84	0.48	456.52
			4/29/2016	10:32	92.87	0.48	457.49
			9/26/2016	13:42	93.05	0.48	457.31
			12/6/2016	14:40	93.98	0.48	456.33
OW-01D	277.3	550.36	3/1/2016	7:47	93.57	0.48	456.80
			4/29/2016	10:33	92.62	0.48	457.75
			9/26/2016	13:39	92.52	0.48	457.85
			12/6/2016	14:38	93.64	0.48	456.69
OW-02S	103.6	548.88	3/1/2016	7:40	92.85	0.19	456.01
			4/29/2016	10:28	91.50	0.17	457.35
			9/26/2016	14:02	90.92	0.17	457.93
			12/6/2016	14:50	92.12	0.19	456.72
OW-02M	210.3	548.52	3/1/2016	7:43	91.88	0.50	456.66
			4/29/2016	10:28	91.00	0.50	457.54
			9/26/2016	13:59	91.99	0.50	456.55
			12/6/2016	14:48	92.02	0.50	456.48

Table 10  
**Manual Water Level Measurements and Elevations, 2016**  
*PG&E Topock Compliance Monitoring Program*

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet btoc)	Salinity (%)	Groundwater/Water Elevation Adjusted for Salinity and Temperature (feet amsl)
OW-02D	340.0	549.01	3/1/2016	7:38	91.84	0.48	457.10
			4/29/2016	10:28	91.20	0.48	457.74
			9/26/2016	13:55	90.79	0.48	458.15
			12/6/2016	14:46	92.18	0.48	456.73
OW-05S	110.3	551.83	3/1/2016	7:36	95.69	0.30	456.12
			4/29/2016	10:24	94.75	0.35	457.06
			9/26/2016	14:18	94.82	0.35	456.99
			12/6/2016	14:57	95.33	0.35	456.47
OW-05M	250.3	551.81	3/1/2016	7:34	95.14	0.45	456.62
			4/29/2016	10:24	93.20	0.45	458.56
			9/26/2016	14:20	94.19	0.45	457.57
			12/6/2016	15:00	94.33	0.48	457.37
OW-05D	350.0	552.41	3/1/2016	7:32	95.66	0.48	456.72
			4/29/2016	10:25	94.20	0.45	458.12
			9/26/2016	14:22	94.74	0.45	457.58
			12/6/2016	14:55	95.32	0.48	456.89

Notes:

% = percent

amsl = above mean sea level

btoc = below top of casing

Salinity and temperature data used to adjust water level to freshwater equivalent.

<sup>(a)</sup>Anomalous value, potentially due to measurement error. Value was not used for contouring.

Table 11  
**Vertical Gradients within the OW and CW Clusters, 2016**  
*PG&E Topock Compliance Monitoring Program*

Well Pairs	Vertical Gradient <sup>(a)</sup> (foot/foot)
CW-01D to CW-01M	0.0049
CW-02D to CW-02M	0.0024
CW-03D to CW-03M	0.0057
CW-04D to CW-04M	0.0010
OW-01M to OW-01S	0.0047
OW-01D to OW-01M	0.0039
OW-02M to OW-02S	-0.0021
OW-02D to OW-02M	0.0021
OW-05M to OW-05S	0.0064
OW-05D to OW-05M	-0.0059

Notes:

<sup>(a)</sup>Positive value signifies an upward gradient.

Gradients calculated using December 6, 2016 groundwater elevation data.

CW = compliance well

OW = observation well

# FIGURES




**LEGEND**

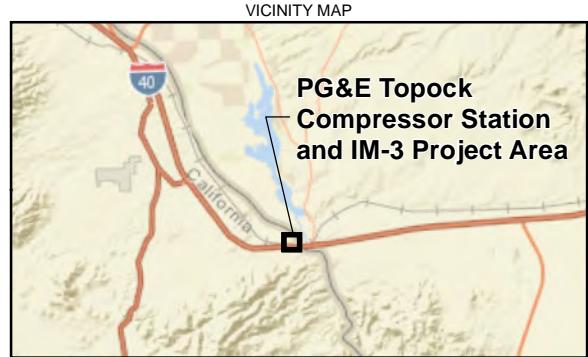
- Existing IM Extraction Well
- ▲ Existing IM Injection Well
- Influent Treatment Facility Pipeline (below ground)
- Effluent Treatment Facility Pipeline (above ground)
- Property Line



0      250      500  
Feet

**Notes:**

Location map shows Interim Measures No. 3 (IM-3) facilities as of January 2006.  
Aerial photography taken November 2011.



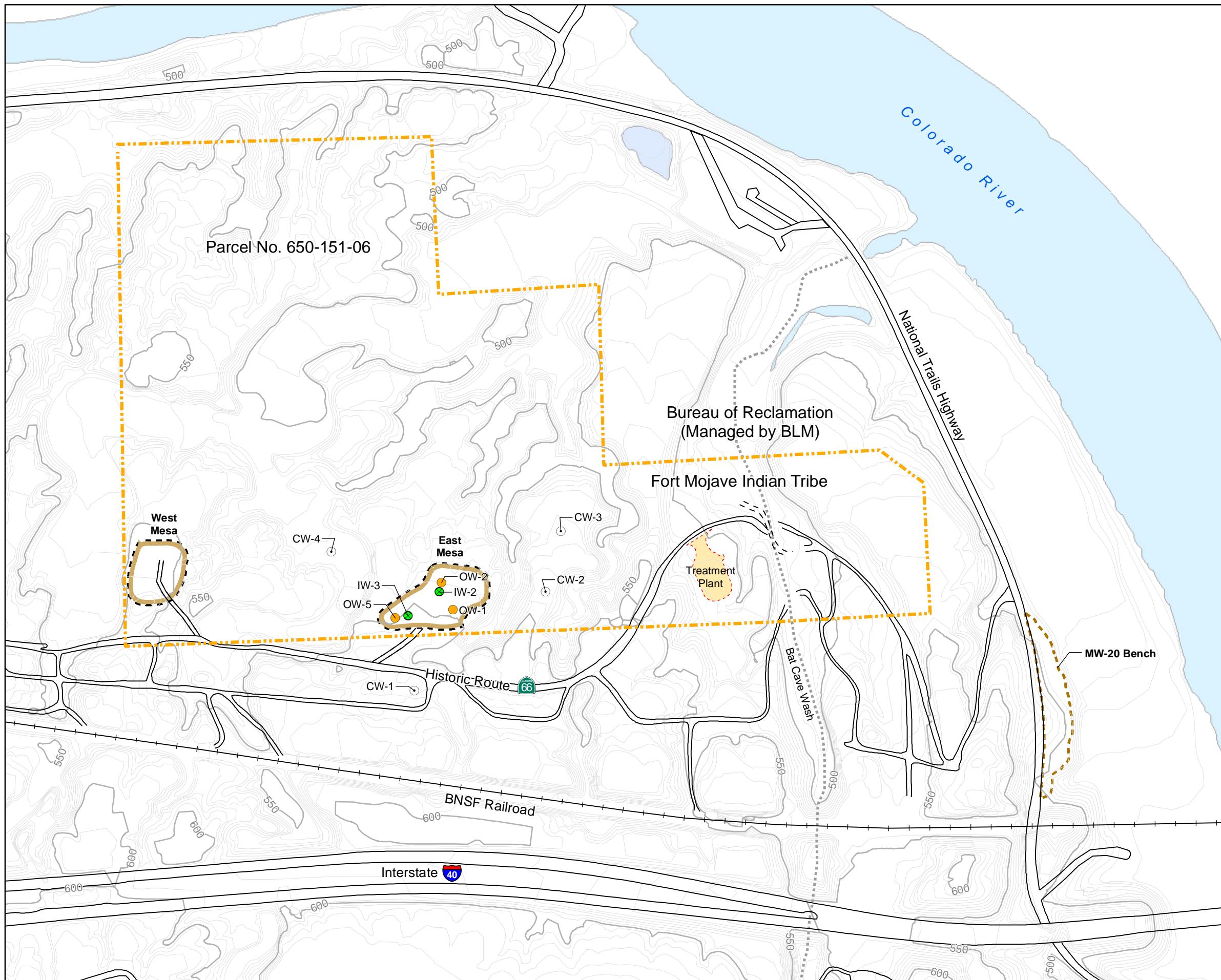
**FIGURE 1**  
**SITE LOCATION AND INTERIM MEASURES NO. 3**  
**TREATMENT SYSTEM**

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

RDD R:\GIS\TOPOCKGIS\MAPFILES\2016\CMPI\FIG1\_SITELOC.MXD 11/17/2016 6:27:47 PM

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

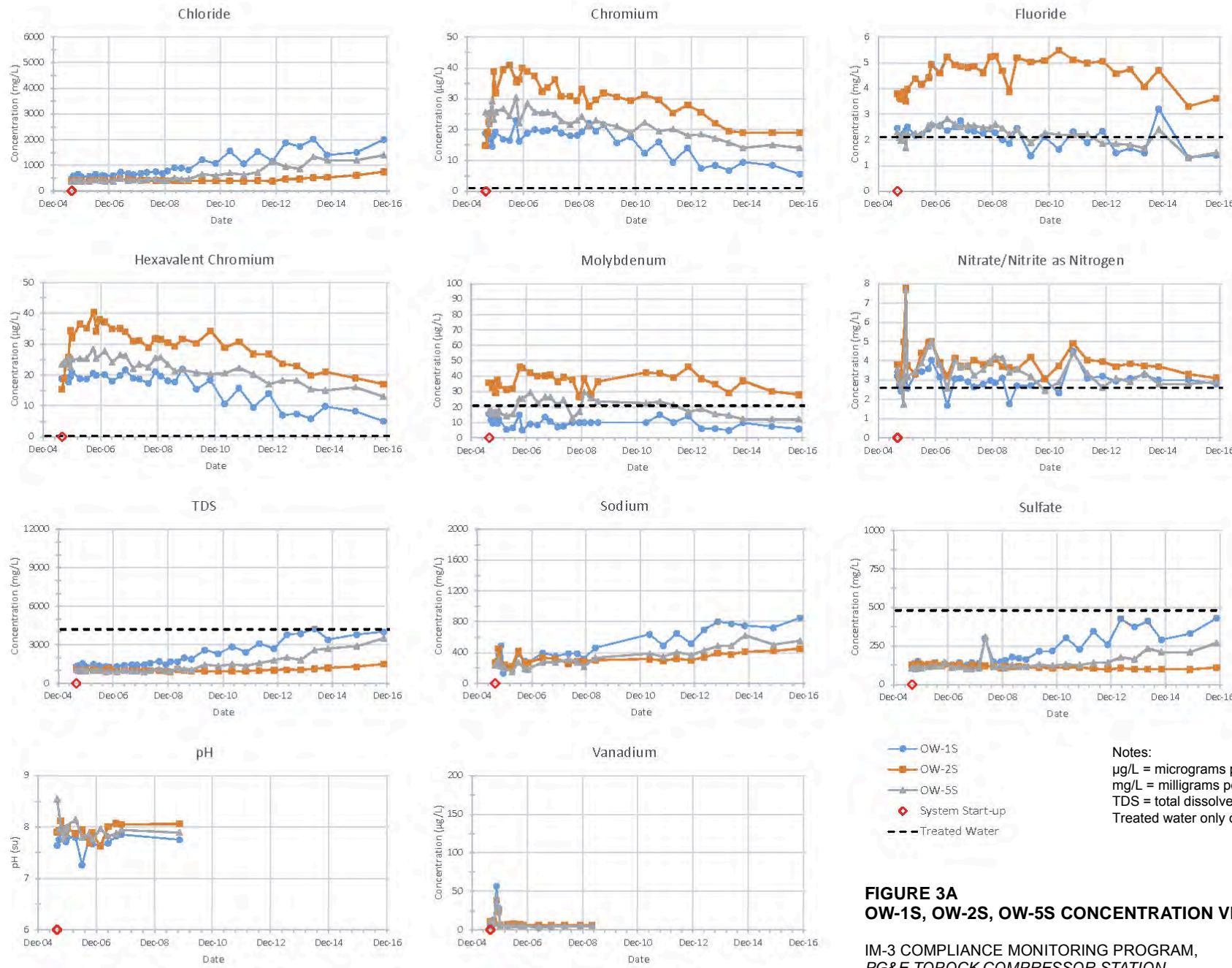
Created by:  
**CRITIGEN**



**FIGURE 2**  
**MONITORING LOCATIONS FOR CMP AND INJECTION WELL FIELD**

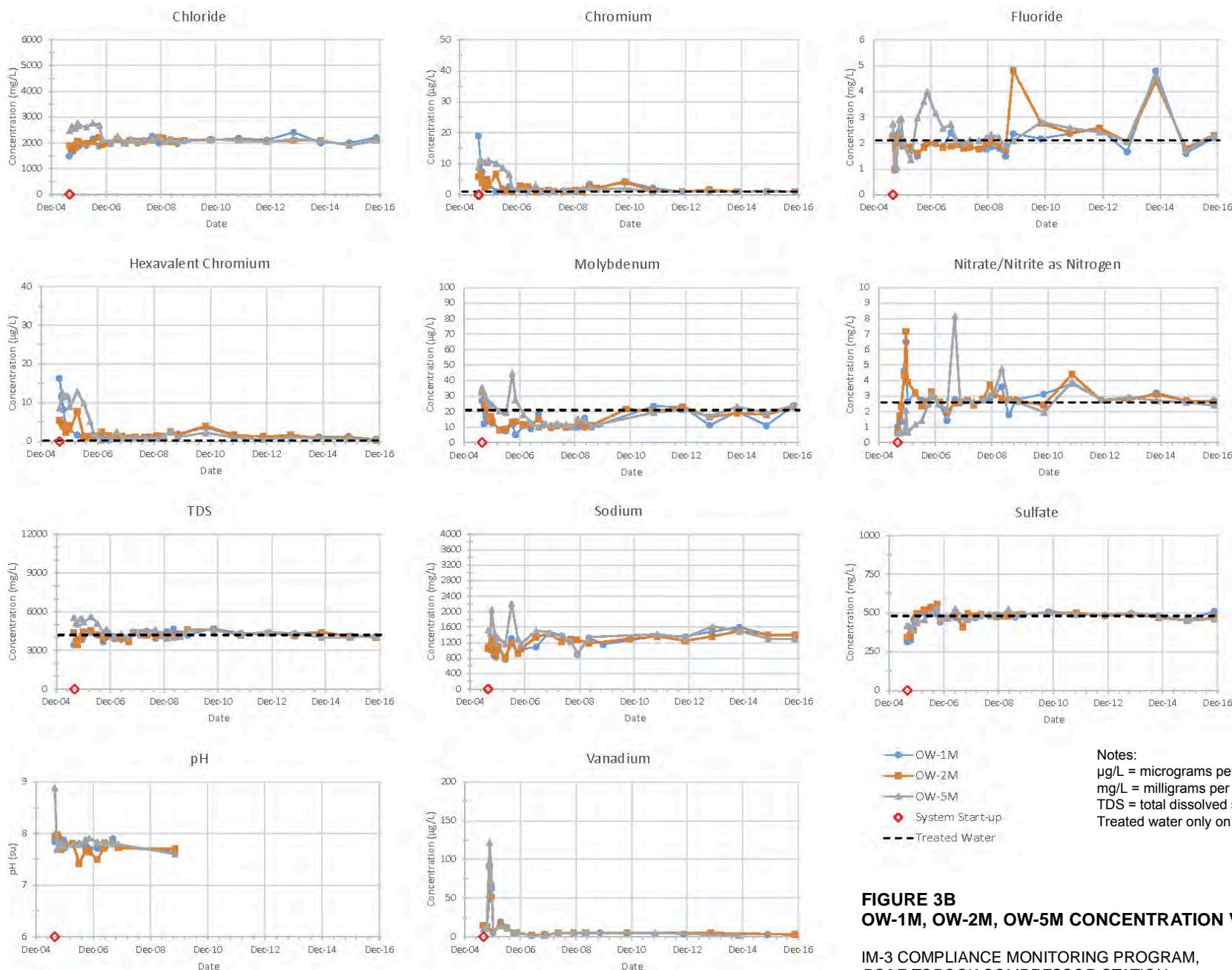
IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

Created by:  
**CRITIGEN**



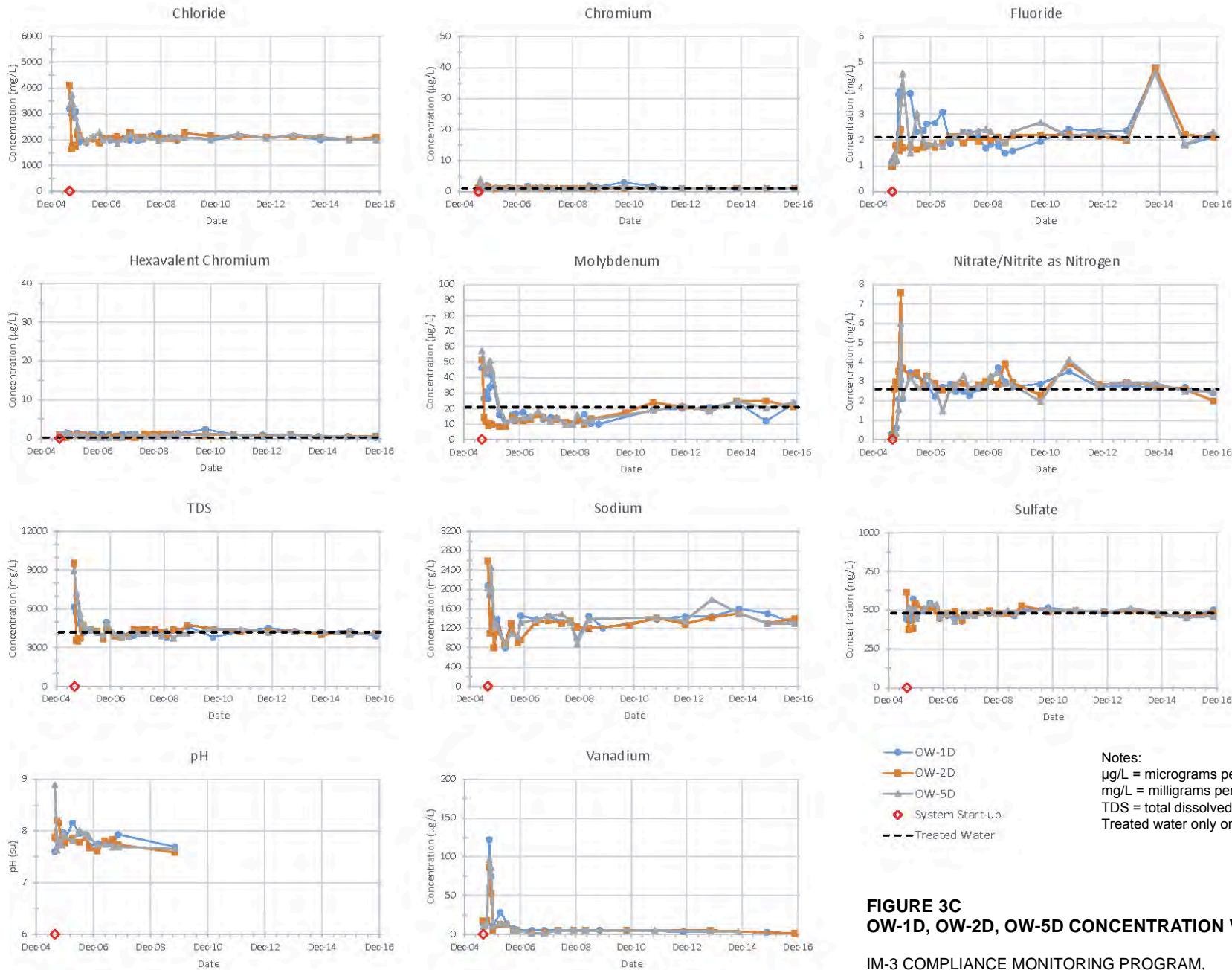
**FIGURE 3A**  
**OW-1S, OW-2S, OW-5S CONCENTRATION VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



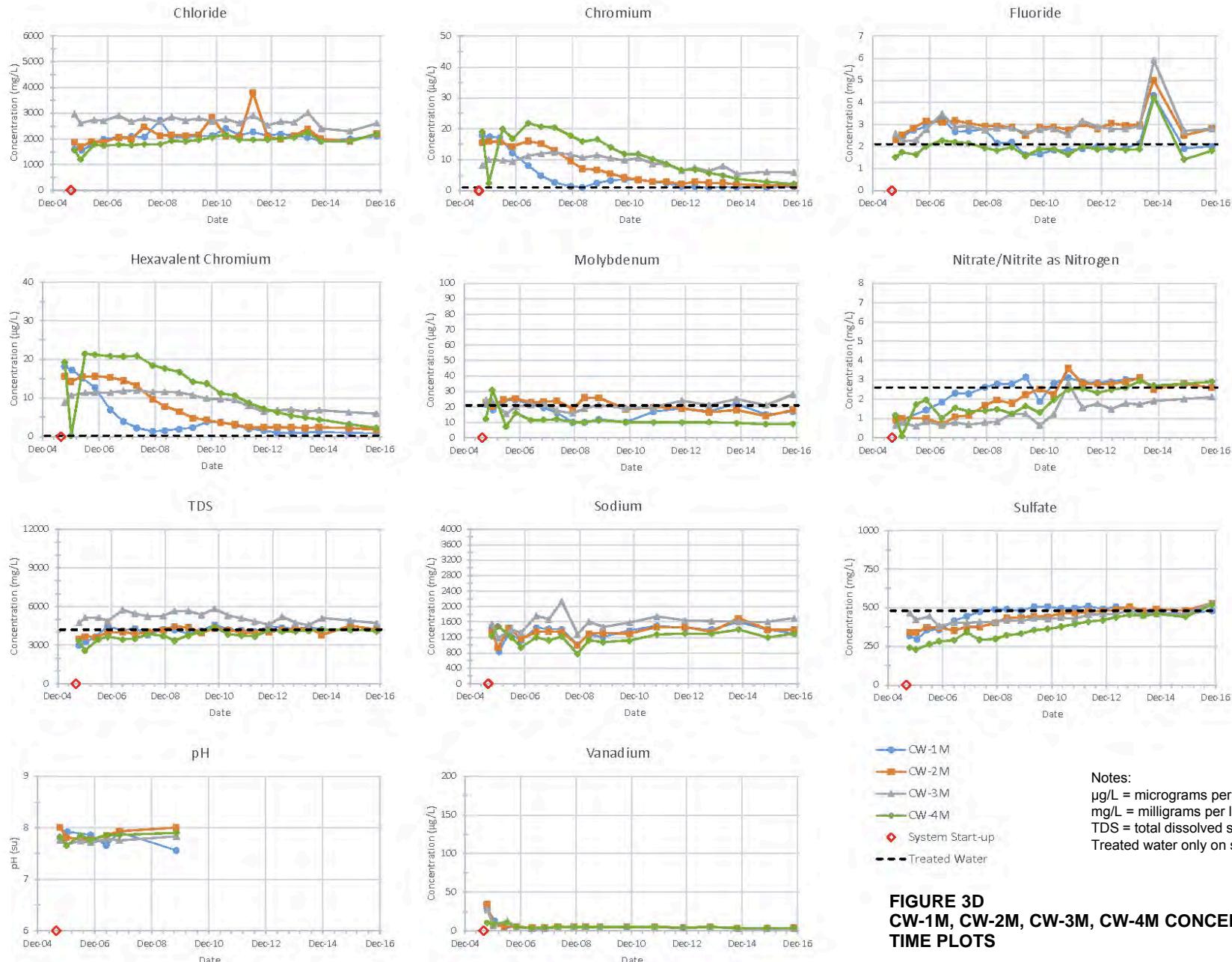
**FIGURE 3B**  
**OW-1M, OW-2M, OW-5M CONCENTRATION VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



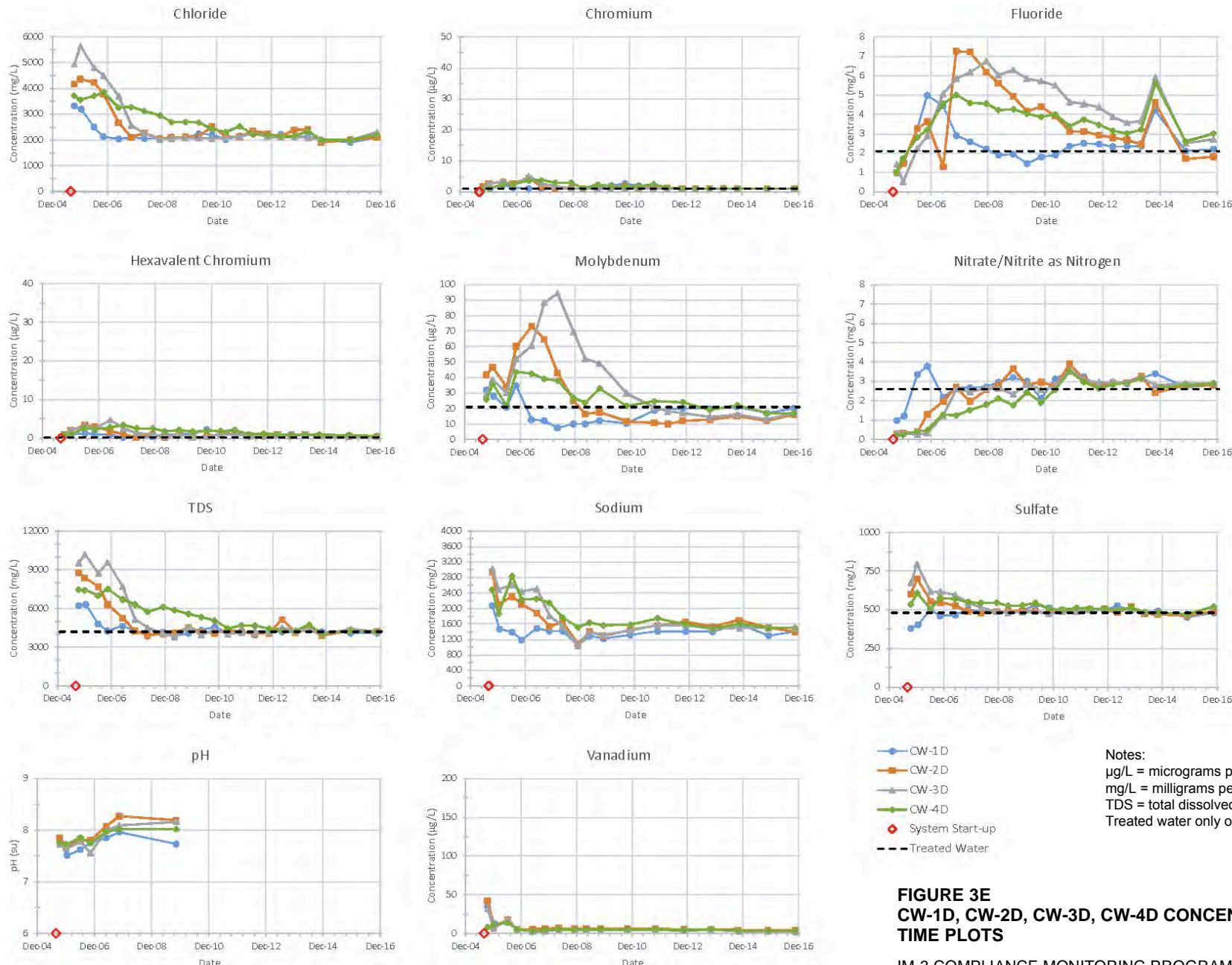
**FIGURE 3C**  
**OW-1D, OW-2D, OW-5D CONCENTRATION VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



**FIGURE 3D**  
**CW-1M, CW-2M, CW-3M, CW-4M CONCENTRATION VERSUS TIME PLOTS**

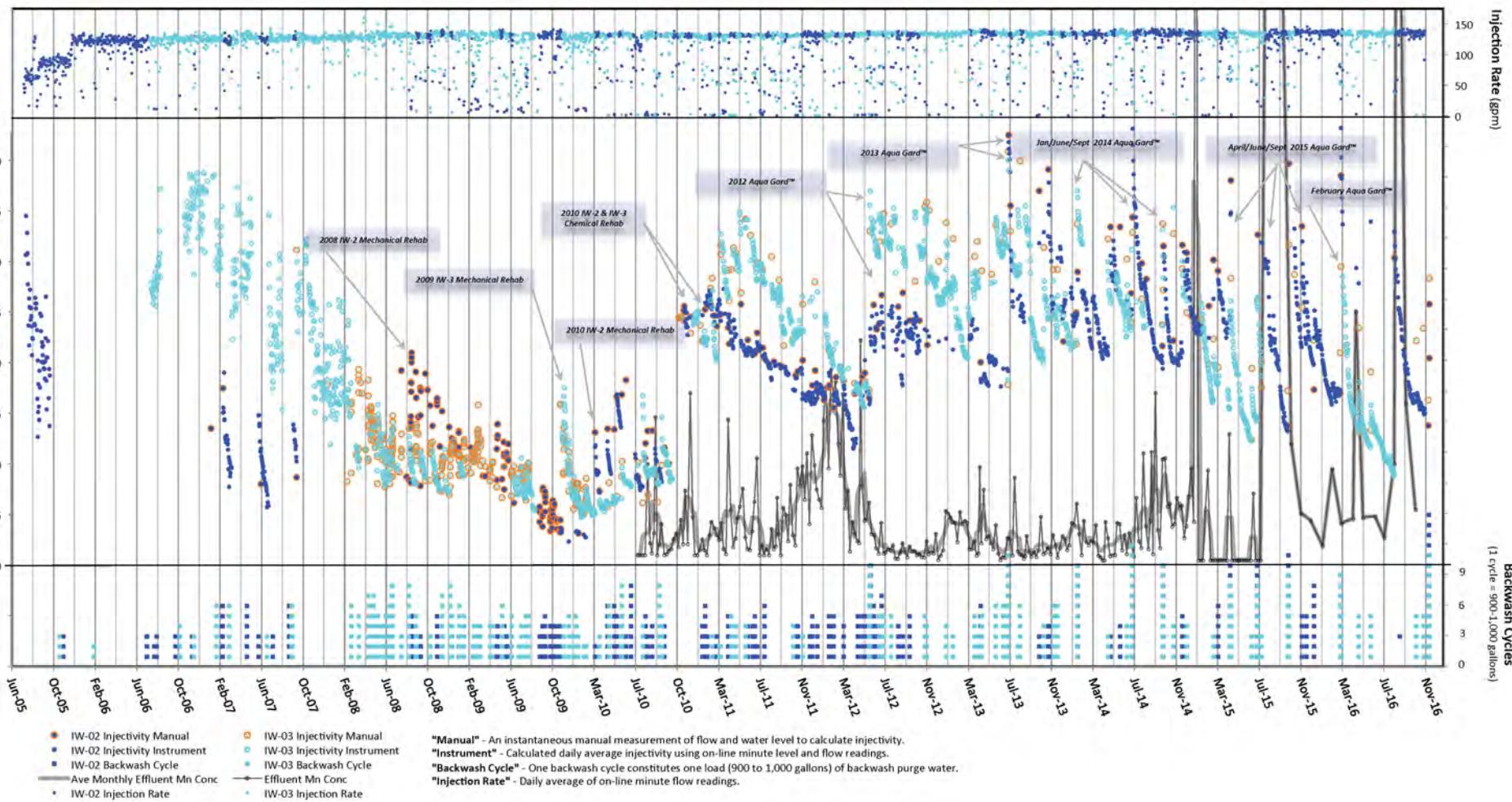
IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



**FIGURE 3E**  
**CW-1D, CW-2D, CW-3D, CW-4D CONCENTRATION VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

Ave. Monthly Effluent Mn Conc. (µg/L) Specific Injectivity (SC) (gpm/ft)



#### Acronyms/Abbreviations:

µg/L = micrograms per liter

ave. = average

conc. = concentration

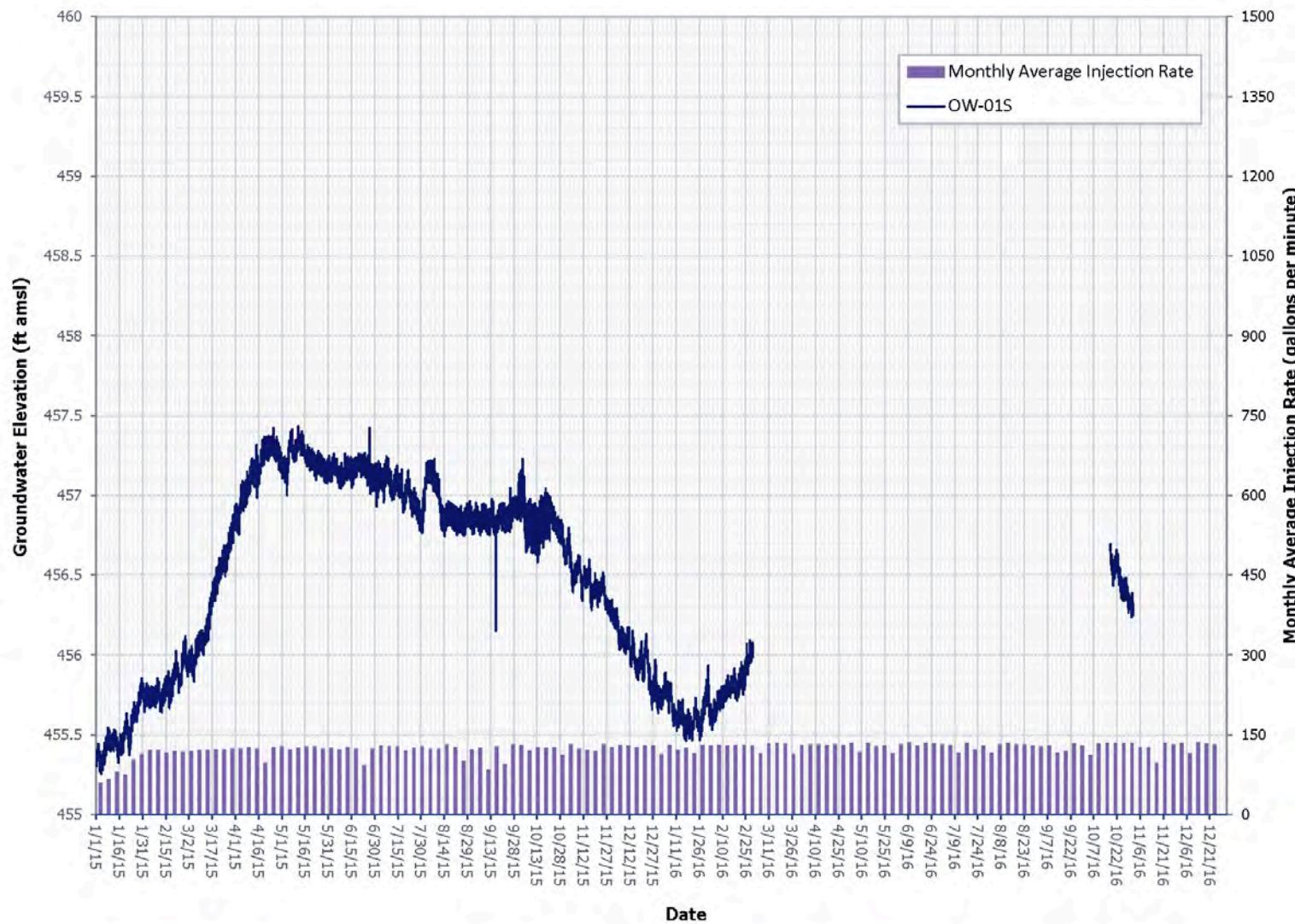
gpm = gallons per minute

gpm/ft = gallons per minute per foot

Mn = manganese

**FIGURE 4**  
**IM-3 OPERATION DATA INJECTION WELL PERFORMANCE - AUGUST 2005 TO DECEMBER 2016**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



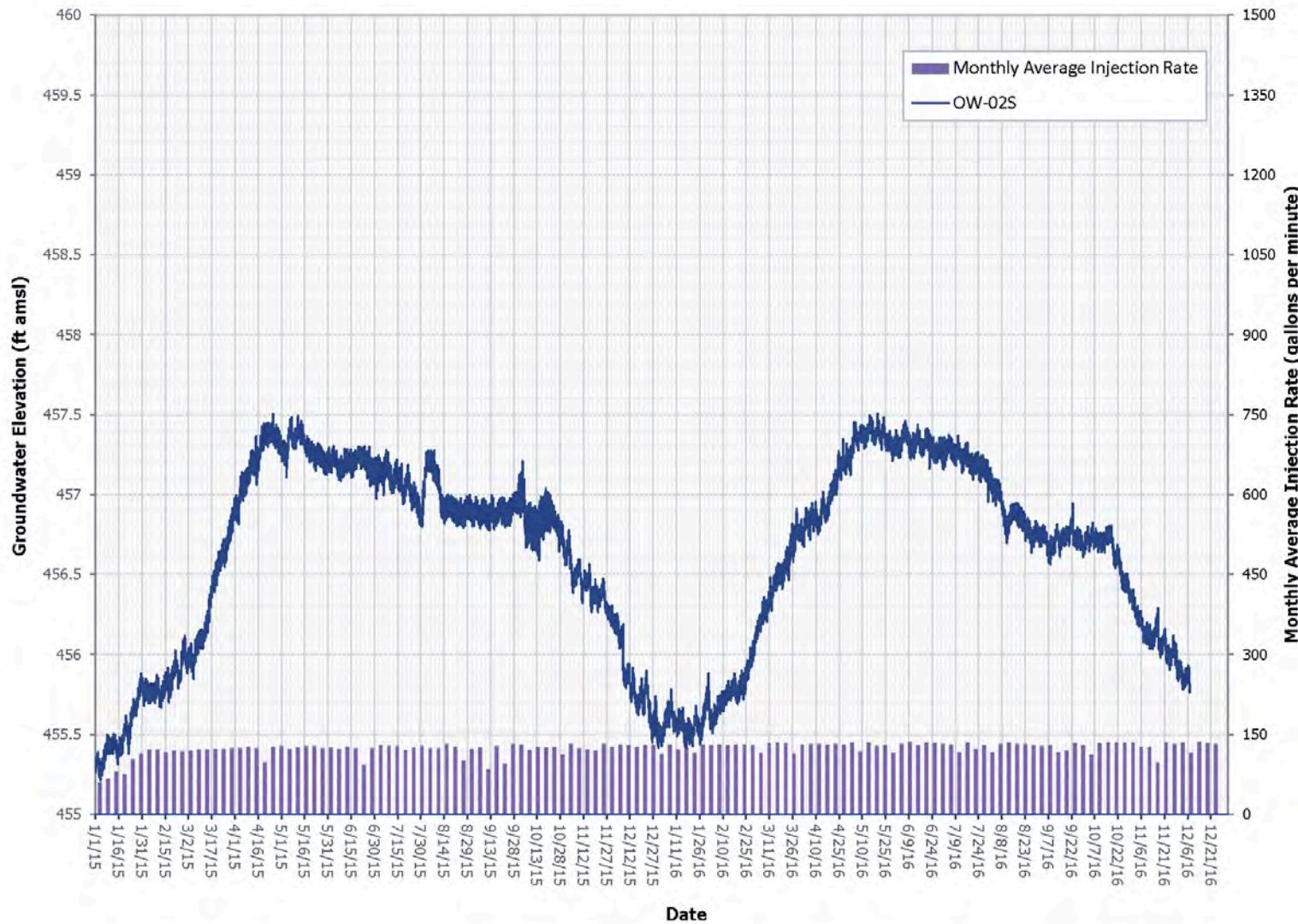
Notes:

ft amsl = feet above mean sea level

See Tables 1 and 9 for primary injection wells in service during the biennial reporting period.  
Data are unavailable between March 1 and October 16, 2016 due to transducer malfunction/  
failure.

**FIGURE 5A**  
**OW-1 HYDROGRAPHS AND IW INJECTION RATE**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

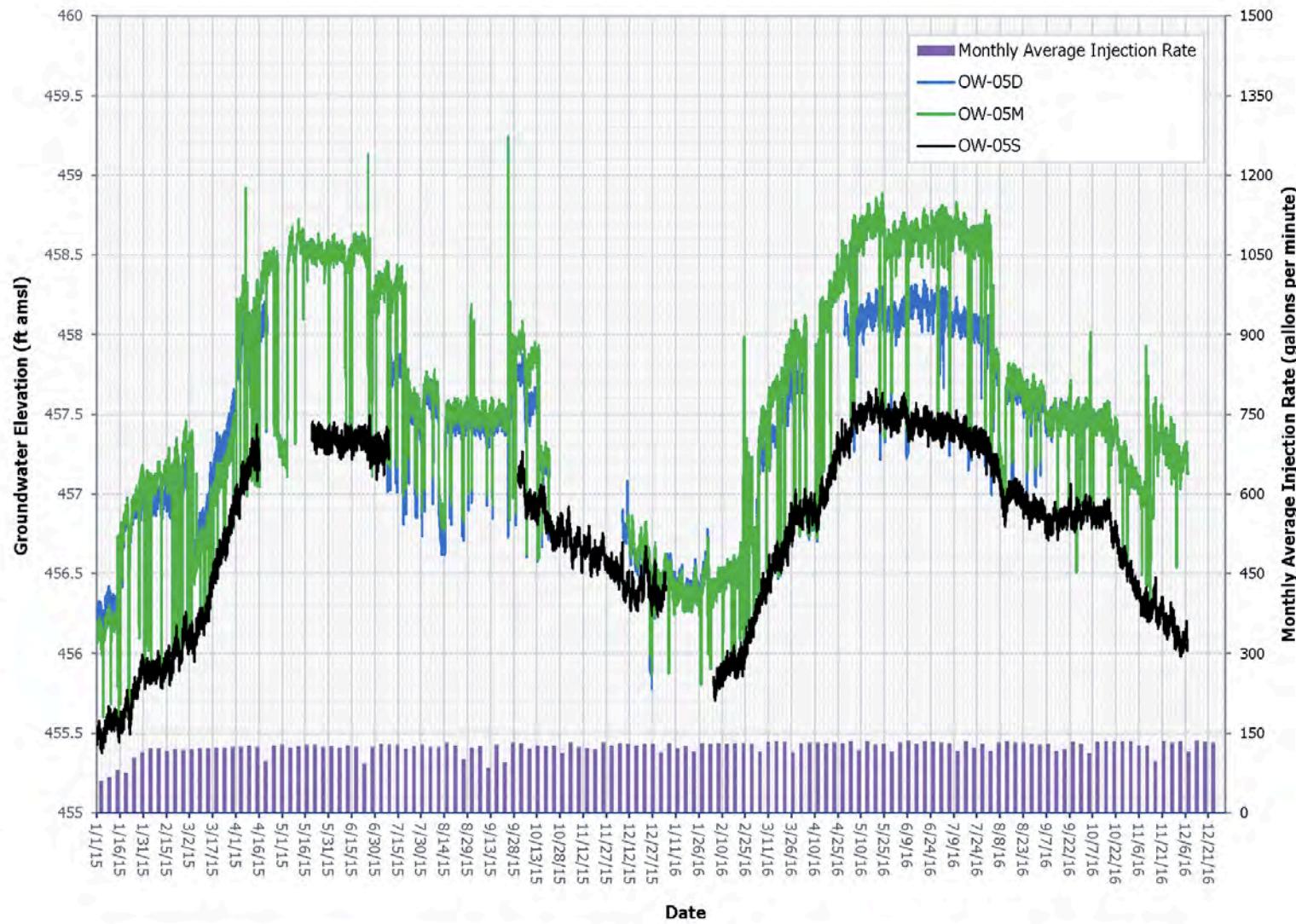

**Notes:**

ft amsl = feet above mean sea level

See Tables 1 and 9 for primary injection wells in service during the biennial reporting period.

**FIGURE 5B**  
**OW-2 HYDROGRAPHS AND IW INJECTION RATE**

IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



Notes:

ft amsl = feet above mean sea level

See Tables 1 and 9 for primary injection wells in service during the biennial reporting period.

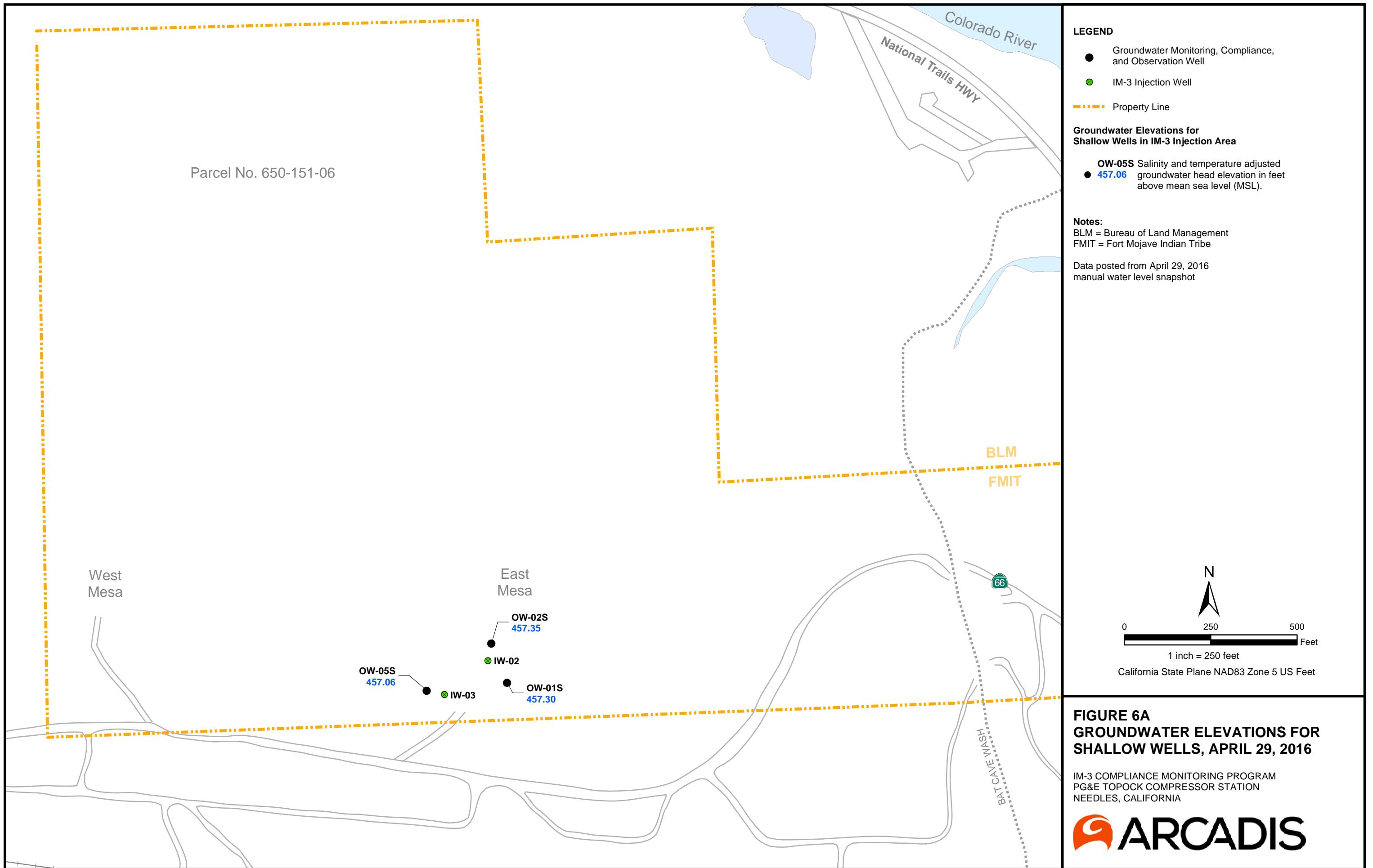
Data are unavailable/not plotted for OW-05S between April 17 and May 19, 2015; between July 10 and September 30, 2015; and between January 5 and February 3, 2016 due to transducer malfunction or failure.

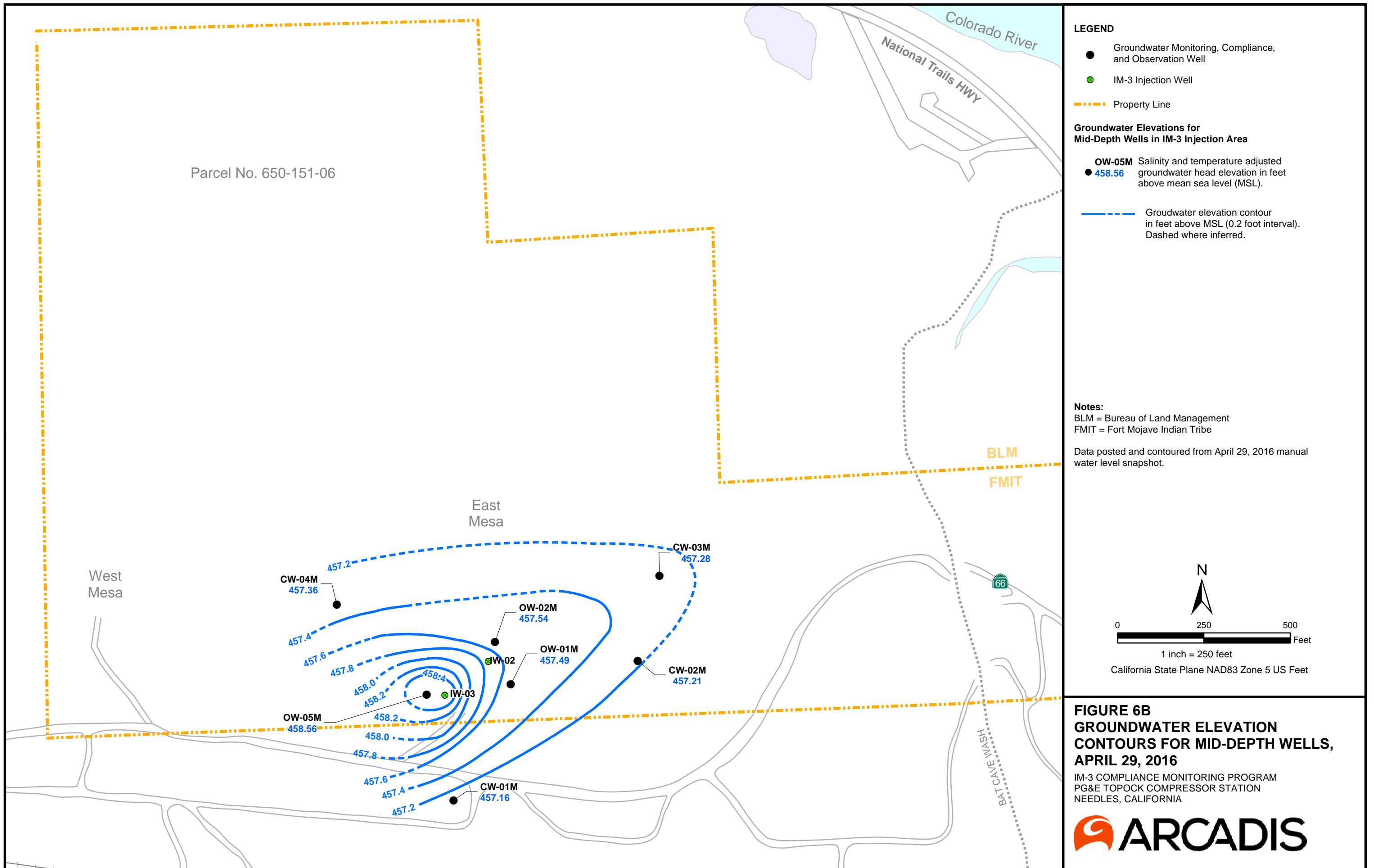
Data are unavailable for OW-05M between October 22 and December 9, 2015 due to transducer malfunction or failure.

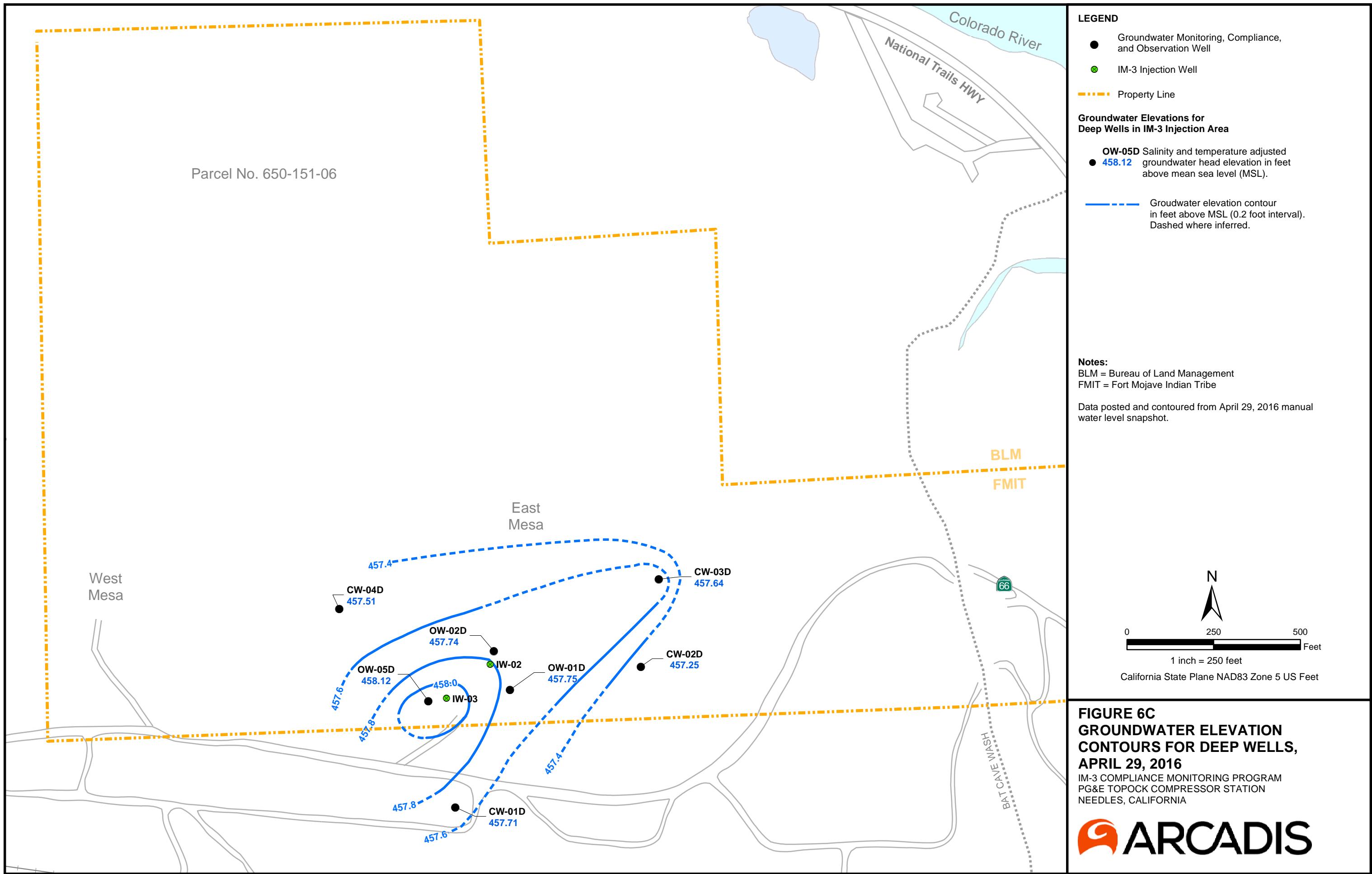
Data are unavailable for OW-05D between April 22 and July 7, 2015; between October 22 and December 6, 2015; between February 2 and March 2, 2016; between April 13 and April 28, 2016; and after October 5, 2016 due to transducer malfunction or failure.

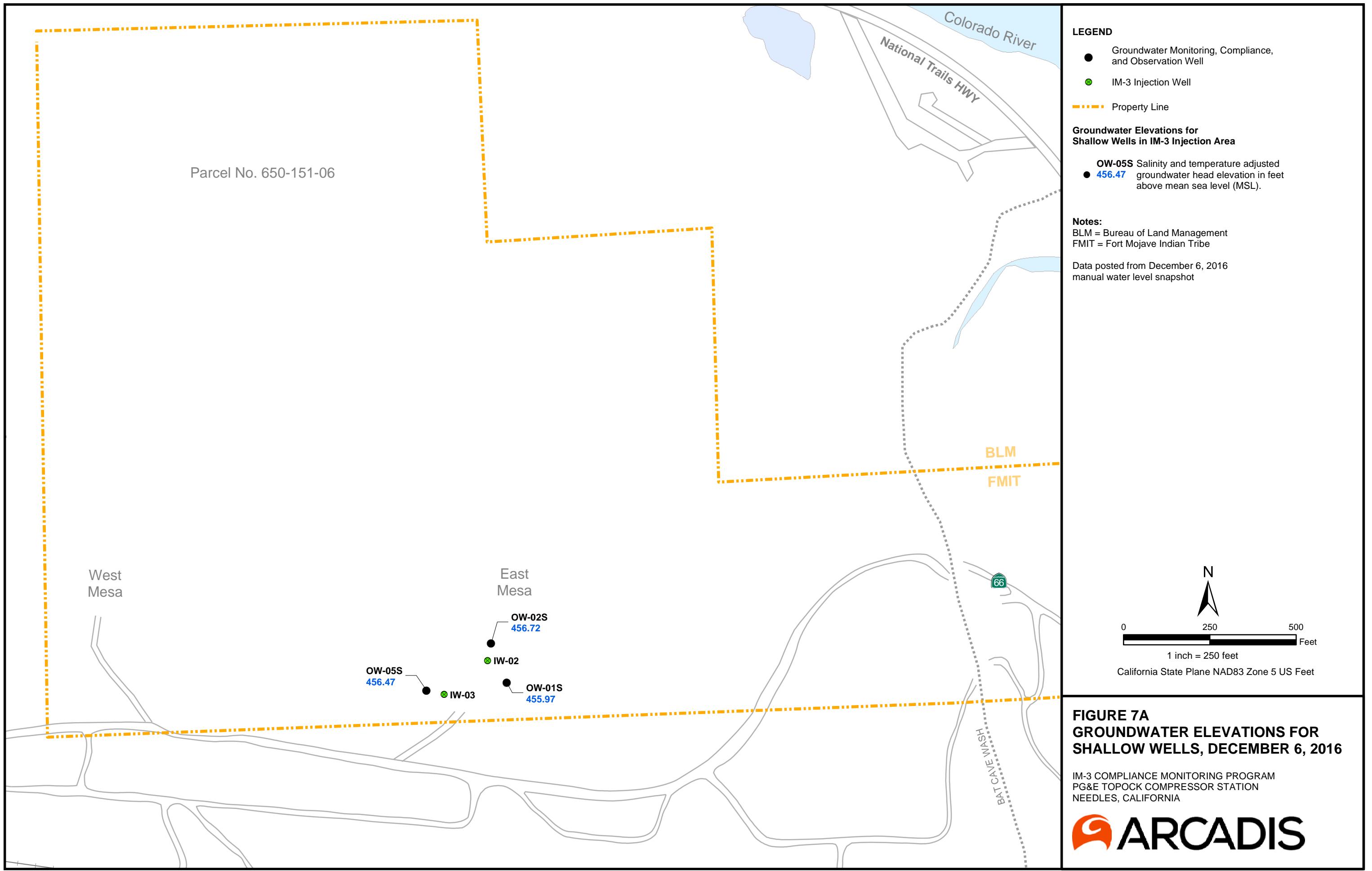
**FIGURE 5C**  
**OW-5 HYDROGRAPHS AND IW INJECTION RATE**

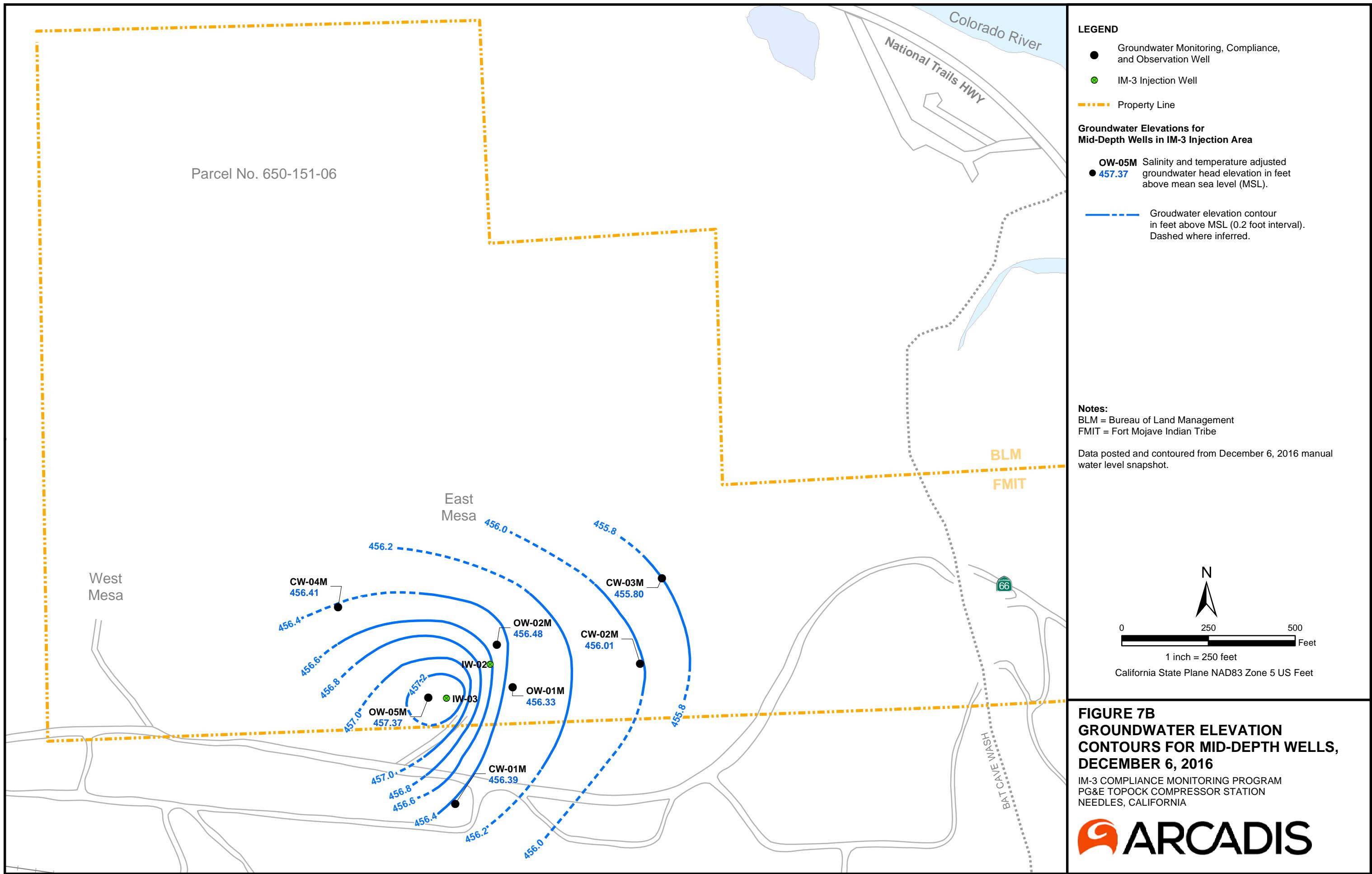
IM-3 COMPLIANCE MONITORING PROGRAM,  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

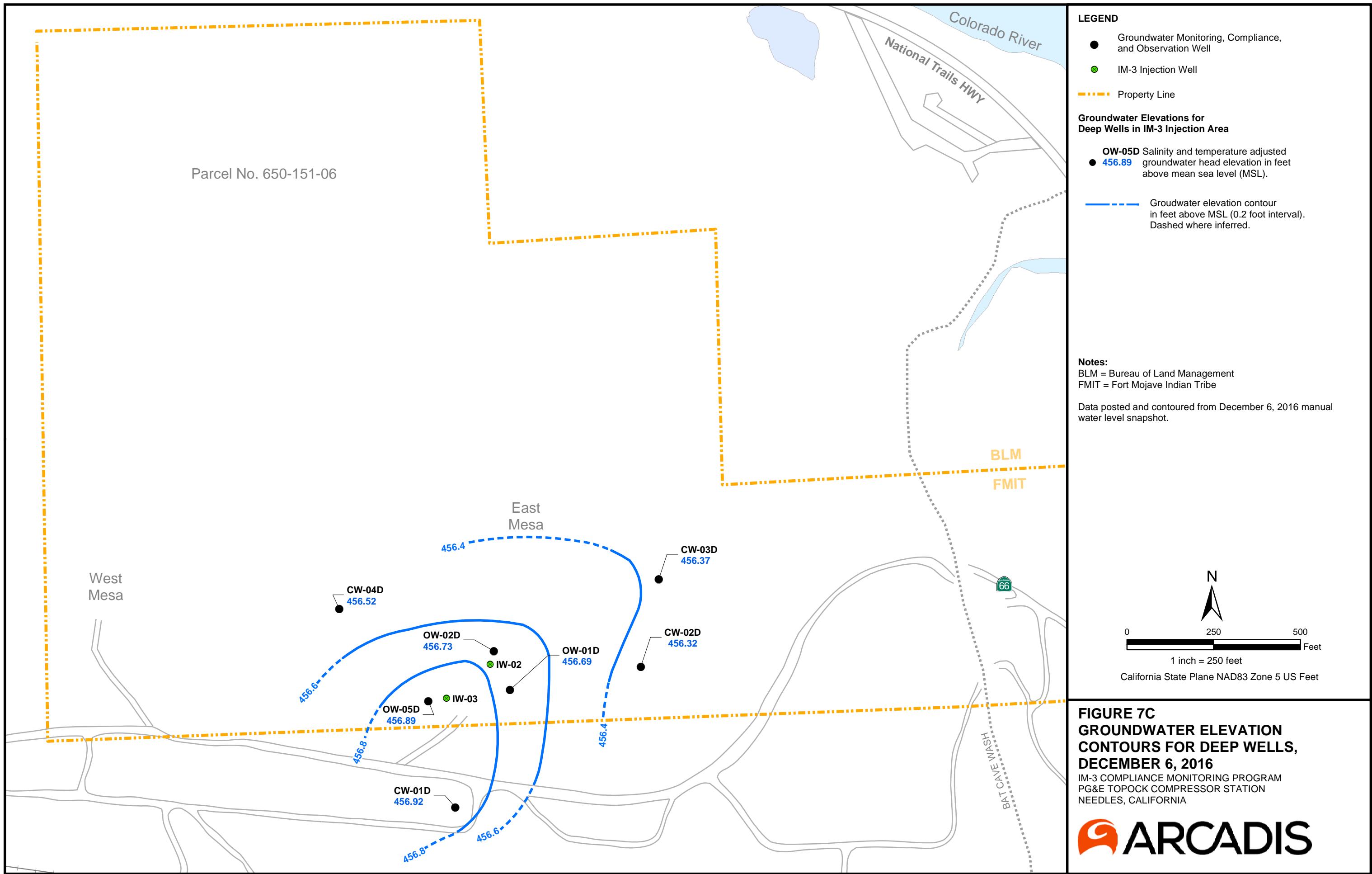






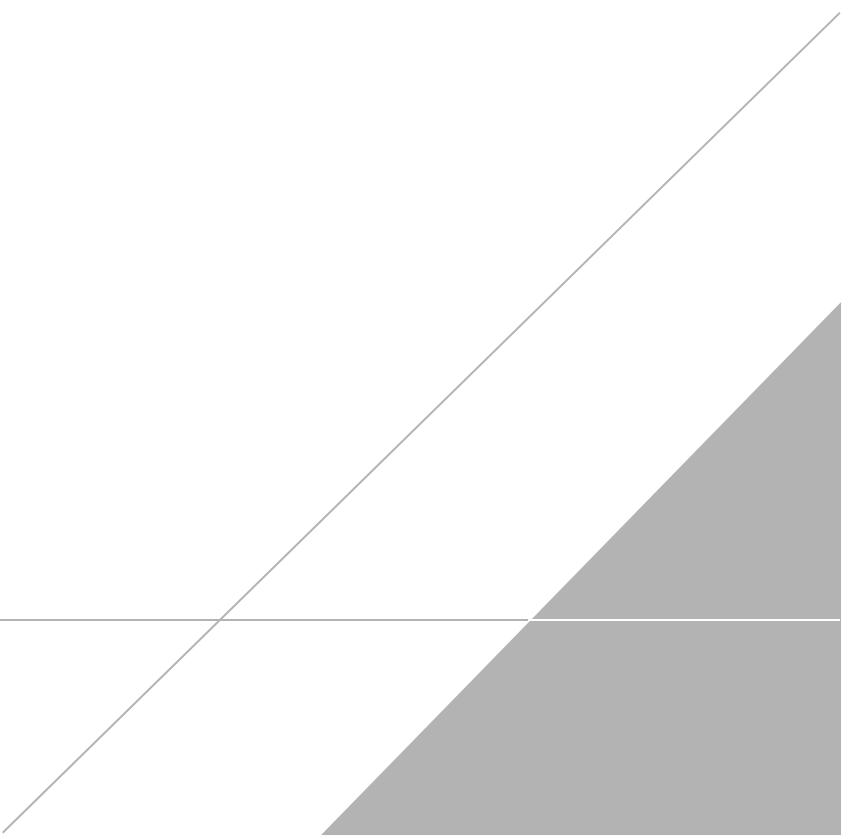






# APPENDIX A

Laboratory Reports, 2016



November 04, 2016

Dan Bush  
ARCADIS U.S., Inc. - California  
1410 Rocky Ridge Dr #330  
Roseville, CA 95661  
TEL: (916) 786-3302  
FAX:

Workorder No.: N021309

RE: PG&E Topock - CMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 18, 2016 by ASSET Laboratories .  
The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in  
accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

*Nancy Libucayo for*

Puri Romualdo  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



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3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021309

**CASE NARRATIVE****SAMPLE RECEIVING/GENERAL COMMENTS**

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

**Subcontracted Analyses:**

Ammonia was subcontracted to Truesdail-Irvine,CA.

**Analytical Comments for EPA 200.7\_Dissolved:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N021309-001B-MSD1 and N021324-002B-MS1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N021309-002B-MS2, N021309-002B-MSD2 and N021324-003B-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

**Analytical Comments for EPA 200.8\_Dissolved:**

Dilution was necessary on some analytes for all samples and QC samples N021309-001B-MS, N021309-001B-MSD and N021324-002B-MS due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples and QC samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Lead on QC



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---

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021309

## CASE NARRATIVE

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samples N021309-001B-MS, N021309-001B-MSD and N021324-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



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# ASSET Laboratories

Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021309

## Work Order Sample Summary

**Contract No:**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N021309-001A	CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	10/18/2016	11/4/2016
N021309-001B	CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	10/18/2016	11/4/2016
N021309-001C	CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	10/18/2016	11/4/2016
N021309-001D	CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	10/18/2016	11/4/2016
N021309-001E	CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	10/18/2016	11/4/2016
N021309-001F	CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	10/18/2016	11/4/2016
N021309-002A	CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	10/18/2016	11/4/2016
N021309-002B	CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	10/18/2016	11/4/2016
N021309-002C	CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	10/18/2016	11/4/2016
N021309-002D	CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	10/18/2016	11/4/2016
N021309-002E	CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	10/18/2016	11/4/2016
N021309-002F	CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	10/18/2016	11/4/2016
N021309-003A	CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	10/18/2016	11/4/2016
N021309-003B	CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	10/18/2016	11/4/2016
N021309-003C	CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	10/18/2016	11/4/2016
N021309-003D	CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	10/18/2016	11/4/2016
N021309-003E	CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	10/18/2016	11/4/2016
N021309-003F	CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	10/18/2016	11/4/2016
N021309-004A	CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	10/18/2016	11/4/2016
N021309-004B	CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	10/18/2016	11/4/2016
N021309-004C	CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	10/18/2016	11/4/2016
N021309-004D	CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	10/18/2016	11/4/2016
N021309-004E	CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	10/18/2016	11/4/2016
N021309-004F	CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	10/18/2016	11/4/2016
N021309-005A	CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	10/18/2016	11/4/2016
N021309-005B	CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	10/18/2016	11/4/2016
N021309-005C	CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	10/18/2016	11/4/2016
N021309-005D	CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	10/18/2016	11/4/2016
N021309-005E	CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	10/18/2016	11/4/2016



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021309

## Work Order Sample Summary

**Contract No:**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N021309-005F	CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	10/18/2016	11/4/2016
N021309-006A	OW-01D-Q416	Groundwater	10/18/2016 12:29:00 PM	10/18/2016	11/4/2016
N021309-006B	OW-01D-Q416	Groundwater	10/18/2016 12:29:00 PM	10/18/2016	11/4/2016
N021309-006C	OW-01D-Q416	Groundwater	10/18/2016 12:29:00 PM	10/18/2016	11/4/2016
N021309-006D	OW-01D-Q416	Groundwater	10/18/2016 12:29:00 PM	10/18/2016	11/4/2016
N021309-007A	MW-902-Q416	Groundwater	10/18/2016 12:39:00 PM	10/18/2016	11/4/2016
N021309-007B	MW-902-Q416	Groundwater	10/18/2016 12:39:00 PM	10/18/2016	11/4/2016
N021309-007C	MW-902-Q416	Groundwater	10/18/2016 12:39:00 PM	10/18/2016	11/4/2016
N021309-007D	MW-902-Q416	Groundwater	10/18/2016 12:39:00 PM	10/18/2016	11/4/2016
N021309-008A	OW-01M-Q416	Groundwater	10/18/2016 11:45:00 AM	10/18/2016	11/4/2016
N021309-008B	OW-01M-Q416	Groundwater	10/18/2016 11:45:00 AM	10/18/2016	11/4/2016
N021309-008C	OW-01M-Q416	Groundwater	10/18/2016 11:45:00 AM	10/18/2016	11/4/2016
N021309-008D	OW-01M-Q416	Groundwater	10/18/2016 11:45:00 AM	10/18/2016	11/4/2016
N021309-009A	OW-01S-Q416	Groundwater	10/18/2016 10:59:00 AM	10/18/2016	11/4/2016
N021309-009B	OW-01S-Q416	Groundwater	10/18/2016 10:59:00 AM	10/18/2016	11/4/2016
N021309-009C	OW-01S-Q416	Groundwater	10/18/2016 10:59:00 AM	10/18/2016	11/4/2016
N021309-009D	OW-01S-Q416	Groundwater	10/18/2016 10:59:00 AM	10/18/2016	11/4/2016
N021309-010A	MW-701-Q416	Groundwater	10/18/2016 4:30:00 PM	10/18/2016	11/4/2016



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7800	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7800	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	8900	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7400	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7300	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7500	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7500	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	7300	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161019C	QC Batch: R111173	PrepDate	Analyst: LR
Specific Conductance	6400	0.10	umhos/cm
		0.10	1
			10/19/2016 11:00 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1\_WPGE

Sample ID	N021309-003DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	111173
Client ID:	ZZZZZZ	Batch ID:	R111173	TestNo:	EPA 120.1			Analysis Date:	10/19/2016	SeqNo:	2453430
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Specific Conductance		8830.000	0.10					8870		0.452	10

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4700	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3900	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161019F	QC Batch: 60017			PrepDate	10/19/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50	mg/L	1	10/19/2016 12:57 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Sample ID <b>LCS-60017</b>	SampType: <b>LCS</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/19/2016</b>	RunNo: <b>111177</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60017</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2455739</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	976.000	10	1000	0	97.6
				80	120
Sample ID <b>MBLK-60017</b>	SampType: <b>MBLK</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/19/2016</b>	RunNo: <b>111177</b>
Client ID: <b>PBW</b>	Batch ID: <b>60017</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2455740</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	ND	10			
Sample ID <b>N021309-003DDUP</b>	SampType: <b>DUP</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/19/2016</b>	RunNo: <b>111177</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60017</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2455744</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	4710.000	50		4705	0.106
					5

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023	PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L
Boron	1200	38	100	µg/L
Calcium	140000	28	500	µg/L
Iron	ND	1.8	20	µg/L
Magnesium	9800	4.4	100	µg/L
Potassium	11000	360	2500	µg/L
Sodium	1400000	580	25000	µg/L

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038	PrepDate	10/21/2016	Analyst: CEI
Iron	1400	1.8	20	ug/L

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 01:18 PM
Boron	1100	38	100	µg/L	1	10/29/2016 01:18 PM
Calcium	78000	28	500	µg/L	1	10/29/2016 01:18 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 01:18 PM
Magnesium	5300	4.4	100	µg/L	1	10/29/2016 01:18 PM
Potassium	11000	360	2500	µg/L	5	10/25/2016 09:17 AM
Sodium	1500000	580	25000	µg/L	50	10/25/2016 10:53 AM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	30	1.8	20	ug/L	1	10/27/2016 03:47 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 01:24 PM
Boron	1300	38	100	µg/L	1	10/29/2016 01:24 PM
Calcium	190000	28	500	µg/L	1	10/29/2016 01:24 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 01:24 PM
Magnesium	15000	4.4	100	µg/L	1	10/29/2016 01:24 PM
Potassium	14000	360	2500	µg/L	5	10/25/2016 09:22 AM
Sodium	1700000	580	25000	µg/L	50	10/25/2016 11:25 AM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	540	1.8	20	ug/L	1	10/27/2016 03:53 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 01:30 PM
Boron	1200	38	100	µg/L	1	10/29/2016 01:30 PM
Calcium	130000	28	500	µg/L	1	10/29/2016 01:30 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 01:30 PM
Magnesium	8900	4.4	100	µg/L	1	10/29/2016 01:30 PM
Potassium	12000	360	2500	µg/L	5	10/25/2016 09:27 AM
Sodium	1500000	580	25000	µg/L	50	10/25/2016 01:01 PM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	ND	1.8	20	ug/L	1	10/27/2016 04:12 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 01:50 PM
Boron	1000	38	100	µg/L	1	10/29/2016 01:50 PM
Calcium	190000	28	500	µg/L	1	10/29/2016 01:50 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 01:50 PM
Magnesium	15000	4.4	100	µg/L	1	10/29/2016 01:50 PM
Potassium	13000	360	2500	µg/L	5	10/25/2016 09:32 AM
Sodium	1300000	580	25000	µg/L	50	10/25/2016 01:05 PM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	140	1.8	20	ug/L	1	10/27/2016 04:19 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023	PrepDate	10/20/2016	Analyst: CEI		
Sodium	1300000	580	25000	µg/L	50	10/25/2016 11:45 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023	PrepDate	10/20/2016	Analyst: CEI		
Sodium	1300000	580	25000	µg/L	50	10/25/2016 01:08 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Sodium	1400000	580	25000	µg/L	50	10/25/2016 01:11 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Sodium	850000	580	25000	µg/L	50	10/25/2016 12:17 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7\_WDPGEPPB

Sample ID	MB-60023	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	PBW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458361
<b>Analyte</b>											
Potassium		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium		ND	500								
Sodium		ND	500								
Sample ID	LCS2-60023	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	LCSW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458362
<b>Analyte</b>											
Potassium	19806.768	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium	19806.768	500	20000	0	99.0	85	115				
Sodium	20395.249	500	20000	0	102	85	115				
Sample ID	N021309-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458390
<b>Analyte</b>											
Potassium	32826.287	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium	32826.287	2500	20000	10650	111	75	125				
Sample ID	N021309-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458391
<b>Analyte</b>											
Sodium	1578399.596	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Sodium	1578399.596	25000	20000	1471000	539	75	125				S
Sample ID	N021309-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458392
<b>Analyte</b>											
Potassium	32962.239	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium	32962.239	2500	20000	10650	112	75	125	32830	0.413	20	

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.7\_WDPGEPPB**

Sample ID	N021309-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458393
<b>Analyte</b>											
Sodium	1565991.616	PQL	25000	SPK value	20000	SPK Ref Val	%REC	LowLimit	1471000	HighLimit	1578000
					477		75	125			0.789
									20		S
Sample ID	N021324-003B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458406
<b>Analyte</b>											
Potassium	33532.370	PQL	2500	SPK value	20000	SPK Ref Val	%REC	LowLimit	11240	HighLimit	125
					111		75	125			
Sample ID	N021324-003B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458409
<b>Analyte</b>											
Sodium	1488149.664	PQL	25000	SPK value	20000	SPK Ref Val	%REC	LowLimit	1438000	HighLimit	125
					250		75	125			S
Sample ID	MB-60023	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111358
Client ID:	PBW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462017
<b>Analyte</b>											
Aluminum	7.787	PQL	50	SPK value	ND	SPK Ref Val	%REC	LowLimit	50	HighLimit	100
Boron	ND		100								
Calcium	ND	PQL	500	SPK value	ND	SPK Ref Val	%REC	LowLimit	500	HighLimit	1000
Iron	5.628	PQL	20	SPK value	ND	SPK Ref Val	%REC	LowLimit	5.628	HighLimit	40
Magnesium	9.710	PQL	100	SPK value	ND	SPK Ref Val	%REC	LowLimit	9.710	HighLimit	200
Sample ID	LCS1-60023	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111358
Client ID:	LCSW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462018
<b>Analyte</b>											
Aluminum	10632.243	PQL	50	SPK value	10000	SPK Ref Val	%REC	LowLimit	106	HighLimit	85
					0				115		

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.7\_WDPGEPPB**

Sample ID <b>LCS1-60023</b>	SampType: <b>LCS</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>LCSW</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462018</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5185.635	100	5000	0	104	85	115				
Calcium	10098.995	500	10000	0	101	85	115				
Iron	111.588	20	100.0	0	112	85	115				
Magnesium	11107.246	100	10000	0	111	85	115				
Sample ID <b>N021309-001B-MS1</b>	SampType: <b>MS</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462022</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	11278.131	50	10000	0	113	75	125				
Boron	6864.675	100	5000	1235	113	75	125				
Calcium	146994.556	500	10000	136400	106	75	125				
Iron	106.810	20	100.0	4.593	102	75	125				
Magnesium	19467.953	100	10000	9758	97.1	75	125				
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462023</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	11232.809	50	10000	0	112	75	125	11280	0.403	20	
Boron	6879.754	100	5000	1235	113	75	125	6865	0.219	20	
Calcium	149692.983	500	10000	136400	133	75	125	147000	1.82	20	S
Iron	108.281	20	100.0	4.593	104	75	125	106.8	1.37	20	
Magnesium	19514.682	100	10000	9758	97.6	75	125	19470	0.240	20	
Sample ID <b>N021324-002B-MS1</b>	SampType: <b>MS</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462032</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.7\_WDPGEPPB

Sample ID	N021324-002B-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111358	
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462032	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		11210.995	50	10000	0	112	75	125				
Boron		6608.650	100	5000	1037	111	75	125				
Calcium		168533.833	500	10000	156300	122	75	125				
Iron		114.903	20	100.0	46.05	68.9	75	125			S	
Magnesium		22826.656	100	10000	13290	95.3	75	125				

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WPGEPPB

Sample ID	MB-60038	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	10/21/2016	RunNo:	111332
Client ID:	PBW	Batch ID:	60038	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	10/27/2016	SeqNo:	2460185
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Iron		ND	20								
Sample ID	LCS-60038	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	10/21/2016	RunNo:	111332
Client ID:	LCSW	Batch ID:	60038	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	10/27/2016	SeqNo:	2460186
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Iron		106.280	20	100.0	0	106	85	115			
Sample ID	N021309-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	10/21/2016	RunNo:	111332
Client ID:	ZZZZZZ	Batch ID:	60038	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	10/27/2016	SeqNo:	2460191
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Iron		1514.600	20	100.0	1390	124	75	125	1502	0.837	20
Sample ID	N021332-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	10/21/2016	RunNo:	111332
Client ID:	ZZZZZZ	Batch ID:	60038	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	10/27/2016	SeqNo:	2460205
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Iron		101.634	20	100.0	4.681	97.0	75	125			
Sample ID	N021309-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	10/21/2016	RunNo:	111332
Client ID:	ZZZZZZ	Batch ID:	60038	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	10/27/2016	SeqNo:	2466758
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Iron		1501.974	20	100.0	1390	112	75	125			

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045		PrepDate	10/21/2016	Analyst: CEI
Antimony	ND	0.16	2.5	µg/L	5	10/31/2016 11:50 AM
Arsenic	2.0	0.025	0.10	µg/L	1	10/31/2016 11:44 AM
Barium	67	0.35	5.0	µg/L	5	10/31/2016 11:50 AM
Beryllium	ND	0.22	2.5	µg/L	5	10/31/2016 11:50 AM
Cadmium	ND	0.24	2.5	µg/L	5	10/31/2016 11:50 AM
Cobalt	ND	0.026	0.50	µg/L	1	10/31/2016 11:44 AM
Copper	ND	0.26	1.0	µg/L	1	10/31/2016 11:44 AM
Lead	ND	0.92	25	µg/L	25	10/31/2016 11:56 AM
Manganese	1.2	0.056	0.50	µg/L	1	10/31/2016 11:44 AM
Molybdenum	18	0.19	2.5	µg/L	5	10/31/2016 11:50 AM
Nickel	ND	0.040	1.0	µg/L	1	10/31/2016 11:44 AM
Selenium	2.7	0.028	0.50	µg/L	1	10/31/2016 11:44 AM
Silver	ND	0.30	2.5	µg/L	5	10/31/2016 11:50 AM
Thallium	ND	0.74	12	µg/L	25	10/31/2016 11:56 AM
Vanadium	3.7	0.021	1.0	µg/L	1	10/31/2016 11:44 AM
Zinc	ND	0.27	10	µg/L	1	10/31/2016 11:44 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.16	2.5	µg/L	5	10/31/2016 01:28 PM
Arsenic		1.5	0.025	0.10	µg/L	1	10/31/2016 01:22 PM
Barium		17	0.35	5.0	µg/L	5	10/31/2016 01:28 PM
Beryllium		ND	0.22	2.5	µg/L	5	10/31/2016 01:28 PM
Cadmium		ND	0.24	2.5	µg/L	5	10/31/2016 01:28 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 01:22 PM
Copper		ND	0.26	1.0	µg/L	1	10/31/2016 01:22 PM
Lead		ND	0.92	25	µg/L	25	10/31/2016 01:33 PM
Manganese		1.9	0.056	0.50	µg/L	1	10/31/2016 01:22 PM
Molybdenum		17	0.19	2.5	µg/L	5	10/31/2016 01:28 PM
Nickel		ND	0.040	1.0	µg/L	1	10/31/2016 01:22 PM
Selenium		3.2	0.028	0.50	µg/L	1	10/31/2016 01:22 PM
Silver		ND	0.30	2.5	µg/L	5	10/31/2016 01:28 PM
Thallium		ND	0.74	12	µg/L	25	10/31/2016 01:33 PM
Vanadium		2.6	0.021	1.0	µg/L	1	10/31/2016 01:22 PM
Zinc		ND	0.27	10	µg/L	1	10/31/2016 01:22 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045		PrepDate	10/21/2016	Analyst: CEI
Antimony	ND	0.16	2.5	µg/L	5	10/31/2016 01:45 PM
Arsenic	1.2	0.025	0.10	µg/L	1	10/31/2016 01:39 PM
Barium	48	0.35	5.0	µg/L	5	10/31/2016 01:45 PM
Beryllium	ND	0.22	2.5	µg/L	5	10/31/2016 01:45 PM
Cadmium	ND	0.24	2.5	µg/L	5	10/31/2016 01:45 PM
Cobalt	ND	0.026	0.50	µg/L	1	10/31/2016 01:39 PM
Copper	ND	0.26	1.0	µg/L	1	10/31/2016 01:39 PM
Lead	ND	0.92	25	µg/L	25	10/31/2016 01:50 PM
Manganese	1.2	0.056	0.50	µg/L	1	10/31/2016 01:39 PM
Molybdenum	28	0.19	2.5	µg/L	5	10/31/2016 01:45 PM
Nickel	ND	0.040	1.0	µg/L	1	10/31/2016 01:39 PM
Selenium	ND	0.14	2.5	µg/L	5	10/31/2016 01:45 PM
Silver	ND	0.30	2.5	µg/L	5	10/31/2016 01:45 PM
Thallium	ND	0.74	12	µg/L	25	10/31/2016 01:50 PM
Vanadium	2.8	0.021	1.0	µg/L	1	10/31/2016 01:39 PM
Zinc	ND	0.27	10	µg/L	1	10/31/2016 01:39 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.16	2.5	µg/L	5	10/31/2016 02:01 PM
Arsenic		3.0	0.025	0.10	µg/L	1	10/31/2016 01:56 PM
Barium		17	0.35	5.0	µg/L	5	10/31/2016 02:01 PM
Beryllium		ND	0.22	2.5	µg/L	5	10/31/2016 02:01 PM
Cadmium		ND	0.24	2.5	µg/L	5	10/31/2016 02:01 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 01:56 PM
Copper		ND	0.26	1.0	µg/L	1	10/31/2016 01:56 PM
Lead		ND	0.92	25	µg/L	25	10/31/2016 02:07 PM
Manganese		1.4	0.056	0.50	µg/L	1	10/31/2016 01:56 PM
Molybdenum		17	0.19	2.5	µg/L	5	10/31/2016 02:01 PM
Nickel		ND	0.040	1.0	µg/L	1	10/31/2016 01:56 PM
Selenium		2.9	0.14	2.5	µg/L	5	10/31/2016 02:01 PM
Silver		ND	0.30	2.5	µg/L	5	10/31/2016 02:01 PM
Thallium		ND	0.74	12	µg/L	25	10/31/2016 02:07 PM
Vanadium		3.3	0.021	1.0	µg/L	1	10/31/2016 01:56 PM
Zinc		ND	0.27	10	µg/L	1	10/31/2016 01:56 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045			PrepDate	10/21/2016	Analyst: CEI
Antimony	ND	0.16	2.5	µg/L	5	10/31/2016 02:29 PM
Arsenic	1.9	0.12	0.50	µg/L	5	11/1/2016 07:48 PM
Barium	93	0.35	5.0	µg/L	5	10/31/2016 02:29 PM
Beryllium	ND	0.22	2.5	µg/L	5	10/31/2016 02:29 PM
Cadmium	ND	0.24	2.5	µg/L	5	10/31/2016 02:29 PM
Cobalt	ND	0.026	0.50	µg/L	1	10/31/2016 02:12 PM
Copper	ND	1.3	5.0	µg/L	5	10/31/2016 02:29 PM
Lead	ND	0.92	25	µg/L	25	10/31/2016 02:35 PM
Manganese	0.78	0.056	0.50	µg/L	1	10/31/2016 02:12 PM
Molybdenum	9.0	0.19	2.5	µg/L	5	10/31/2016 02:29 PM
Nickel	ND	0.20	5.0	µg/L	5	10/31/2016 02:29 PM
Selenium	2.9	0.14	2.5	µg/L	5	10/31/2016 02:29 PM
Silver	ND	0.30	2.5	µg/L	5	10/31/2016 02:29 PM
Thallium	ND	0.74	12	µg/L	25	10/31/2016 02:35 PM
Vanadium	3.7	0.021	1.0	µg/L	1	10/31/2016 02:12 PM
Zinc	ND	1.3	50	µg/L	5	10/31/2016 02:29 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	23	0.19	2.5	µg/L	5 10/31/2016 02:46 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	22	0.19	2.5	µg/L	5 10/31/2016 02:57 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	24	0.19	2.5	µg/L	5 10/31/2016 03:08 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045			PrepDate	10/21/2016	Analyst: CEI
Molybdenum		5.8	0.039	0.50	µg/L	1
						10/31/2016 03:13 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_WDISS

Sample ID	MB-60045	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111410		
Client ID:	PBW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464437		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		ND			0.50								
Arsenic		ND			0.10								
Barium		ND			1.0								
Beryllium		ND			0.50								
Cadmium		ND			0.50								
Cobalt		ND			0.50								
Copper		ND			1.0								
Lead		ND			1.0								
Manganese		ND			0.50								
Molybdenum		ND			0.50								
Nickel		ND			1.0								
Selenium		ND			0.50								
Silver		ND			0.50								
Thallium		ND			0.50								
Vanadium		ND			1.0								
Zinc		ND			10								

Sample ID	LCS-60045	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111410		
Client ID:	LCSW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464438		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		10.439		0.50	10.00	0	104	85	115				
Arsenic		9.913		0.10	10.00	0	99.1	85	115				
Barium		104.625		1.0	100.0	0	105	85	115				
Beryllium		9.796		0.50	10.00	0	98.0	85	115				
Cadmium		10.372		0.50	10.00	0	104	85	115				
Cobalt		9.560		0.50	10.00	0	95.6	85	115				
Copper		9.786		1.0	10.00	0	97.9	85	115				

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID <b>LCS-60045</b>	SampType: <b>LCS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>LCSW</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464438</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.053	1.0	10.00	0	101	85	115				
Manganese	96.758	0.50	100.0	0	96.8	85	115				
Molybdenum	9.803	0.50	10.00	0	98.0	85	115				
Nickel	9.588	1.0	10.00	0	95.9	85	115				
Selenium	9.399	0.50	10.00	0	94.0	85	115				
Silver	9.874	0.50	10.00	0	98.7	85	115				
Thallium	9.871	0.50	10.00	0	98.7	85	115				
Vanadium	10.185	1.0	10.00	0	102	85	115				
Zinc	100.813	10	100.0	0	101	85	115				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464448</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.738	0.10	10.00	1.973	97.6	75	125				
Cobalt	8.099	0.50	10.00	0	81.0	75	125				
Manganese	88.446	0.50	100.0	1.198	87.2	75	125				
Nickel	9.289	1.0	10.00	0.1368	91.5	75	125				
Selenium	12.277	0.50	10.00	2.683	95.9	75	125				
Vanadium	13.225	1.0	10.00	3.678	95.5	75	125				
Zinc	80.831	10	100.0	0	80.8	75	125				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464449</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.073	2.5	10.00	0.1726	109	75	125				
Barium	174.577	5.0	100.0	66.55	108	75	125				
Beryllium	10.826	2.5	10.00	0	108	75	125				
Cadmium	10.204	2.5	10.00	0	102	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID	<b>N021309-001B-MS</b>	SampType:	MS	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464449</b>
<b>Analyte</b>											
Molybdenum		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	30.228		2.5	10.00	18.03	122	75	125			
Silver		10.275	2.5	10.00	0	103	75	125			

Sample ID	<b>N021309-001B-MS</b>	SampType:	MS	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464450</b>
<b>Analyte</b>											
Lead		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	1.240		25	10.00	0	12.4	75	125			S
Thallium		10.180	12	10.00	0	102	75	125			

Sample ID	<b>N021309-001B-MSD</b>	SampType:	MSD	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464451</b>
<b>Analyte</b>											
Arsenic		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	11.740		0.10	10.00	1.973	97.7	75	125	11.74	0.0220	20
Cobalt		8.207	0.50	10.00	0	82.1	75	125	8.099	1.33	20
Manganese		89.810	0.50	100.0	1.198	88.6	75	125	88.45	1.53	20
Nickel		9.376	1.0	10.00	0.1368	92.4	75	125	9.289	0.935	20
Selenium		11.466	0.50	10.00	2.683	87.8	75	125	12.28	6.83	20
Vanadium		13.490	1.0	10.00	3.678	98.1	75	125	13.22	1.98	20
Zinc		81.628	10	100.0	0	81.6	75	125	80.83	0.982	20

Sample ID	<b>N021309-001B-MSD</b>	SampType:	MSD	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464452</b>
<b>Analyte</b>											
Antimony		10.793	2.5	10.00	0.1726	106	75	125	11.07	2.55	20
Barium		171.110	5.0	100.0	66.55	105	75	125	174.6	2.01	20
Beryllium		10.646	2.5	10.00	0	106	75	125	10.83	1.68	20

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111410									
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464452									
<b>Analyte</b>																				
Cadmium	9.968	PQL	2.5	SPK value	10.00	SPK Ref Val	0	%REC	99.7	LowLimit	75	HighLimit	125	RPD Ref Val	10.20	%RPD	2.33	RPDLimit	20	Qual
Molybdenum	29.455		2.5		10.00		18.03		114		75		125		30.23		2.59		20	
Silver	10.080		2.5		10.00		0		101		75		125		10.28		1.92		20	
<b>Sample ID N021309-001B-MSD SampType: MSD TestCode: 200.8_WDISS Units: µg/L Prep Date: 10/21/2016 RunNo: 111410 Client ID: ZZZZZZ Batch ID: 60045 TestNo: EPA 200.8 Analysis Date: 10/31/2016 SeqNo: 2464453 Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual</b>																				
Lead	1.198	PQL	25	SPK value	10.00	SPK Ref Val	0	%REC	12.0	LowLimit	75	HighLimit	125	RPD Ref Val	1.240	%RPD	0	RPDLimit	20	S
Thallium	10.500		12		10.00		0		105		75		125		10.18		0		20	
<b>Sample ID N021324-002B-MS SampType: MS TestCode: 200.8_WDISS Units: µg/L Prep Date: 10/21/2016 RunNo: 111410 Client ID: ZZZZZZ Batch ID: 60045 TestNo: EPA 200.8 Analysis Date: 10/31/2016 SeqNo: 2464489 Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual</b>																				
Cobalt	8.383	PQL	0.50	SPK value	10.00	SPK Ref Val	0.03465	%REC	83.5	LowLimit	75	HighLimit	125	RPD Ref Val		%RPD		RPDLimit		Qual
Manganese	88.972		0.50		100.0		1.255		87.7		75		125							
Vanadium	12.406		1.0		10.00		2.440		99.7		75		125							
<b>Sample ID N021324-002B-MS SampType: MS TestCode: 200.8_WDISS Units: µg/L Prep Date: 10/21/2016 RunNo: 111410 Client ID: ZZZZZZ Batch ID: 60045 TestNo: EPA 200.8 Analysis Date: 10/31/2016 SeqNo: 2464490 Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual</b>																				
Antimony	10.869	PQL	2.5	SPK value	10.00	SPK Ref Val	0	%REC	109	LowLimit	75	HighLimit	125	RPD Ref Val		%RPD		RPDLimit		Qual
Arsenic	11.723		0.50		10.00		1.157		106		75		125							
Barium	194.638		5.0		100.0		87.39		107		75		125							
Beryllium	10.614		2.5		10.00		0		106		75		125							
Cadmium	9.766		2.5		10.00		0		97.7		75		125							
Molybdenum	28.675		2.5		10.00		16.63		120		75		125							

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111410</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2464490</b>
<b>Analyte</b>					
Nickel	Result	PQL	SPK value	SPK Ref Val	%REC
11.490	5.0	10.00	1.627	98.6	75      125
Selenium	Result	PQL	SPK value	SPK Ref Val	%REC
12.678	2.5	10.00	3.598	90.8	75      125
Zinc	Result	PQL	SPK value	SPK Ref Val	%REC
90.487	50	100.0	0	90.5	75      125
Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111410</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2464491</b>
<b>Analyte</b>					
Lead	Result	PQL	SPK value	SPK Ref Val	%REC
1.797	25	10.00	0	18.0	75      125
Silver	Result	PQL	SPK value	SPK Ref Val	%REC
11.213	12	10.00	0	112	75      125
Thallium	Result	PQL	SPK value	SPK Ref Val	%REC
9.546	12	10.00	0	95.5	75      125
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111437</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>11/1/2016</b>	SeqNo: <b>2466004</b>
<b>Analyte</b>					
Copper	Result	PQL	SPK value	SPK Ref Val	%REC
10.156	1.0	10.00	0	102	75      125
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.8_WDISS</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111437</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>11/1/2016</b>	SeqNo: <b>2466005</b>
<b>Analyte</b>					
Copper	Result	PQL	SPK value	SPK Ref Val	%REC
10.170	1.0	10.00	0	102	75      125      10.16      0.137      20
Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111437</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>11/1/2016</b>	SeqNo: <b>2466011</b>
<b>Analyte</b>					
Copper	Result	PQL	SPK value	SPK Ref Val	%REC
9.223	1.0	10.00	0	92.2	75      125

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB
Hexavalent Chromium	1.8 0.066	0.20	µg/L
			1 10/24/2016 11:36 AM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	1.6 0.019	1.0	µg/L	1 10/31/2016 11:44 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB			
Hexavalent Chromium	0.37	0.066	0.20	µg/L	1	10/24/2016 11:55 AM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI		
Chromium	ND	0.019	1.0	µg/L	1	10/31/2016 01:22 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB		
Hexavalent Chromium	5.9    0.066	0.20	µg/L	1	10/24/2016 12:14 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI	
Chromium	5.8    0.019	1.0	µg/L	1	10/31/2016 01:39 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB			
Hexavalent Chromium	0.57	0.066	0.20	µg/L	1	10/24/2016 12:33 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI		
Chromium	ND	0.019	1.0	µg/L	1	10/31/2016 01:56 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB
Hexavalent Chromium	2.2 0.066	0.20	µg/L
			1 10/24/2016 01:40 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	2.1 0.019	1.0	µg/L	1 10/31/2016 02:12 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB			
Hexavalent Chromium	0.21	0.066	0.20	µg/L	1	10/24/2016 01:59 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI		
Chromium	ND	0.019	1.0	µg/L	1	10/31/2016 02:40 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB		
Hexavalent Chromium	ND 0.066	0.20	µg/L	1	10/24/2016 02:18 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI	
Chromium	ND 0.019	1.0	µg/L	1	10/31/2016 02:51 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB		
Hexavalent Chromium	0.52    0.066	0.20	µg/L	1	10/24/2016 02:37 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI	
Chromium	ND    0.019	1.0	µg/L	1	10/31/2016 03:02 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB		
Hexavalent Chromium	5.0 0.066	0.20	µg/L	1	10/24/2016 02:56 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI	
Chromium	5.5 0.019	1.0	µg/L	1	10/31/2016 03:13 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-010

**Client Sample ID:** MW-701-Q416  
**Collection Date:** 10/18/2016 4:30:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161024A	QC Batch: R111293	PrepDate	Analyst: RAB
Hexavalent Chromium	ND 0.066	0.20	µg/L
			1 10/24/2016 06:55 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS\_CrPGE

Sample ID	MB-60045	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	PBW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464273
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		ND	1.0								
Sample ID	LCS-60045	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	LCSW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464274
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.711	1.0	10.00	0	97.1	85	115			
Sample ID	N021309-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464284
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.538	1.0	10.00	1.554	89.8	75	125			
Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464287
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.742	1.0	10.00	1.554	91.9	75	125	10.54	1.92	20
Sample ID	N021324-002B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464325
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.215	1.0	10.00	1.204	90.1	75	125			

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo:						
Client ID	Batch ID	TestNo		Analysis Date	SeqNo:						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									
Sample ID	LCS-R111293	SampType: LCS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 111293					
Client ID:	LCSW	Batch ID: R111293	TestNo: EPA 218.6		Analysis Date: 10/24/2016	SeqNo: 2458188					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.142	0.20	5.000	0	103	90	110				
Sample ID	N021309-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 111293					
Client ID:	ZZZZZZ	Batch ID: R111293	TestNo: EPA 218.6		Analysis Date: 10/24/2016	SeqNo: 2458190					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.848	0.20	1.000	1.767	108	90	110				
Sample ID	N021309-002AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 111293					
Client ID:	ZZZZZZ	Batch ID: R111293	TestNo: EPA 218.6		Analysis Date: 10/24/2016	SeqNo: 2458192					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.462	0.20	1.000	0.3728	109	90	110				
Sample ID	N021309-003AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 111293					
Client ID:	ZZZZZZ	Batch ID: R111293	TestNo: EPA 218.6		Analysis Date: 10/24/2016	SeqNo: 2458194					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.074	0.20	5.000	5.894	104	90	110				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 218.6\_WPGE**

Sample ID <b>N021309-004AMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>111293</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111293</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458198</b>
Analyte					
	Result	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.526	0.20	1.000	0.5701	95.6
Analyte					
	Result	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	3.261	0.20	1.000	2.207	105
Analyte					
	Result	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.285	0.20	1.000	0.2124	107
Analyte					
	Result	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.276	0.20	1.000	0.1794	110
Analyte					
	Result	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.503	0.20	1.000	0.5166	98.6

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

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ND Not Detected at the Reporting Limit

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	N021309-001ADUP	SampType	DUP	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111293	
Client ID	ZZZZZZ	Batch ID	R111293	TestNo	EPA 218.6			Analysis Date	10/24/2016	SeqNo	2458210	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.744	0.20				1.767	1.33	20			
Sample ID	N021309-005AMSD	SampType	MSD	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111293	
Client ID	ZZZZZZ	Batch ID	R111293	TestNo	EPA 218.6			Analysis Date	10/24/2016	SeqNo	2458217	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		3.240	0.20	1.000	2.207	103	90	110	3.261	0.649	20	
Sample ID	N021309-009AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111293	
Client ID	ZZZZZZ	Batch ID	R111293	TestNo	EPA 218.6 <th></th> <th></th> <th>Analysis Date</th> <td>10/24/2016</td> <th>SeqNo</th> <td>2458222</td>			Analysis Date	10/24/2016	SeqNo	2458222	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		10.337	0.20	5.000	4.953	108	90	110				
Sample ID	N021309-010AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111293	
Client ID	ZZZZZZ	Batch ID	R111293	TestNo	EPA 218.6 <th></th> <th></th> <th>Analysis Date</th> <td>10/24/2016</td> <th>SeqNo</th> <td>2458224</td>			Analysis Date	10/24/2016	SeqNo	2458224	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.086	0.20	1.000	0	109	90	110				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172	PrepDate	Analyst: LR
Turbidity	21	0.10	0.10
		NTU	1
			10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172		PrepDate		Analyst: LR	
Turbidity	0.57	0.10	0.10	NTU	1	10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172	PrepDate	Analyst: LR
Turbidity	12	0.10	0.10
		NTU	1
			10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172		PrepDate		Analyst: LR
Turbidity	0.49	0.10	0.10	NTU	1 10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172		PrepDate		Analyst: LR	
Turbidity	1.8	0.10	0.10	NTU	1	10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172		PrepDate		Analyst: LR	
Turbidity	4.5	0.10	0.10	NTU	1	10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172		PrepDate		Analyst: LR	
Turbidity	5.3	0.10	0.10	NTU	1	10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172	PrepDate	Analyst: LR
Turbidity	0.54	0.10	0.10
		NTU	1
			10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
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Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161019B	QC Batch: R111172	PrepDate	Analyst: LR
Turbidity	0.94	0.10	0.10
	NTU	1	10/19/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 2130\_W

Sample ID	MB-R111172	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	111172
Client ID:	PBW	Batch ID:	R111172	TestNo:	SM 2130B			Analysis Date:	10/19/2016	SeqNo:	2453416
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Turbidity		ND	0.10								
Sample ID	N021309-001DDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	111172
Client ID:	ZZZZZZ	Batch ID:	R111172	TestNo:	SM 2130B			Analysis Date:	10/19/2016	SeqNo:	2453418
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Turbidity		20.100	0.10					20.60		2.46	30

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161019D	QC Batch: R111175	PrepDate	Analyst: LR			
Alkalinity, Total (As CaCO <sub>3</sub> )	57	1.2	5.0	mg/L	1	10/19/2016 01:50 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161019D	QC Batch: R111175		PrepDate		Analyst: LR
Alkalinity, Total (As CaCO <sub>3</sub> )	59	1.2	5.0	mg/L	1 10/19/2016 01:50 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161019D	QC Batch: R111175		PrepDate		Analyst: LR
Alkalinity, Total (As CaCO <sub>3</sub> )	53	1.2	5.0	mg/L	1 10/19/2016 01:50 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161019D	QC Batch: R111175	PrepDate	Analyst: LR			
Alkalinity, Total (As CaCO <sub>3</sub> )	62	1.2	5.0	mg/L	1	10/19/2016 01:50 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161019D	QC Batch: R111175	PrepDate	Analyst: LR			
Alkalinity, Total (As CaCO <sub>3</sub> )	56	1.2	5.0	mg/L	1	10/19/2016 01:50 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 2320\_W\_SP

Sample ID <b>LCS-R111175</b>	SampType: <b>LCS</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111175</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111175</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453440</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	106.828	5.0	100.0	0	107
				85	115
<b>Sample ID MB-R111175</b>					
Client ID: <b>PBW</b>	Batch ID: <b>R111175</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111175</b>
TestNo: <b>SM 2320 B</b>				Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453441</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	ND	5.0			
<b>Sample ID N021309-001DDUP</b>					
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111175</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111175</b>
TestNo: <b>SM 2320 B</b>				Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453443</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	57.269	5.0			
				57.27	0
					30
<b>Sample ID N021309-002DMS</b>					
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111175</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111175</b>
TestNo: <b>SM 2320 B</b>				Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453445</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	164.097	5.0	100.0	59.47	105
				75	125
<b>Sample ID N021309-002DMSD</b>					
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111175</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111175</b>
TestNo: <b>SM 2320 B</b>				Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453446</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	162.996	5.0	100.0	59.47	104
				75	125
				164.1	0.673
					20

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:00 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:03 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:05 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:08 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:11 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

**ANALYTICAL QC SUMMARY REPORT****TestCode: 245.1\_WD**

Sample ID <b>MB-60037</b>	SampType: <b>MBLK</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>PBW</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455792</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury					
ND	0.20				
Sample ID <b>LCS-60037</b>	SampType: <b>LCS</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455793</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
5.140	0.20	5.000	0	103	85 115
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455794</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
4.869	0.20	5.000	0	97.4	75 125
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455795</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
5.063	0.20	5.000	0	101	75 125 4.869 3.92 20
Sample ID <b>N021332-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455810</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
5.257	0.20	5.000	0	105	75 125

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2200	9.7	250	mg/L	500	10/20/2016 06:14 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	2.8	0.087	0.50	mg/L	5	10/19/2016 04:35 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	530	3.3	25	mg/L	50	10/20/2016 06:29 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2300	9.7	250	mg/L	500	10/20/2016 07:45 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	2.7	0.087	0.50	mg/L	5	10/19/2016 04:51 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	520	3.3	25	mg/L	50	10/20/2016 08:01 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2600	9.7	250	mg/L	500	10/20/2016 08:16 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	2.8	0.087	0.50	mg/L	5	10/19/2016 05:06 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	530	3.3	25	mg/L	50	10/20/2016 08:31 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2200	9.7	250	mg/L	500	10/20/2016 08:47 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	3.0	0.087	0.50	mg/L	5	10/19/2016 05:21 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	520	3.3	25	mg/L	50	10/20/2016 09:02 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2200	9.7	250	mg/L	500	10/20/2016 09:17 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	1.8	0.087	0.50	mg/L	5	10/19/2016 05:37 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	520	3.3	25	mg/L	50	10/20/2016 09:33 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2100	9.7	250	mg/L	500	10/21/2016 01:37 AM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	2.1	0.087	0.50	mg/L	5	10/19/2016 05:52 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	500	3.3	25	mg/L	50	10/21/2016 01:53 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2100	9.7	250	mg/L	500	10/21/2016 02:08 AM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	2.1	0.087	0.50	mg/L	5	10/19/2016 06:38 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	500	3.3	25	mg/L	50	10/21/2016 02:23 AM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Chloride	2200	9.7	250	mg/L	500	10/21/2016 02:39 AM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB
Fluoride	2.2	0.087	0.50	mg/L	5	10/19/2016 06:53 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB
Sulfate	510	3.3	25	mg/L	50	10/21/2016 02:54 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB	
Chloride		2000	9.7	250	mg/L	500	10/21/2016 03:09 AM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161019B	QC Batch: R111186			PrepDate		Analyst: RAB	
Fluoride		1.4	0.087	0.50	mg/L	5	10/19/2016 07:08 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161020B	QC Batch: R111209			PrepDate		Analyst: RAB	
Sulfate		430	3.3	25	mg/L	50	10/21/2016 03:24 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_W\_CLPGE

Sample ID	LCS-R111209_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111209
Client ID:	LCSW	Batch ID:	R111209	TestNo:	EPA 300.0			Analysis Date:	10/20/2016	SeqNo:	2456937
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Chloride		1.978	0.50	2.000	0	98.9	90	110			Qual
Sample ID	MB-R111209_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111209
Client ID:	PBW	Batch ID:	R111209	TestNo:	EPA 300.0			Analysis Date:	10/20/2016	SeqNo:	2456938
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Chloride		0.205	0.50								Qual
Sample ID	N021309-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111209
Client ID:	ZZZZZZ	Batch ID:	R111209	TestNo:	EPA 300.0			Analysis Date:	10/20/2016	SeqNo:	2456942
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Chloride		2318.950	250				2244	3.31	20		Qual
Sample ID	N021306-002BMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111209
Client ID:	ZZZZZZ	Batch ID:	R111209	TestNo:	EPA 300.0			Analysis Date:	10/20/2016	SeqNo:	2456952
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Chloride		574.850	50	200.0	356.7	109	80	120			Qual
Sample ID	N021306-002BMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111209
Client ID:	ZZZZZZ	Batch ID:	R111209	TestNo:	EPA 300.0			Analysis Date:	10/20/2016	SeqNo:	2456953
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Chloride		577.140	50	200.0	356.7	110	80	120	574.8	0.398	20

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_CLPGE

Sample ID	<b>N021306-003BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_CLP</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111209</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111209</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/21/2016</b>	SeqNo:	<b>2456954</b>	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		579.420	50	200.0	359.9	110	80	120				

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 300\_W\_FPGE**

Sample ID <b>LCS-R111186_F</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111186</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111186</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453887</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
		0.10	1.250	0	106
				90	110
Sample ID <b>MB-R111186_F</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111186</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111186</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453888</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
		ND	0.10		
Sample ID <b>N021309-001DDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111186</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111186</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453900</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
		2.898	0.50		
				2.781	4.12
					20
Sample ID <b>N021309-002DMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111186</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111186</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453901</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
		9.094	0.50	6.250	2.659
				103	80
				120	
Sample ID <b>N021309-002DMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111186</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111186</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/19/2016</b>	SeqNo: <b>2453902</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
		9.112	0.50	6.250	2.659
				103	80
				120	9.094
					0.192
					20

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_FPGE

Sample ID	<b>N021309-003DMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_FPG</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111186</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111186</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/19/2016</b>	SeqNo:	<b>2453903</b>	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		9.287	0.50	6.250	2.754	105	80	120				

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 300\_W\_SO4PGE**

Sample ID	<b>LCS-R111209_SO4</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:				RunNo:	<b>111209</b>	
Client ID:	<b>LCSW</b>	Batch ID:	<b>R111209</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/20/2016</b>				SeqNo:	<b>2456890</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate		4.153	0.50	4.000	0	104	90	110						
Sample ID	<b>MB-R111209_SO4</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:				RunNo:	<b>111209</b>	
Client ID:	<b>PBW</b>	Batch ID:	<b>R111209</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/20/2016</b>				SeqNo:	<b>2456891</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate		0.217	0.50											
Sample ID	<b>N021309-001DDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:				RunNo:	<b>111209</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111209</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/20/2016</b>				SeqNo:	<b>2456895</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate		540.505	25							530.1	1.94	20		
Sample ID	<b>N021306-002BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:				RunNo:	<b>111209</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111209</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/21/2016</b>				SeqNo:	<b>2456905</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate		2437.120	100	800.0	1519	115	80	120						
Sample ID	<b>N021306-002BMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:				RunNo:	<b>111209</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111209</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/21/2016</b>				SeqNo:	<b>2456906</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate		2418.000	100	800.0	1519	112	80	120	2437	0.788	20			

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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 ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	N021306-003BMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	111209	
Client ID:	ZZZZZZ	Batch ID:	R111209	TestNo:	EPA 300.0			Analysis Date:	10/21/2016	SeqNo:	2456907	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	
Sulfate		2443.780		100	800.0	1521	115	80	120		RPDLimit	Qual

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

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H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-001

**Client Sample ID:** CW-02M-Q416  
**Collection Date:** 10/18/2016 3:37:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.6	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-002

**Client Sample ID:** CW-03D-Q416  
**Collection Date:** 10/18/2016 1:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.9	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-003

**Client Sample ID:** CW-03M-Q416  
**Collection Date:** 10/18/2016 2:27:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.1	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-004

**Client Sample ID:** CW-04D-Q416  
**Collection Date:** 10/18/2016 9:03:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.9	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-005

**Client Sample ID:** CW-04M-Q416  
**Collection Date:** 10/18/2016 9:48:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.9	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-006

**Client Sample ID:** OW-01D-Q416  
**Collection Date:** 10/18/2016 12:29:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.4	0.11	0.25	mg/L	5	10/31/2016

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-007

**Client Sample ID:** MW-902-Q416  
**Collection Date:** 10/18/2016 12:39:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.5	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-008

**Client Sample ID:** OW-01M-Q416  
**Collection Date:** 10/18/2016 11:45:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.7	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 03-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021309-009

**Client Sample ID:** OW-01S-Q416  
**Collection Date:** 10/18/2016 10:59:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.8	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Servina Clients with Passion and Professionalism"

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021309  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F\_W

Sample ID <b>MB-R111397</b>	SampType: <b>MBLK</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463885</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	ND	0.050			
Sample ID <b>LCS-R111397</b>	SampType: <b>LCS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463886</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	0.459	0.050	0.5000	0	91.8
LowLimit	85	HighLimit	115		
Sample ID <b>N021309-001EDUP</b>	SampType: <b>DUP</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463888</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	2.933	0.25			2.646
					10.3
					20
Sample ID <b>N021309-001EMS</b>	SampType: <b>MS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463889</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	5.255	0.25	2.500	2.646	104
LowLimit	75	HighLimit	125		
Sample ID <b>N021309-001EMSD</b>	SampType: <b>MSD</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463890</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	5.466	0.25	2.500	2.646	113
LowLimit	75	HighLimit	125	5.255	3.94
					20

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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 ORELAP/NELAP Cert 4046



# CHAIN OF CUSTODY RECORD

Contact us:

Nevada:

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California:

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P: 562.219.7435 F: 562.219.7436

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Page 1 of 2

Client: Arcadis		Report to: Dan Bush	Bill to: Marty Bloes											EDD Requirement	QA/QC	Sample Receipt Condition				
Address: 1410 Rocky Ridge Dr # 330		Company: Arcadis	Address:											Excel EDD	RTNE	Y N				
Address: Roseville, CA 95661		Email: <a href="mailto:dan.bush@arcadis.com">dan.bush@arcadis.com</a>	Address:											Geotracker	RWQCB	✓ 1. Chilled				
Phone: 916-786-3302		Fax: <i>Scanned</i>	Address: 1410 Rocky Ridge Dr # 330	Email to: <a href="mailto:mbloes@pivox.com">mbloes@pivox.com</a>	P.O. #											Labspec	CalTrans	2. Headspace		
Submitted By: <i>Scanned</i>		Phone: 916-786-3302	Fax: <i>Scanned</i>	Phone: 949-727-1400, ext 200	Fax:											Others	LEVEL III	3. Container Intact		
Signature: <i>Scanned</i>		Date: <i>10/18/16</i>	Sampled By: <i>Sordan Bloes</i>											Specify:	LEVEL IV	4 Seal Present				
			I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for											RWQCB	Regulatory	5 IR number				
Project Name: PG&E Topock - CMP		Signature: <i>Scanned</i>	Date: <i>10/18/16</i>											Global ID:	Specify State:	6. Method of Cooling: <i>IC</i>				
Project Number: RC000753.0801																Sample Temp: <i>4.2, 3.1</i>				
Item No.	Laboratory Work Order No.	Sample ID/Location			Sample Date	Sample Time	Others	Matrix										Courier	Tracking No.	Remarks
		Ground	x	Sediment				250 mL poly	Field QC Cr(VI) FF (E218.5) (NH4)2 SO4, NH4 OH	Dissolved metals (EPA 200.8/200.7) FF, HNO3	Dissolved metals (EPA 200.8) FF, HNO3 As, Mn, Cr, Mo, Ni, Sb, Ba, Be, Cd, Co, Cu, Pb, Ni, Se, Ag, Ti, V, Zn	Dissolved metals (EPA 200.7) FF, HNO3 Na, Al, B, Ca, Fe, Mg, K	Dissolved metals (EPA 245.1) FF, HNO3 Hg	Total metals (SM4301B) HNO3	500mL poly	500mL poly	500mL poly			

1	CW-01D-Q416	X	X	X	Cr(VI) FF (E218.5) (NH4)2 SO4, NH4 OH	Field QC Cr(VI) FF (E218.5) (NH4)2 SO4, NH4 OH	Dissolved metals (EPA 200.8/200.7) FF, HNO3	Dissolved metals (EPA 200.8) FF, HNO3 As, Mn, Cr, Mo, Ni, Sb, Ba, Be, Cd, Co, Cu, Pb, Ni, Se, Ag, Ti, V, Zn	Dissolved metals (EPA 200.7) FF, HNO3 Na, Al, B, Ca, Fe, Mg, K	Total metals (SM4301B) HNO3	500mL poly	500mL poly	500mL poly	500mL poly	1 liter poly					
2	CW-01M-Q416	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	CW-02D-Q416	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	MW-901-Q416	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	N021309 - 01	CW-02M-Q416	10/18/16 1539	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	- 02	CW-03D-Q416	10/18/16 1333	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	- 03	CW-03M-Q416	10/18/16 1427	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	- 04	CW-04D-Q416	10/18/16 0920	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	- 05	CW-04M-Q416	10/18/16 0948	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	- 06	OW-01D-Q416	10/18/16 1229	X	X															
11	- 07	MW-902-Q416	10/18/16 1239	X	X															
12	- 08	OW-01M-Q416	10/18/16 1143	X	X															
13	- 09	OW-01S-Q416	10/18/16 1059	X	X															
14		OW-02D-Q416		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15		OW-02M-Q416		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Relinquished by (Signature and Printed Name): <i>Sordan Bloes 10/18/16</i>	Date/Time: <i>10/18/16 10:53</i>	Relinquished by (Signature and Printed Name): <i>Marc Martin 10/18/16</i>	Date/Time: <i>10/18/16 11:15</i>	Turn Around Time (TAT): <i>20/18/16</i>	Special Instruction:
Relinquished by (Signature and Printed Name): <i>Scanned 10/18/16 Q1928</i>	Date/Time: <i>10/18/16 10:53</i>	Relinquished by (Signature and Printed Name): <i>Jordan</i>	Date/Time: <i>10/18/16 09:08</i>		
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:		

- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Terms:  
 1. All samples will be displayed in 45 days and records will be destroyed in 5 years upon submission of final report.  
 2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.  
 3. Terms are valid 30 days.  
 4. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.  
 5. Custom EDD formats can be an additional 3% of the total project price.  
 6. For subcontract analysis, TAT and Rushcharges will vary.  
 7. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. (Surcharge applied on total project price)

Preservatives:	H=HCl	N=NHO <sub>3</sub>	S=S <sub>2</sub> O <sub>8</sub> <sup>2-</sup>	C=4°C	T=Tube	V=VOA	P=Pint
	Z=Zn(AC) <sub>2</sub>	O=NaOH	T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	J=Jar	B=Tedlar	G=Glass	
Others/Specify:	E=(NH4)2SO <sub>4</sub> /NH4OH			M=Metal	M=Metal	C=Can	

**CHAIN OF CUSTODY RECORD**

Page

2 of 2

Contact us:

Nevada:

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11060 Artesia Blvd., Ste C, Cerritos, CA 90703

P: 562.219.7435

F: 562.219.7436

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Client: Arcadis		Report to: Dan Bush		Bill to: Marty Bloes		EDD Requirement		QA/QC		Sample Receipt Condition																													
Address: 1410 Rocky Ridge Dr # 330		Company: Arcadis		Address:		Excel EDD		RTNE		Y N																													
Address: Roseville, CA 95661		Email: <a href="mailto:cmbloes@pivot.com">cmbloes@pivot.com</a>		Address:		Geotracker		RWQCB		✓																													
Phone: 916-786-3302	Fax	Address: 1410 Rocky Ridge Dr # 330		Email to: <a href="mailto:cmbloes@pivot.com">cmbloes@pivot.com</a>		Labspec		CalTrans																															
Submitted By: <i>Susan Blaes</i>		Title: <i>Susan Blaes</i>		Phone: 916-786-3302		Others		Others		✓																													
Signature: <i>S. Blaes</i>		Date: <i>10/18/16</i>	Sampled By: <i>Susan Blaes</i>		Matrix		Specify:		LEVEL III		3 Container Intact																												
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for prosecution.				Ground	x Sediment	250 mL poly	Specify:		LEVEL IV		4 Seal Present																												
Project Name: PG&E Topock - CMP		Signature: <i>S. Blaes</i>	Date: <i>10/18/16</i>	Potable	Soil	500mL poly	Specify:		Regulatory		5 IR number																												
Project Number: RC000753.0801				NPDES	Other Solid	500mL poly	Global ID:		Specify State:		6 Method of Cooling <i>ICE</i>																												
				Surface		500mL poly	Phone: 949-727-1400, ext 200		Fax		Sample Temp: <i>41-23.1</i>																												
												Counter:																											
												Tracking No.:																											
Item No.	Laboratory Work Order No.	Sample ID/Location			Sample Date	Sample Time	Others	Turn Around Time (TAT)				Remarks																											
1	MW-903-Q416							A < 24 Hrs or Same Day TAT																															
2	QW-023-Q416							B = Next Workday																															
3	QW-05D-Q416							C = 2 Workdays																															
4	QW-05M-Q416							D = 3 Workdays																															
5	QW-05S-Q416							X = Routine 5-7 Workdays																															
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9																																							
10																																							
11																																							
12																																							
13	N021309 - 10	MW-701-Q416			10/18/16	1630	X	E 1 P B																															
14		MW-702-Q416					X	E 1 P R added																															
15		MW-703-Q416					X	E 1 P R rmv																															
Relinquished by (Signature and Printed Name): <i>Susan Blaes 10/18/16 PM</i>		Date/Time: <i>10/18/16 1630</i>		Relinquished by (Signature and Printed Name): <i>Mark Maccarone 10/18/16 1715</i>		Date/Time: <i>10/18/16 1715</i>		Turn Around Time (TAT)				Special Instruction:																											
Relinquished by (Signature and Printed Name): <i>Susan Blaes 10/18/16 PM</i>		Date/Time: <i>10/18/16 1630</i>		Relinquished by (Signature and Printed Name): <i>Mark Maccarone 10/18/16 1715</i>		Date/Time: <i>10/18/16 1715</i>		<table border="1"> <tr> <td>A</td> <td>&lt; 24 Hrs or Same Day TAT</td> </tr> <tr> <td>B</td> <td>= Next Workday</td> </tr> <tr> <td>C</td> <td>= 2 Workdays</td> </tr> <tr> <td>D</td> <td>= 3 Workdays</td> </tr> <tr> <td>X</td> <td>= Routine 5-7 Workdays</td> </tr> </table>				A	< 24 Hrs or Same Day TAT	B	= Next Workday	C	= 2 Workdays	D	= 3 Workdays	X	= Routine 5-7 Workdays																		
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Preservatives:		Container Type:																																					
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<p>Terms:</p> <ul style="list-style-type: none"> <li>1. All samples will be dissolved in 45 days and records will be destroyed in 5 years upon submission of final report.</li> <li>2. Regular TAT is 5-7 business days. Surcharge will apply for rush analysis.</li> <li>3. Less than 24 Hrs = 200%, Med Days = 100%, 2 Workdays = 25%, 3 Workdays = 20%, 4 Workdays = 20%</li> <li>4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.</li> </ul>																																							

## ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 10/18/2016 Workorder: N021309  
Rep sample Temp (Deg C): 4.2/3.1 IR Gun ID: 1  
Temp Blank:  Yes  No  
Carrier name: ASSET  
Last 4 digits of Tracking No.: NA Packing Material Used: None  
Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

### Sample Receipt Checklist

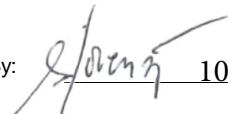
1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
16. Were there Non-Conformance issues at login? Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	

Comments:

For:

Checklist Completed By: HG 10/19/2016

Reviewed By: 10/20/2016



# ASSET Laboratories

## WORK ORDER Summary

19-Oct-16

**WorkOrder:** N021309

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/18/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-001A	CW-02M-Q416	10/18/2016 3:37:00 PM	11/1/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-001B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-001C			11/1/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-001D			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-001E			11/1/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-001F			11/1/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

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## WORK ORDER Summary

19-Oct-16

**WorkOrder:** N021309

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/18/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-002A	CW-03D-Q416	10/18/2016 1:33:00 PM	11/1/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-002B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-002C			11/1/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-002D			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-002E			11/1/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-002F			11/1/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

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**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-003A	CW-03M-Q416	10/18/2016 2:27:00 PM	11/1/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-003B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-003C			11/1/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-003D			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-003E			11/1/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-003F			11/1/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

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**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-004A	CW-04D-Q416	10/18/2016 9:03:00 AM	11/1/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-004B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-004C			11/1/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-004D			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-004E			11/1/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-004F			11/1/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

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**Date Received:** 10/18/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-005A	CW-04M-Q416	10/18/2016 9:48:00 AM	11/1/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-005B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-005C			11/1/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-005D			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-005E			11/1/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-005F			11/1/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

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19-Oct-16

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**Client ID:** ARCUS02

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**Date Received:** 10/18/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-006A	OW-01D-Q416	10/18/2016 12:29:00 PM	11/1/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-006B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-006C			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-006D			11/1/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-007A	MW-902-Q416	10/18/2016 12:39:00 PM	11/1/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-007B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-007C			11/1/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR

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**Date Received:** 10/18/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-007C	MW-902-Q416	10/18/2016 12:39:00 PM	11/1/2016	Groundwater		Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-007D			11/1/2016	SM4500-NO3F		NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-008A	OW-01M-Q416	10/18/2016 11:45:00 AM	11/1/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-008B			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016	EPA 200.7		DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016	EPA 200.8		DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016			DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-008C			11/1/2016	EPA 120.1		SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016	EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016			ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-008D			11/1/2016	SM4500-NO3F		NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-009A	OW-01S-Q416	10/18/2016 10:59:00 AM	11/1/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

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WorkOrder: N021309

Client ID: ARCUS02

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QC Level: Level IV

Date Received: 10/18/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021309-009B	OW-01S-Q416	10/18/2016 10:59:00 AM	11/1/2016	Groundwater	AQPREP TOTAL METALS: ICP, FLAA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		AQPREP TOTAL METALS: ICP, FLAA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-009C		11/1/2016	11/1/2016	EPA 120.1	SPECIFIC CONDUCTANCE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		Total Dissolved Solids Prep		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/1/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021309-009D		11/1/2016	11/1/2016	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/1/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021309-010A	MW-701-Q416	10/18/2016 4:30:00 PM	11/1/2016	EDD	RWQCB		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/1/2016		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB

**ASSET Laboratories**

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**

Truesdail  
3337 Michelson Drive, Suite CN750  
Irvine, CA 92612

TEL: (714) 730-6239  
FAX: (714) 730-6462  
Acct #:

Field Sampler: SIGNED

**19-Oct-16**

<b>Requested Tests</b>					
Sample ID	Matrix	Date Collected	Bottle Type	SM4500-NH3D	
N021309-001F / CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	32OZP	1	
N021309-002F / CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	32OZP	1	
N021309-003F / CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	32OZP	1	
N021309-004F / CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	32OZP	1	
N021309-005F / CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	32OZP	1	

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

Please use PO#:N21309A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia as Nitrogen by SM4500-NH3D.

<b>Date/Time</b>	GSO #: 533701160	<b>Date/Time</b>
Relinquished by: <u>YR</u>	10/19/2016	17:00
Received by: _____	_____	_____
Relinquished by: _____	_____	_____
Received by: _____	_____	_____

November 04, 2016

Dan Bush  
ARCADIS U.S., Inc. - California  
1410 Rocky Ridge Dr #330  
Roseville, CA 95661

TEL: (916) 786-3302  
FAX:

Workorder No.: N021324

RE: PG&E Topock - CMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 19, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

*Nancy Lutucava*

Puri Romualdo  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021324

**CASE NARRATIVE****SAMPLE RECEIVING/GENERAL COMMENTS**

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

**Subcontracted Analyses:**

Ammonia was subcontracted to Truesdail-Irvine,CA.

**Analytical Comments for EPA 200.7\_Dissolved:**

Matrix Spike Duplicate (MSD) is outside recovery criteria for Calcium on QC sample N021309-001B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Iron on QC sample N021324-002B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N021309-002B-MS2, N021309-002B-MSD2 and N021324-003B-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

**Analytical Comments for EPA 200.8\_Dissolved:**

Dilution was necessary on some analytes for all samples and QC samples N021309-001B-MS, N021309-001B-MSD and N021324-002B-MS due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples and QC samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.



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---

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021324

## CASE NARRATIVE

---

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Lead on QC samples N021309-001B-MS, N021309-001B-MSD and N021324-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



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# ASSET Laboratories

Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021324

## Work Order Sample Summary

**Contract No:**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N021324-001A	CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	10/19/2016	11/4/2016
N021324-001B	CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	10/19/2016	11/4/2016
N021324-001C	CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	10/19/2016	11/4/2016
N021324-001D	CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	10/19/2016	11/4/2016
N021324-001E	CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	10/19/2016	11/4/2016
N021324-001F	CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	10/19/2016	11/4/2016
N021324-002A	CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	10/19/2016	11/4/2016
N021324-002B	CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	10/19/2016	11/4/2016
N021324-002C	CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	10/19/2016	11/4/2016
N021324-002D	CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	10/19/2016	11/4/2016
N021324-002E	CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	10/19/2016	11/4/2016
N021324-002F	CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	10/19/2016	11/4/2016
N021324-003A	CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	10/19/2016	11/4/2016
N021324-003B	CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	10/19/2016	11/4/2016
N021324-003C	CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	10/19/2016	11/4/2016
N021324-003D	CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	10/19/2016	11/4/2016
N021324-003E	CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	10/19/2016	11/4/2016
N021324-003F	CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	10/19/2016	11/4/2016
N021324-004A	MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	10/19/2016	11/4/2016
N021324-004B	MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	10/19/2016	11/4/2016
N021324-004C	MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	10/19/2016	11/4/2016
N021324-004D	MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	10/19/2016	11/4/2016
N021324-004E	MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	10/19/2016	11/4/2016
N021324-004F	MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	10/19/2016	11/4/2016
N021324-005A	OW-02S-Q416	Groundwater	10/19/2016 2:33:00 PM	10/19/2016	11/4/2016
N021324-005B	OW-02S-Q416	Groundwater	10/19/2016 2:33:00 PM	10/19/2016	11/4/2016
N021324-005C	OW-02S-Q416	Groundwater	10/19/2016 2:33:00 PM	10/19/2016	11/4/2016
N021324-005D	OW-02S-Q416	Groundwater	10/19/2016 2:33:00 PM	10/19/2016	11/4/2016
N021324-006A	OW-05D-Q416	Groundwater	10/19/2016 10:52:00 AM	10/19/2016	11/4/2016



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021324

## Work Order Sample Summary

**Contract No:**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N021324-006B	OW-05D-Q416	Groundwater	10/19/2016 10:52:00 AM	10/19/2016	11/4/2016
N021324-006C	OW-05D-Q416	Groundwater	10/19/2016 10:52:00 AM	10/19/2016	11/4/2016
N021324-006D	OW-05D-Q416	Groundwater	10/19/2016 10:52:00 AM	10/19/2016	11/4/2016
N021324-007A	OW-05M-Q416	Groundwater	10/19/2016 11:53:00 AM	10/19/2016	11/4/2016
N021324-007B	OW-05M-Q416	Groundwater	10/19/2016 11:53:00 AM	10/19/2016	11/4/2016
N021324-007C	OW-05M-Q416	Groundwater	10/19/2016 11:53:00 AM	10/19/2016	11/4/2016
N021324-007D	OW-05M-Q416	Groundwater	10/19/2016 11:53:00 AM	10/19/2016	11/4/2016
N021324-008A	OW-05S-Q416	Groundwater	10/19/2016 1:10:00 PM	10/19/2016	11/4/2016
N021324-008B	OW-05S-Q416	Groundwater	10/19/2016 1:10:00 PM	10/19/2016	11/4/2016
N021324-008C	OW-05S-Q416	Groundwater	10/19/2016 1:10:00 PM	10/19/2016	11/4/2016
N021324-008D	OW-05S-Q416	Groundwater	10/19/2016 1:10:00 PM	10/19/2016	11/4/2016
N021324-009A	MW-702-Q416	Groundwater	10/19/2016 3:15:00 PM	10/19/2016	11/4/2016



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	7100	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	7100	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	7700	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	7200	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	2600	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	6800	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	6900	0.10	umhos/cm
		0.10	1 10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**ASSET LABORATORIES**  
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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161020F	QC Batch: R111223	PrepDate	Analyst: LR
Specific Conductance	4600	0.10	umhos/cm
		0.10	1
			10/20/2016 10:10 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1\_WPGE

Sample ID	N021324-003DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	111223
Client ID:	ZZZZZZ	Batch ID:	R111223	TestNo:	EPA 120.1			Analysis Date:	10/20/2016	SeqNo:	2455773
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPD Limit Qual
Specific Conductance		7710.000	0.10					7680	0.390	10	

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4400	50	50	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	1500	20	20	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161025B	QC Batch: 60080			PrepDate	10/25/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3500	33	33	mg/L	1	10/25/2016 01:15 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Sample ID <b>LCS-60080</b>	SampType: <b>LCS</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/25/2016</b>	RunNo: <b>111307</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60080</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/25/2016</b>	SeqNo: <b>2458908</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	968.000	10	1000	0	96.8
				80	120
Sample ID <b>MBLK-60080</b>	SampType: <b>MBLK</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/25/2016</b>	RunNo: <b>111307</b>
Client ID: <b>PBW</b>	Batch ID: <b>60080</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/25/2016</b>	SeqNo: <b>2458909</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	ND	10			
Sample ID <b>N021324-003DDUP</b>	SampType: <b>DUP</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/25/2016</b>	RunNo: <b>111307</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60080</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/25/2016</b>	SeqNo: <b>2458914</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	4260.000	50			
				4165	2.26
					5

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 01:55 PM
Boron	1100	38	100	µg/L	1	10/29/2016 01:55 PM
Calcium	150000	28	500	µg/L	1	10/29/2016 01:55 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 01:55 PM
Magnesium	16000	4.4	100	µg/L	1	10/29/2016 01:55 PM
Potassium	13000	360	2500	µg/L	5	10/25/2016 10:03 AM
Sodium	1400000	580	25000	µg/L	50	10/25/2016 12:21 PM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	ND	1.8	20	ug/L	1	10/27/2016 04:26 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 02:01 PM
Boron	1000	38	100	µg/L	1	10/29/2016 02:01 PM
Calcium	160000	28	500	µg/L	1	10/29/2016 02:01 PM
Iron	46	1.8	20	µg/L	1	10/29/2016 02:01 PM
Magnesium	13000	4.4	100	µg/L	1	10/29/2016 02:01 PM
Potassium	13000	360	2500	µg/L	5	10/25/2016 10:08 AM
Sodium	1300000	580	25000	µg/L	50	10/25/2016 12:24 PM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	620	1.8	20	ug/L	1	10/27/2016 04:32 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 02:13 PM
Boron	1100	38	100	µg/L	1	10/29/2016 02:13 PM
Calcium	90000	28	500	µg/L	1	10/29/2016 02:13 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 02:13 PM
Magnesium	4800	4.4	100	µg/L	1	10/29/2016 02:13 PM
Potassium	11000	360	2500	µg/L	5	10/25/2016 10:13 AM
Sodium	1400000	580	25000	µg/L	50	10/25/2016 12:27 PM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038		PrepDate	10/21/2016	Analyst: CEI	
Iron	ND	1.8	20	ug/L	1	10/27/2016 04:39 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 02:19 PM
Boron	1100	38	100	µg/L	1	10/29/2016 02:19 PM
Calcium	90000	28	500	µg/L	1	10/29/2016 02:19 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 02:19 PM
Magnesium	4900	4.4	100	µg/L	1	10/29/2016 02:19 PM
Potassium	8700	360	2500	µg/L	5	10/25/2016 10:18 AM
Sodium	1500000	580	25000	µg/L	50	10/25/2016 12:45 PM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038		PrepDate	10/21/2016	Analyst: CEI	
Iron	ND	1.8	20	ug/L	1	10/27/2016 04:45 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Sodium	450000	580	25000	µg/L	50	10/25/2016 12:48 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Sodium	1300000	580	25000	µg/L	50	10/25/2016 12:51 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Sodium	1300000	580	25000	µg/L	50	10/25/2016 12:55 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161025A	QC Batch: 60023			PrepDate	10/20/2016	Analyst: CEI
Sodium		550000	580	25000	µg/L	50
						10/25/2016 12:58 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7\_WDPGEPPB

Sample ID	MB-60023	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	PBW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458361
<b>Analyte</b>											
Potassium		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium		ND	500								
Sodium		ND	500								
Sample ID	LCS2-60023	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	LCSW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458362
<b>Analyte</b>											
Potassium	19806.768	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium	19806.768	500	20000	0	99.0	85	115				
Sodium	20395.249	500	20000	0	102	85	115				
Sample ID	N021309-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458390
<b>Analyte</b>											
Potassium	32826.287	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium	32826.287	2500	20000	10650	111	75	125				
Sample ID	N021309-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458391
<b>Analyte</b>											
Sodium	1578399.596	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Sodium	1578399.596	25000	20000	1471000	539	75	125				S
Sample ID	N021309-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458392
<b>Analyte</b>											
Potassium	32962.239	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium	32962.239	2500	20000	10650	112	75	125	32830	0.413	20	

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.7\_WDPGEPPB**

Sample ID	N021309-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458393
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Sodium		1565991.616	25000	20000	1471000	477	75	125	1578000	0.789	20
											S
Sample ID	N021324-003B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458406
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium		33532.370	2500	20000	11240	111	75	125			
Sample ID	N021324-003B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111300
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/25/2016	SeqNo:	2458409
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Sodium		1488149.664	25000	20000	1438000	250	75	125			S
Sample ID	MB-60023	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111358
Client ID:	PBW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462017
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Aluminum		7.787	50								
Boron		ND	100								
Calcium		ND	500								
Iron		5.628	20								
Magnesium		9.710	100								
Sample ID	LCS1-60023	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111358
Client ID:	LCSW	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462018
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Aluminum		10632.243	50	10000	0	106	85	115			

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.7\_WDPGEPPB**

Sample ID <b>LCS1-60023</b>	SampType: <b>LCS</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>LCSW</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462018</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5185.635	100	5000	0	104	85	115				
Calcium	10098.995	500	10000	0	101	85	115				
Iron	111.588	20	100.0	0	112	85	115				
Magnesium	11107.246	100	10000	0	111	85	115				
Sample ID <b>N021309-001B-MS1</b>	SampType: <b>MS</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462022</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	11278.131	50	10000	0	113	75	125				
Boron	6864.675	100	5000	1235	113	75	125				
Calcium	146994.556	500	10000	136400	106	75	125				
Iron	106.810	20	100.0	4.593	102	75	125				
Magnesium	19467.953	100	10000	9758	97.1	75	125				
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462023</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	11232.809	50	10000	0	112	75	125	11280	0.403	20	
Boron	6879.754	100	5000	1235	113	75	125	6865	0.219	20	
Calcium	149692.983	500	10000	136400	133	75	125	147000	1.82	20	S
Iron	108.281	20	100.0	4.593	104	75	125	106.8	1.37	20	
Magnesium	19514.682	100	10000	9758	97.6	75	125	19470	0.240	20	
Sample ID <b>N021324-002B-MS1</b>	SampType: <b>MS</b>	TestCode: <b>200.7_WDPG</b> Units: <b>µg/L</b>			Prep Date: <b>10/20/2016</b>			RunNo: <b>111358</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60023</b>	TestNo: <b>EPA 200.7</b>			Analysis Date: <b>10/29/2016</b>			SeqNo: <b>2462032</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.7\_WDPGEPPB

Sample ID	N021324-002B-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/20/2016	RunNo:	111358	
Client ID:	ZZZZZZ	Batch ID:	60023	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462032	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		11210.995	50	10000	0	112	75	125				
Boron		6608.650	100	5000	1037	111	75	125				
Calcium		168533.833	500	10000	156300	122	75	125				
Iron		114.903	20	100.0	46.05	68.9	75	125			S	
Magnesium		22826.656	100	10000	13290	95.3	75	125				

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_WPGEPPB**

Sample ID <b>MB-60038</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>PBW</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460185</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
		ND	20		
Sample ID <b>LCS-60038</b>	SampType: <b>LCS</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460186</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
		106.280	20	100.0	0
				106	85 115
Sample ID <b>N021309-001C-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460191</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
		1514.600	20	100.0	1390
				124	75 125 1502 0.837 20
Sample ID <b>N021332-002C-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460205</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
		101.634	20	100.0	4.681
				97.0	75 125
Sample ID <b>N021309-001C-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2466758</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
		1501.974	20	100.0	1390
				112	75 125

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.16	2.5	µg/L	5	10/31/2016 03:59 PM
Arsenic		1.1	0.025	0.10	µg/L	1	11/1/2016 07:54 PM
Barium		23	0.35	5.0	µg/L	5	10/31/2016 03:59 PM
Beryllium		ND	0.22	2.5	µg/L	5	10/31/2016 03:59 PM
Cadmium		ND	0.24	2.5	µg/L	5	10/31/2016 03:59 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 03:54 PM
Copper		ND	0.26	1.0	µg/L	1	11/1/2016 07:54 PM
Lead		ND	0.92	25	µg/L	25	10/31/2016 04:05 PM
Manganese		0.87	0.056	0.50	µg/L	1	10/31/2016 03:54 PM
Molybdenum		20	0.97	12	µg/L	25	10/31/2016 04:05 PM
Nickel		ND	0.20	5.0	µg/L	5	10/31/2016 03:59 PM
Selenium		3.8	0.14	2.5	µg/L	5	10/31/2016 03:59 PM
Silver		ND	1.5	12	µg/L	25	10/31/2016 04:05 PM
Thallium		ND	0.74	12	µg/L	25	10/31/2016 04:05 PM
Vanadium		1.9	0.021	1.0	µg/L	1	11/2/2016 10:09 AM
Zinc		ND	1.3	50	µg/L	5	10/31/2016 03:59 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.16	2.5	µg/L	5	10/31/2016 04:16 PM
Arsenic		1.2	0.12	0.50	µg/L	5	10/31/2016 04:16 PM
Barium		87	0.35	5.0	µg/L	5	10/31/2016 04:16 PM
Beryllium		ND	0.22	2.5	µg/L	5	10/31/2016 04:16 PM
Cadmium		ND	0.24	2.5	µg/L	5	10/31/2016 04:16 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 04:11 PM
Copper		ND	0.26	1.0	µg/L	1	11/1/2016 08:05 PM
Lead		ND	0.92	25	µg/L	25	10/31/2016 04:22 PM
Manganese		1.3	0.056	0.50	µg/L	1	10/31/2016 04:11 PM
Molybdenum		17	0.19	2.5	µg/L	5	10/31/2016 04:16 PM
Nickel		ND	0.20	5.0	µg/L	5	10/31/2016 04:16 PM
Selenium		3.6	0.14	2.5	µg/L	5	10/31/2016 04:16 PM
Silver		ND	1.5	12	µg/L	25	10/31/2016 04:22 PM
Thallium		ND	0.74	12	µg/L	25	10/31/2016 04:22 PM
Vanadium		2.1	0.021	1.0	µg/L	1	11/2/2016 10:21 AM
Zinc		ND	1.3	50	µg/L	5	10/31/2016 04:16 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045			PrepDate	10/21/2016	Analyst: CEI
Antimony	ND	0.16	2.5	µg/L	5	10/31/2016 05:17 PM
Arsenic	3.1	0.12	0.50	µg/L	5	10/31/2016 05:17 PM
Barium	16	0.35	5.0	µg/L	5	10/31/2016 05:17 PM
Beryllium	ND	0.22	2.5	µg/L	5	10/31/2016 05:17 PM
Cadmium	ND	0.24	2.5	µg/L	5	10/31/2016 05:17 PM
Cobalt	ND	0.026	0.50	µg/L	1	10/31/2016 05:12 PM
Copper	ND	0.26	1.0	µg/L	1	11/1/2016 08:21 PM
Lead	ND	0.18	5.0	µg/L	5	11/1/2016 08:38 PM
Manganese	1.9	0.056	0.50	µg/L	1	10/31/2016 05:12 PM
Molybdenum	16	0.97	12	µg/L	25	10/31/2016 05:23 PM
Nickel	ND	0.20	5.0	µg/L	5	10/31/2016 05:17 PM
Selenium	3.5	0.028	0.50	µg/L	1	11/1/2016 08:21 PM
Silver	ND	0.30	2.5	µg/L	5	10/31/2016 05:17 PM
Thallium	ND	0.15	2.5	µg/L	5	11/1/2016 08:38 PM
Vanadium	4.1	0.021	1.0	µg/L	1	11/2/2016 10:38 AM
Zinc	ND	1.3	50	µg/L	5	10/31/2016 05:17 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.79	12	µg/L	25	10/31/2016 05:39 PM
Arsenic		3.1	0.12	0.50	µg/L	5	10/31/2016 05:34 PM
Barium		ND	1.7	25	µg/L	25	10/31/2016 05:39 PM
Beryllium		ND	0.22	2.5	µg/L	5	10/31/2016 05:34 PM
Cadmium		ND	1.2	12	µg/L	25	10/31/2016 05:39 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 05:28 PM
Copper		ND	1.3	5.0	µg/L	5	11/1/2016 08:49 PM
Lead		ND	0.18	5.0	µg/L	5	11/1/2016 08:49 PM
Manganese		1.8	0.056	0.50	µg/L	1	10/31/2016 05:28 PM
Molybdenum		15	0.97	12	µg/L	25	10/31/2016 05:39 PM
Nickel		ND	0.20	5.0	µg/L	5	10/31/2016 05:34 PM
Selenium		3.3	0.14	2.5	µg/L	5	10/31/2016 05:34 PM
Silver		ND	1.5	12	µg/L	25	10/31/2016 05:39 PM
Thallium		ND	0.15	2.5	µg/L	5	11/1/2016 08:49 PM
Vanadium		ND	0.11	5.0	µg/L	5	11/2/2016 10:54 AM
Zinc		ND	1.3	50	µg/L	5	10/31/2016 05:34 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	28	0.19	2.5	µg/L	5 10/31/2016 05:51 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	24	0.19	2.5	µg/L	5 10/31/2016 06:13 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161101E	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	24	0.19	2.5	µg/L	5 11/1/2016 08:56 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch: 60045		PrepDate	10/21/2016	Analyst: CEI
Molybdenum	12	0.19	2.5	µg/L	5 10/31/2016 06:35 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_WDISS

Sample ID	<b>MB-60045</b>	SampType:	<b>MBLK</b>	TestCode:	<b>200.8_WDISS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464437</b>
<b>Analyte</b>											
Antimony		Result	ND	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD
Arsenic			ND		0.10						
Barium			ND		1.0						
Beryllium			ND		0.50						
Cadmium			ND		0.50						
Cobalt			ND		0.50						
Copper			ND		1.0						
Lead			ND		1.0						
Manganese			ND		0.50						
Molybdenum			ND		0.50						
Nickel			ND		1.0						
Selenium			ND		0.50						
Silver			ND		0.50						
Thallium			ND		0.50						
Vanadium			ND		1.0						
Zinc			ND		10						

Sample ID	<b>LCS-60045</b>	SampType:	<b>LCS</b>	TestCode:	<b>200.8_WDISS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464438</b>
<b>Analyte</b>											
Antimony		Result	10.439	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD
Arsenic			9.913		0.10	10.00	0	99.1	85	115	
Barium			104.625		1.0	100.0	0	105	85	115	
Beryllium			9.796		0.50	10.00	0	98.0	85	115	
Cadmium			10.372		0.50	10.00	0	104	85	115	
Cobalt			9.560		0.50	10.00	0	95.6	85	115	
Copper			9.786		1.0	10.00	0	97.9	85	115	

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID <b>LCS-60045</b>	SampType: <b>LCS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>LCSW</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464438</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.053	1.0	10.00	0	101	85	115				
Manganese	96.758	0.50	100.0	0	96.8	85	115				
Molybdenum	9.803	0.50	10.00	0	98.0	85	115				
Nickel	9.588	1.0	10.00	0	95.9	85	115				
Selenium	9.399	0.50	10.00	0	94.0	85	115				
Silver	9.874	0.50	10.00	0	98.7	85	115				
Thallium	9.871	0.50	10.00	0	98.7	85	115				
Vanadium	10.185	1.0	10.00	0	102	85	115				
Zinc	100.813	10	100.0	0	101	85	115				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464448</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.738	0.10	10.00	1.973	97.6	75	125				
Cobalt	8.099	0.50	10.00	0	81.0	75	125				
Manganese	88.446	0.50	100.0	1.198	87.2	75	125				
Nickel	9.289	1.0	10.00	0.1368	91.5	75	125				
Selenium	12.277	0.50	10.00	2.683	95.9	75	125				
Vanadium	13.225	1.0	10.00	3.678	95.5	75	125				
Zinc	80.831	10	100.0	0	80.8	75	125				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464449</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.073	2.5	10.00	0.1726	109	75	125				
Barium	174.577	5.0	100.0	66.55	108	75	125				
Beryllium	10.826	2.5	10.00	0	108	75	125				
Cadmium	10.204	2.5	10.00	0	102	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID	<b>N021309-001B-MS</b>	SampType:	MS	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464449</b>
<b>Analyte</b>											
Molybdenum		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	30.228		2.5	10.00	18.03	122	75	125			
Silver		10.275	2.5	10.00	0	103	75	125			

Sample ID	<b>N021309-001B-MS</b>	SampType:	MS	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464450</b>
<b>Analyte</b>											
Lead		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	1.240		25	10.00	0	12.4	75	125			S
Thallium		10.180	12	10.00	0	102	75	125			

Sample ID	<b>N021309-001B-MSD</b>	SampType:	MSD	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464451</b>
<b>Analyte</b>											
Arsenic		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	11.740		0.10	10.00	1.973	97.7	75	125	11.74	0.0220	20
Cobalt		8.207	0.50	10.00	0	82.1	75	125	8.099	1.33	20
Manganese		89.810	0.50	100.0	1.198	88.6	75	125	88.45	1.53	20
Nickel		9.376	1.0	10.00	0.1368	92.4	75	125	9.289	0.935	20
Selenium		11.466	0.50	10.00	2.683	87.8	75	125	12.28	6.83	20
Vanadium		13.490	1.0	10.00	3.678	98.1	75	125	13.22	1.98	20
Zinc		81.628	10	100.0	0	81.6	75	125	80.83	0.982	20

Sample ID	<b>N021309-001B-MSD</b>	SampType:	MSD	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464452</b>
<b>Analyte</b>											
Antimony		10.793	2.5	10.00	0.1726	106	75	125	11.07	2.55	20
Barium		171.110	5.0	100.0	66.55	105	75	125	174.6	2.01	20
Beryllium		10.646	2.5	10.00	0	106	75	125	10.83	1.68	20

**Qualifiers:**

B Analyte detected in the associated Method Blank

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DO Surrogate Diluted Out

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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111410									
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464452									
<b>Analyte</b>																				
Cadmium	9.968	PQL	2.5	SPK value	10.00	SPK Ref Val	0	%REC	99.7	LowLimit	75	HighLimit	125	RPD Ref Val	10.20	%RPD	2.33	RPDLimit	20	Qual
Molybdenum	29.455		2.5		10.00		18.03		114		75		125		30.23		2.59		20	
Silver	10.080		2.5		10.00		0		101		75		125		10.28		1.92		20	
<b>Analyte</b>																				
Lead	1.198	PQL	25	SPK value	10.00	SPK Ref Val	0	%REC	12.0	LowLimit	75	HighLimit	125	RPD Ref Val	1.240	%RPD	0	20	S	
Thallium	10.500		12		10.00		0		105		75		125		10.18		0		20	
<b>Analyte</b>																				
Cobalt	8.383	PQL	0.50	SPK value	10.00	SPK Ref Val	0.03465	%REC	83.5	LowLimit	75	HighLimit	125							
Manganese	88.972		0.50		100.0		1.255		87.7		75		125							
<b>Analyte</b>																				
Antimony	10.869	PQL	2.5	SPK value	10.00	SPK Ref Val	0	%REC	109	LowLimit	75	HighLimit	125							
Arsenic	11.723		0.50		10.00		1.157		106		75		125							
Barium	194.638		5.0		100.0		87.39		107		75		125							
Beryllium	10.614		2.5		10.00		0		106		75		125							
Cadmium	9.766		2.5		10.00		0		97.7		75		125							
Molybdenum	28.675		2.5		10.00		16.63		120		75		125							
Nickel	11.490		5.0		10.00		1.627		98.6		75		125							

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464490</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	12.678	2.5	10.00	3.598	90.8	75	125				
Zinc	90.487	50	100.0	0	90.5	75	125				
Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464491</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.797	25	10.00	0	18.0	75	125				S
Silver	11.213	12	10.00	0	112	75	125				
Thallium	9.546	12	10.00	0	95.5	75	125				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111437</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>11/1/2016</b>			SeqNo: <b>2466004</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.156	1.0	10.00	0	102	75	125				
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111437</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>11/1/2016</b>			SeqNo: <b>2466005</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.170	1.0	10.00	0	102	75	125	10.16	0.137	20	
Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111437</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>11/1/2016</b>			SeqNo: <b>2466011</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.223	1.0	10.00	0	92.2	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_WDISS

Sample ID	N021324-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111455
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	11/2/2016	SeqNo:	2466505
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Vanadium		11.726		1.0	10.00	0.6742	111	75	125		

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB			
Hexavalent Chromium	0.45	0.066	0.20	µg/L	1	10/26/2016 10:11 AM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI		
Chromium	ND	0.019	1.0	µg/L	1	10/31/2016 03:54 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB
Hexavalent Chromium	0.86    0.066	0.20	µg/L
			1    10/26/2016 02:37 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	1.2    0.019	1.0	µg/L	1    10/31/2016 04:11 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB
Hexavalent Chromium	0.33    0.066	0.20	µg/L
		1	10/26/2016 10:51 AM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	ND    0.019	1.0	µg/L	1
				10/31/2016 05:12 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB		
Hexavalent Chromium	0.29    0.066	0.20	µg/L	1	10/26/2016 11:10 AM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI	
Chromium	ND    0.019	1.0	µg/L	1	10/31/2016 05:28 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB
Hexavalent Chromium	17 0.33	1.0	µg/L
		5	10/26/2016 12:25 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	19 0.019	1.0	µg/L	1
				10/31/2016 05:45 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB			
Hexavalent Chromium	0.35	0.066	0.20	µg/L	1	10/26/2016 12:56 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI		
Chromium	ND	0.019	1.0	µg/L	1	10/31/2016 06:07 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB
Hexavalent Chromium	0.50    0.066	0.20	µg/L
		1	10/26/2016 01:15 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	ND    0.019	1.0	µg/L	10/31/2016 06:18 PM
		1		

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB
Hexavalent Chromium	13 0.13	0.40	µg/L
			2 10/26/2016 01:34 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	14 0.019	1.0	µg/L	1 10/31/2016 06:30 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-009

**Client Sample ID:** MW-702-Q416  
**Collection Date:** 10/19/2016 3:15:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026A	QC Batch: R111316	PrepDate	Analyst: RAB
Hexavalent Chromium	ND 0.066	0.20	µg/L
			1 10/26/2016 01:53 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS\_CrPGE

Sample ID	MB-60045	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	PBW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464273
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		ND	1.0								
Sample ID	LCS-60045	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	LCSW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464274
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.711	1.0	10.00	0	97.1	85	115			
Sample ID	N021309-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464284
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.538	1.0	10.00	1.554	89.8	75	125			
Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464287
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.742	1.0	10.00	1.554	91.9	75	125	10.54	1.92	20
Sample ID	N021324-002B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464325
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.215	1.0	10.00	1.204	90.1	75	125			

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	MB-R111316	SampType	MBLK	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316		
Client ID	PBW	Batch ID	R111316	TestNo	EPA 218.6				Analysis Date	10/26/2016	SeqNo	2459366	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND		0.20									
Sample ID	LCS-R111316	SampType	LCS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316		
Client ID	LCSW	Batch ID	R111316	TestNo	EPA 218.6				Analysis Date	10/26/2016	SeqNo	2459367	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.319	0.20	5.000	0		106	90	110				
Sample ID	N021324-001AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316		
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6 <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459369</td>				Analysis Date	10/26/2016	SeqNo	2459369	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.527	0.20	1.000	0.4544		107	90	110				
Sample ID	N021324-002AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316		
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6 <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459370</td>				Analysis Date	10/26/2016	SeqNo	2459370	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.934	0.20	1.000	0.8553		108	90	110				
Sample ID	N021324-003AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316		
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6 <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459372</td>				Analysis Date	10/26/2016	SeqNo	2459372	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.417	0.20	1.000	0.3316		109	90	110				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	N021324-005AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316	
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6				Analysis Date	10/26/2016	SeqNo	2459377
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		43.140	1.0	25.00	17.31	103	90	110				
Sample ID	N021324-005AMSD	SampType	MSD	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316	
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6				Analysis Date	10/26/2016	SeqNo	2459378
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		43.049	1.0	25.00	17.31	103	90	110	43.14	0.211	20	
Sample ID	N021324-006AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316	
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6 <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459380</td>				Analysis Date	10/26/2016	SeqNo	2459380
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.432	0.20	1.000	0.3462	109	90	110				
Sample ID	N021324-007AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316	
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6 <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459382</td>				Analysis Date	10/26/2016	SeqNo	2459382
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.545	0.20	1.000	0.4986	105	90	110				
Sample ID	N021324-008AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111316	
Client ID	ZZZZZZ	Batch ID	R111316	TestNo	EPA 218.6 <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459384</td>				Analysis Date	10/26/2016	SeqNo	2459384
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		23.667	0.40	10.00	12.94	107	90	110				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	N021324-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111316	
Client ID:	ZZZZZZ	Batch ID:	R111316	TestNo:	EPA 218.6			Analysis Date:	10/26/2016	SeqNo:	2459388	
Analyte												
Hexavalent Chromium		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075		0.20	1.000	0	108	90	110				
Sample ID	N021324-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111316	
Client ID:	ZZZZZZ	Batch ID:	R111316	TestNo:	EPA 218.6			Analysis Date:	10/26/2016	SeqNo:	2459390	
Analyte												
Hexavalent Chromium	1.343		0.20	1.000	0.2940	105	90	110				
Sample ID	N021324-008ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111316	
Client ID:	ZZZZZZ	Batch ID:	R111316	TestNo:	EPA 218.6			Analysis Date:	10/26/2016	SeqNo:	2459391	
Analyte												
Hexavalent Chromium	13.122		0.40						12.94	1.41	20	

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.29	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.35	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.30	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.32	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222		PrepDate		Analyst: LR	
Turbidity	1.9	0.10	0.10	NTU	1	10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.34	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.38	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161020E	QC Batch: R111222	PrepDate	Analyst: LR
Turbidity	0.84	0.10	0.10
		NTU	1
			10/20/2016 09:15 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 2130\_W

Sample ID	MB-R111222	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	111222
Client ID:	PBW	Batch ID:	R111222	TestNo:	SM 2130B			Analysis Date:	10/20/2016	SeqNo:	2455760
<b>Analyte</b>											
Turbidity		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Turbidity		ND		0.10							Qual
Sample ID	N021324-005CDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	111222
Client ID:	ZZZZZZ	Batch ID:	R111222	TestNo:	SM 2130B			Analysis Date:	10/20/2016	SeqNo:	2455766
<b>Analyte</b>											
Turbidity		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Turbidity		1.920		0.10						1.860	3.17
											30

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234	PrepDate	Analyst: LR			
Alkalinity, Total (As CaCO <sub>3</sub> )	65	1.2	5.0	mg/L	1	10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234		PrepDate		Analyst: LR
Alkalinity, Total (As CaCO <sub>3</sub> )	77	1.2	5.0	mg/L	1 10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234	PrepDate	Analyst: LR			
Alkalinity, Total (As CaCO <sub>3</sub> )	62	1.2	5.0	mg/L	1	10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234	PrepDate	Analyst: LR			
Alkalinity, Total (As CaCO <sub>3</sub> )	62	1.2	5.0	mg/L	1	10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 2320\_W\_SP

Sample ID <b>LCS-R111234</b>	SampType: <b>LCS</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456007</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	102.876	5.0	100.0	0	103
				85	115
<b>Sample ID MB-R111234</b>					
Client ID: <b>PBW</b>	SampType: <b>MBLK</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456008</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	ND	5.0			
<b>Sample ID N021324-001DDUP</b>					
Client ID: <b>ZZZZZZ</b>	SampType: <b>DUP</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456010</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	64.159	5.0			
				65.27	1.71
					30
<b>Sample ID N021332-001DMS</b>					
Client ID: <b>ZZZZZZ</b>	SampType: <b>MS</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456015</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	172.566	5.0	100.0	73.01	99.6
				75	125
<b>Sample ID N021332-001DMSD</b>					
Client ID: <b>ZZZZZZ</b>	SampType: <b>MSD</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456016</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	173.673	5.0	100.0	73.01	101
				75	125
				172.6	0.639
					20

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:22 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:24 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:27 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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---

**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:30 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1\_WD

Sample ID	MB-60037	SampType:	MBLK	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111225
Client ID:	PBW	Batch ID:	60037	TestNo:	EPA 245.1			Analysis Date:	10/21/2016	SeqNo:	2455792
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		ND	0.20								
Sample ID	LCS-60037	SampType:	LCS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111225
Client ID:	LCSW	Batch ID:	60037	TestNo:	EPA 245.1			Analysis Date:	10/21/2016	SeqNo:	2455793
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		5.140	0.20	5.000	0	103	85	115			
Sample ID	N021309-001B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111225
Client ID:	ZZZZZZ	Batch ID:	60037	TestNo:	EPA 245.1			Analysis Date:	10/21/2016	SeqNo:	2455794
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		4.869	0.20	5.000	0	97.4	75	125			
Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111225
Client ID:	ZZZZZZ	Batch ID:	60037	TestNo:	EPA 245.1			Analysis Date:	10/21/2016	SeqNo:	2455795
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		5.063	0.20	5.000	0	101	75	125	4.869	3.92	20
Sample ID	N021332-002B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111225
Client ID:	ZZZZZZ	Batch ID:	60037	TestNo:	EPA 245.1			Analysis Date:	10/21/2016	SeqNo:	2455810
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		5.257	0.20	5.000	0	105	75	125			

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304			PrepDate		Analyst: RAB
Chloride	2100	9.7	250	mg/L	500	10/25/2016 12:23 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283			PrepDate		Analyst: RAB
Fluoride	2.2	0.087	0.50	mg/L	5	10/24/2016 12:27 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304			PrepDate		Analyst: RAB
Sulfate	480	3.3	25	mg/L	50	10/25/2016 12:38 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2100	9.7	mg/L	500	10/25/2016 12:53 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	2.0	0.087	mg/L	5	10/24/2016 01:13 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	480	3.3	mg/L	50	10/25/2016 01:08 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2100	9.7	mg/L	500	10/25/2016 01:24 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	1.8	0.087	mg/L	5	10/24/2016 01:28 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	490	3.3	mg/L	50	10/25/2016 01:39 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2100	9.7	mg/L	500	10/25/2016 01:54 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	1.8	0.087	mg/L	5	10/24/2016 01:44 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	490	3.3	mg/L	50	10/25/2016 02:10 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	750      3.9	100	mg/L	200	10/25/2016 02:25 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	3.6      0.087	0.50	mg/L	5	10/24/2016 02:01 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	110      1.3	10	mg/L	20	10/25/2016 02:40 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2000	9.7	mg/L	500	10/25/2016 03:29 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	2.3	0.087	mg/L	5	10/24/2016 02:16 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	460	3.3	mg/L	50	10/25/2016 03:44 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304			PrepDate		Analyst: RAB
Chloride	2100	9.7	250	mg/L	500	10/25/2016 04:00 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283			PrepDate		Analyst: RAB
Fluoride	2.3	0.087	0.50	mg/L	5	10/24/2016 02:31 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304			PrepDate		Analyst: RAB
Sulfate	460	3.3	25	mg/L	50	10/25/2016 04:15 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	1400	3.9	mg/L	200	10/25/2016 04:30 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	1.5	0.087	mg/L	5	10/24/2016 03:37 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	270	3.3	mg/L	50	10/25/2016 04:46 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

**ANALYTICAL QC SUMMARY REPORT****TestCode: 300\_W\_CLPGE**

Sample ID	<b>MB-R111304_CL</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_CLP</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458663</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		ND	0.50								
Sample ID	<b>LCS-R111304_CL</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_CLP</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458664</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		1.896	0.50	2.000	0	94.8	90	110			
Sample ID	<b>N021324-005CMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_CLP</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458684</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		1156.160	100	400.0	754.4	100	80	120			
Sample ID	<b>N021324-005CMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_CLP</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458685</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		1159.220	100	400.0	754.4	101	80	120	1156	0.264	20
Sample ID	<b>N021324-002DMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_CLP</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458688</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		3113.550	250	1000	2103	101	80	120			

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_CLPGE

Sample ID	N021322-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304	
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458689	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		532.240	100						526.2	1.15	20	

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 300\_W\_FPGE**

Sample ID <b>MB-R111283_F</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458041</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	ND	0.10			
Sample ID <b>LCS-R111283_F</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458042</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	1.323	0.10	1.250	0	106 90 110
Sample ID <b>N021322-001BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458065</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	1.506	0.50			1.528 1.45 20
Sample ID <b>N021323-002BMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458066</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	8.646	0.50	6.250	2.579	97.1 80 120
Sample ID <b>N021323-002BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458067</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	8.657	0.50	6.250	2.579	97.2 80 120 8.646 0.127 20

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_FPGE

Sample ID	<b>N021324-002DMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_FPG</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111283</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111283</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/24/2016</b>	SeqNo:	<b>2458068</b>	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.104	0.50	6.250	1.995	97.7	80	120				

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 300\_W\_SO4PGE**

Sample ID	<b>MB-R111304_SO4</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458701</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		ND	0.50								
Sample ID	<b>LCS-R111304_SO4</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458702</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		3.949	0.50	4.000	0	98.7	90	110			
Sample ID	<b>N021324-005CMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458726</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		196.990	10	80.00	113.7	104	80	120			
Sample ID	<b>N021324-005CMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458727</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		195.596	10	80.00	113.7	102	80	120	197.0	0.710	20
Sample ID	<b>N021324-002DMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458728</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		679.305	25	200.0	475.8	102	80	120			

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	N021322-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	111304	
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458729	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		2792.820	100						2818	0.880	20	

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-001

**Client Sample ID:** CW-01D-Q416  
**Collection Date:** 10/19/2016 9:13:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.8	0.11	0.25	mg/L	5	10/31/2016

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-002

**Client Sample ID:** CW-01M-Q416  
**Collection Date:** 10/19/2016 9:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.6	0.11	0.25	mg/L	5	10/31/2016

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-003

**Client Sample ID:** CW-02D-Q416  
**Collection Date:** 10/19/2016 8:17:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.8	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-004

**Client Sample ID:** MW-901-Q416  
**Collection Date:** 10/19/2016 8:27:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161031B	QC Batch: R111397	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.8	0.11	0.25	mg/L	5	10/31/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-005

**Client Sample ID:** OW-02S-Q416  
**Collection Date:** 10/19/2016 2:33:00 PM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	3.1	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-006

**Client Sample ID:** OW-05D-Q416  
**Collection Date:** 10/19/2016 10:52:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.5	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-007

**Client Sample ID:** OW-05M-Q416  
**Collection Date:** 10/19/2016 11:53:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.4	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 04-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021324-008

**Client Sample ID:** OW-05S-Q416  
**Collection Date:** 10/19/2016 1:10:00 PM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.9	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F\_W

Sample ID <b>MB-R111397</b>	SampType: <b>MBLK</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463885</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	ND	0.050			
Sample ID <b>LCS-R111397</b>	SampType: <b>LCS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463886</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	0.459	0.050	0.5000	0	91.8
LowLimit	85	HighLimit	115		
Sample ID <b>N021309-001EDUP</b>	SampType: <b>DUP</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463888</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	2.933	0.25			2.646
					10.3
					20
Sample ID <b>N021309-001EMS</b>	SampType: <b>MS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463889</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	5.255	0.25	2.500	2.646	104
LowLimit	75	HighLimit	125		
Sample ID <b>N021309-001EMSD</b>	SampType: <b>MSD</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111397</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111397</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>10/31/2016</b>	SeqNo: <b>2463890</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	5.466	0.25	2.500	2.646	113
LowLimit	75	HighLimit	125	5.255	3.94
					20

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021324  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 4500N03F\_W**

Sample ID <b>MB-R111464</b>	SampType: <b>MBLK</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467126</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	ND	0.050			
Sample ID <b>LCS-R111464</b>	SampType: <b>LCS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467127</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	0.529	0.050	0.5000	0	106
Nitrate/Nitrite as N	2.918	0.50			3.055
Sample ID <b>N021324-005DDUP</b>	SampType: <b>DUP</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467129</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	7.527	0.50	5.000	3.055	89.4
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	101
Sample ID <b>N021324-005DMS</b>	SampType: <b>MS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467130</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	7.527	0.50	5.000	3.055	75
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	125
Sample ID <b>N021324-005DMSD</b>	SampType: <b>MSD</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467131</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	101
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	75
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	125
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	7.527
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	7.25
Nitrate/Nitrite as N	8.093	0.50	5.000	3.055	20

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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# CHAIN OF CUSTODY RECORD

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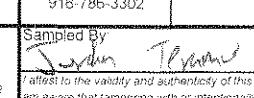
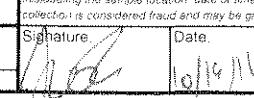
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California:

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Client: Arcadis		Report to: Dan Bush	Bill to: Marty Bloes										
Address: 1410 Rocky Ridge Dr # 330		Company: Arcadis	Address: <span style="border: 1px solid black; padding: 2px;"> </span>										
Address: Roseville, CA 95661		Email: <a href="mailto:dan.bush@arcadis.com">dan.bush@arcadis.com</a> <a href="mailto:arcadis@arctechgroup.com">arcadis@arctechgroup.com</a>	Address: <span style="border: 1px solid black; padding: 2px;"> </span>										
Phone: 916-786-3302	Fax: <span style="border: 1px solid black; padding: 2px;"> </span>	Address: 1410 Rocky Ridge Dr # 330	Email to: <a href="mailto:mbloes@pivox.com">mbloes@pivox.com</a>	P.O. #									
Submitted By: <span style="border: 1px solid black; padding: 2px;"> </span>		Phone: 916-786-3302	Fax: <span style="border: 1px solid black; padding: 2px;"> </span>	Phone: 949-727-1400, ext 200	Fax: <span style="border: 1px solid black; padding: 2px;"> </span>								
Signature: 		Date: 10/19/16	Sampled By: 	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location date or time of collection is considered fraud and may be grounds for		EDD Requirement		QA/QC		Sample Receipt Condition			
Project Name: PG&E Topock - CMP		Signature: 	Date: 10/19/16	Cr(V) F <sup>-</sup> Fe <sup>2+</sup> NH <sub>4</sub> <sup>+</sup> OH <sup>-</sup> SO <sub>4</sub> <sup>2-</sup> NO <sub>3</sub> <sup>-</sup> Cl <sup>-</sup> Cr(IV) Cr(VI) FF IE21B(6) (NH4)2 SO <sub>4</sub> NH <sub>4</sub> OH <sup>-</sup> Field QC Cr(VI) FF IE21B(6) (NH4)2 SO <sub>4</sub> NH <sub>4</sub> OH <sup>-</sup> Dissolved metals (EPA 200.8/200.7) FF HNO <sub>3</sub> Dissolved metals (EPA 200.8) FF, HNO <sub>3</sub> As, Mn, Cr, Mo, Na Dissolved metals (EPA 200.8) FF, HNO <sub>3</sub> As, Mn, Cr, Mo, Na, Pb, Ni, Cu, Cd, Co, Se, Ag, Tl, V, Zn Dissolved metals (EPA 200.7) FF, HNO <sub>3</sub> Na, Al, B, Ca, Fe, Mg, K Dissolved metals (EPA 245.1) FF, HNO <sub>3</sub> Hg Dissolved metals (EPA 245.1) FF, HNO <sub>3</sub> Hg Total metals (SM6010B) HNO <sub>3</sub> Fe Anions (E350.0) Chloride, Fluoride, Sulfate Specific Conductance (E120.1)		Excel EDD	RTNE	Y	N				
Project Number: RC000753.0801				Poly. Sediment		Geotracker	RWQCB	✓	1. Chilled				
				Soil		Labspec	CalTrans	✓	2. Headspace				
				Other Solid		Others	LEVEL III	✓	3. Container intact				
				Water		Specify	LEVEL IV	✓	4. Seal Present				
						RWQCB	Regulatory	✓	5. IR number				
						Global ID	Specify State	✓	6. Method of Cooling:				
									1 CE				
									Sample Temp: <span style="border: 1px solid black; padding: 2px;"> </span>				
									Courier: <span style="border: 1px solid black; padding: 2px;"> </span>				
									Tracking No: <span style="border: 1px solid black; padding: 2px;"> </span>				
Item No.	Laboratory Work Order No.	Sample ID/Location				Sample Date	Sample Time	Others	Remarks				
1	N021324-01	CW-01D-Q416				10/19/16 0913	X	Cr(V) F <sup>-</sup> Fe <sup>2+</sup> NH <sub>4</sub> <sup>+</sup> OH <sup>-</sup> SO <sub>4</sub> <sup>2-</sup> NO <sub>3</sub> <sup>-</sup> Cl <sup>-</sup> Cr(IV) Cr(VI) FF IE21B(6) (NH4)2 SO <sub>4</sub> NH <sub>4</sub> OH <sup>-</sup> Field QC Cr(VI) FF IE21B(6) (NH4)2 SO <sub>4</sub> NH <sub>4</sub> OH <sup>-</sup> Dissolved metals (EPA 200.8) FF, HNO <sub>3</sub> As, Mn, Cr, Mo, Na Dissolved metals (EPA 200.7) FF, HNO <sub>3</sub> Na, Al, B, Ca, Fe, Mg, K Dissolved metals (EPA 245.1) FF, HNO <sub>3</sub> Hg Dissolved metals (EPA 245.1) FF, HNO <sub>3</sub> Hg Total metals (SM6010B) HNO <sub>3</sub> Fe Anions (E350.0) Chloride, Fluoride, Sulfate Specific Conductance (E120.1)	1 liter poly	1 liter poly	1 liter poly	1 liter poly	
2	- 02	CW-01M-Q416				10/19/16 0952	X	X	X	Turbidity (SM 2130B)	TDS (SM2540C)	Nitrate/Nitrite (SM4500N33) Nitrate, H <sub>2</sub> SO <sub>4</sub>	Nitrate/Nitrite (SM4500N33) Nitrate, H <sub>2</sub> SO <sub>4</sub> , pH<2
3	- 03	CW-02D-Q416				10/19/16 0917	X	X	X	X	X	X	X
4	- 04	MW-901-Q416				10/19/16 0921	X	X	X	X	X	X	X
5	CW-02M-Q416				X	X	X	X	X	X	X	X	
6	CW-03D-Q416				X	X	X	X	X	X	X	X	
7	CW-03M-Q416				X	X	X	X	X	X	X	X	
8	CW-04D-Q416				X	X	X	X	X	X	X	X	
9	CW-04M-Q416				X	X	X	X	X	X	X	X	
10	CW-01D-Q416				X	X	X	X	X	X	X	X	
11	MW-902-Q416				X	X	X	X	X	X	X	X	
12	OW-01M-Q416				X	X	X	X	X	X	X	X	
13	OW-01S-Q416				X	X	X	X	X	X	X	X	
14	OW-02D-Q416				X	X	X	X	X	X	X	X	
15	OW-02M-Q416				X	X	X	X	X	X	X	X	

Relinquished by (Signature and Printed Name):

Date/Time: Relinquished by (Signature and Printed Name): Date/Time:

Relinquished by (Signature and Printed Name): Date/Time: Relinquished by (Signature and Printed Name): Date/Time:

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Relinquished by (Signature and Printed Name): Date/Time: Relinquished by (Signature and Printed Name): Date/Time:

Relinquished by (Signature and Printed Name): Date/Time: Relinquished by (Signature and Printed Name): Date/Time:

- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

#### Preservatives:

H=HCl	N=NHO <sub>3</sub>	S=S <sub>2</sub> O <sub>8</sub> <sup>2-</sup>	C=4°C	T=Tube	V=VOA	P=Plint
Z=Zn(ACl) <sub>2</sub>	O=NaOH	T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		J=Jar	B=Tedlar	G=Glass
Others/Specialty	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CHAIN OF CUSTODY RECORD**

Page

2 of 2

Contact us:

Nevada:

3151 W. Post Road, Las Vegas, NV 89118

P: 702.307.2659 F: 702.307.2691

California:

11060 Artesia Blvd., Ste C, Cerritos, CA 90703

P: 562.219.7435 F: 562.219.7436

[www.assetlaboratories.com](http://www.assetlaboratories.com)

Client: Arcadis		Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition													
Address: 1410 Rocky Ridge Dr # 330		Company: Arcadis	Address:	Excel EDD	RTNE	Y N													
Address: Roseville, CA 95661		Email: <a href="mailto:dan.bush@arcadis.com">dan.bush@arcadis.com</a> <a href="mailto:dan.bush@arcade.com">dan.bush@arcade.com</a>	Address:	Geotracker	RWQCB	✓ 1. Chilled													
Phone: 916-786-3302	Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: <a href="mailto:mbloes@pivox.com">mbloes@pivox.com</a>	P.O. #	Labspec	2. Headspace													
Submitted By:		Phone: 949-727-1400, ext 200	Fax:	Specify:	CalTrans	3. Container Intact													
Title:		Phone: 916-786-3302	Fax:	LEVEL III	LEVEL IV	4. Seal Present													
Signature:		Date: 10/19/16	Sampled By: John Remond	RWQCB	Regulatory	5. IR number													
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling this sample location, date or time of collection is considered fraud and may be grounds for disqualification.																			
Project Name: PG&E Topock - CMP		Signature:	Date: 10/19/16	Specify State:	6. Method of Cooling: 1C														
Project Number: RC000753.0801																			
Item No.	Laboratory Work Order No.	Sample ID/Location		Sample Date	Sample Time	Matrix	Ground	x Sediment	250 mL poly	Portable	Soil	NPDES	Other Solid	Surface	Global ID:	Sample Temp: 4+2/3/1	Courier	Tracking No.:	Remarks
1	MW-903-Q416					Cr(VI) FF (E216.6) NH4 <sub>2</sub> SO <sub>4</sub> NH <sub>4</sub> OH	Field QC Cr(VI) FF (E216.6) NH <sub>4</sub> <sup>+</sup> SO <sub>4</sub> <sup>2-</sup> NH <sub>4</sub> OH												
2	N021324 - 05	OW-025-Q416		10/19/16	14:23	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	Dissolved metals (EPA 200-8/2007) FF HNO <sub>3</sub>	500mL poly											
3	- 06	OW-05D-Q416		10/19/16	10:52	X	Sb, Ba, Be, Cd, Co, Cu, Pb, Ni, Sr, Ag, Tl, V, Zn	500mL poly											
4	- 07	OW-05M-Q416		10/19/16	11:52	X	Na, Al, B, Ca, Fe, Mg, K	500mL poly											
5	- 08	OW-05S-Q416		10/19/16	13:10	X	Dissolved metals (EPA 245.1) FF HNO <sub>3</sub>	500mL poly											
6						X	Hg	1500 mL poly											
7						X	Total metals (SW8010B): HNO <sub>3</sub>												
8						X	Fe												
9						X	Anions (E330.0): Chloride, Fluoride, Sulfate	1 liter poly											
10						X	Specific Conductance (E120.1)	1 liter poly											
11						X	Turbidity (SM 2130B)	1 liter poly											
12						X	TDS (SM2540C)	1 liter poly											
13		MW-701-Q416				X	Alkalinity (Total reported as CaCO <sub>3</sub> ) (SM320B)	1 liter poly											
14		MW-702-Q416		10/19/16	15:04	X	Nitrate/Nitrite (SM4500N03) Nitrate, H <sub>2</sub> SO <sub>4</sub>	125 mL poly											
15		MW-703-Q416				X	Ammonium as Nitrogen (SM 4500-NH3D) H <sub>2</sub> SO <sub>4</sub> , pH<2	1 L Poly											
Relinquished by (Signature and Printed Name):  Date/Time: 10/19/16 14:23		Relinquished by (Signature and Printed Name):  Date/Time: 10/19/16 14:23		Turn Around Time (TAT)		Special Instruction:													
Relinquished by (Signature and Printed Name):  Date/Time: 10/19/16 14:23		Relinquished by (Signature and Printed Name):  Date/Time: 10/19/16 14:23		Relinquished by (Signature and Printed Name):  Date/Time: 10/19/16 14:23		Relinquished by (Signature and Printed Name):  Date/Time: 10/19/16 14:23													
<table border="1"> <tr> <td>A</td> <td>&lt; 24 Hrs or Same Day TAT</td> </tr> <tr> <td>B</td> <td>= Next Workday</td> </tr> <tr> <td>C</td> <td>= 2 Workdays</td> </tr> <tr> <td>D</td> <td>= 3 Workdays</td> </tr> <tr> <td>X</td> <td>= Routine 5-7 Workdays</td> </tr> </table>								A	< 24 Hrs or Same Day TAT	B	= Next Workday	C	= 2 Workdays	D	= 3 Workdays	X	= Routine 5-7 Workdays		
A	< 24 Hrs or Same Day TAT																		
B	= Next Workday																		
C	= 2 Workdays																		
D	= 3 Workdays																		
X	= Routine 5-7 Workdays																		
TAT Starts at 8 AM the following day if samples received after 3:00PM																			

Terms:  
 1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.  
 2. Regular TAT is 5.2 business days. Surcharge will apply for rush analysis.  
 Less than 24 hrs = 200% - Next Day = 100% - 2 Workdays = 50% - 3 Workdays = 35% - 4 Workdays = 20%.  
 3. Custom ETD formats will be an additional 3% of the total project price.  
 4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.

5. Top Blanks and Equipment Blanks are available sample.  
 6. Asset Laboratories is not responsible for samples collected using incorrect methodology.  
 7. Terms are not 30 days.  
 8. All reports are submitted in electronic format. Please inform Asset Laboratories if hard copy of report is needed.  
 9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCl	N=NHO <sub>3</sub>	S=S <sub>2</sub> H <sub>4</sub> SO <sub>4</sub>	C=C <sup>4</sup> C
Z=Zn(AC) <sub>2</sub>	O=NaOH	I=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	J=Jar
Others/Specify: B (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> /NH <sub>4</sub> OH			M=Metal

Container Type:

T=Tube	V=VOA	P=Pint
B=Teflar	G=Glass	
M=Metal	M=Metal	C=Can

## ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 10/19/2016 Workorder: N021324  
Rep sample Temp (Deg C): 4.2/3.1 IR Gun ID: 2  
Temp Blank:  Yes  No  
Carrier name: ASSET  
Last 4 digits of Tracking No.: NA Packing Material Used: None  
Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

### Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
16. Were there Non-Conformance issues at login? Was Client notified?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	

Comments: Samples CW-01D-Q416 and CW-01M-Q416: Collection date is 10/18/16 on COC and 10/19/16 on sample labels.

For:  
Checklist Completed By: MBC  10/20/2016

Reviewed By:  10/20/2106

**Yoandra Rodriguez**

---

**From:** Madsen, Laura [Laura.Madsen@arcadis.com]  
**Sent:** Thursday, October 20, 2016 11:46 AM  
**To:** Marlon B. Cartin  
**Cc:** Fernando Rivera; Hanah Glodoviza; Yoandra Rodriguez  
**Subject:** Re: PG&E Topock - CMP, RC000753.0801 (Asset Labs No. N021324)

Hi Marlon  
The label is correct the sample was collected yesterday.

Sent from my iPhone

On Oct 20, 2016, at 11:46 AM, Marlon B. Cartin <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)> wrote:

Hi Laura,

Please advise on the issue below.

Thanks,

**Marlon B. Cartin**

Project Manager

Nevada: 3151 W. Post Road, Las Vegas, NV 89118

P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

---

**From:** Yoandra Rodriguez [<mailto:yoandra@assetlaboratories.com>]  
**Sent:** Thursday, October 20, 2016 10:38 AM  
**To:** 'Marlon B. Cartin'  
**Cc:** Fernando Rivera; Andreafe. Gallardo; Sonny. Lorenzo; Hanah Glodoviza  
**Subject:** PG&E Topock - CMP, RC000753.0801 (Asset Labs No. N021324)

Hi Marlon,

We found the following collection date discrepancy:

- Samples CW-01D-Q416 and CW-01M-Q416: Collection date is 10/18/16 on COC and 10/19/16 on sample labels.

COC is attached for reference.

Please advise.

Thanks,

**Yoandra Rodriguez**

Sample Control Officer

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

**WorkOrder:** N021324

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/19/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-001A	CW-01D-Q416	10/19/2016 9:13:00 AM	11/2/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-001B			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-001C		11/2/2016		EPA 3010A		AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
		11/2/2016		EPA 6010B		TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-001D		11/2/2016		EPA 120.1		SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM2540C		TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016				Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 2130B		TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 2320 B		ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 1030F1		Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-001E		11/2/2016		SM4500-NO3F		NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-001F		11/2/2016		SM4500-NH3D		AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

**WorkOrder:** N021324

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/19/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-002A	CW-01M-Q416	10/19/2016 9:52:00 AM	11/2/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-002B			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-002C			11/2/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-002D			11/2/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-002E			11/2/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-002F			11/2/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

**WorkOrder:** N021324

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/19/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-003A	CW-02D-Q416	10/19/2016 8:17:00 AM	11/2/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-003B			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-003C			11/2/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-003D			11/2/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-003E			11/2/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-003F			11/2/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

**WorkOrder:** N021324

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/19/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-004A	MW-901-Q416	10/19/2016 8:27:00 AM	11/2/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-004B			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-004C		11/2/2016		EPA 3010A		AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
		11/2/2016		EPA 6010B		TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-004D		11/2/2016		EPA 120.1		SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM2540C		TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016				Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 2130B		TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 2320 B		ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 1030F1		Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-004E		11/2/2016		SM4500-NO3F		NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-004F		11/2/2016		SM4500-NH3D		AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

**WorkOrder:** N021324

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/19/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-005A	OW-02S-Q416	10/19/2016 2:33:00 PM	11/2/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-005B			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-005C		11/2/2016		EPA 120.1	SPECIFIC CONDUCTANCE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM2540C	TOTAL FILTERABLE RESIDUE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016			Total Dissolved Solids Prep		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM 2130B	TURBIDITY		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-005D		11/2/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-006A	OW-05D-Q416	10/19/2016 10:52:00 AM	11/2/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-006B			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-006C		11/2/2016		EPA 120.1	SPECIFIC CONDUCTANCE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
		11/2/2016		SM2540C	TOTAL FILTERABLE RESIDUE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

**WorkOrder:** N021324

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/19/2016

**Comments:**

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-006C	OW-05D-Q416	10/19/2016 10:52:00 AM	11/2/2016	Groundwater		Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-006D			11/2/2016	SM4500-NO3F		NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-007A	OW-05M-Q416	10/19/2016 11:53:00 AM	11/2/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-007B		11/2/2016				AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-007C			11/2/2016	EPA 120.1		SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-007D		11/2/2016		SM4500-NO3F		ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016			ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-007D			11/2/2016	EPA 218.6		NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-008A	OW-05S-Q416	10/19/2016 1:10:00 PM	11/2/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR

# ASSET Laboratories

## WORK ORDER Summary

20-Oct-16

WorkOrder: N021324

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801

QC Level: Level IV

Date Received: 10/19/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021324-008B	OW-05S-Q416	10/19/2016 1:10:00 PM	11/2/2016	Groundwater	AQPREP TOTAL METALS: ICP, FLAA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		AQPREP TOTAL METALS: ICP, FLAA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021324-008C		11/2/2016	11/2/2016	EPA 120.1	SPECIFIC CONDUCTANCE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		Total Dissolved Solids Prep		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/2/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-008D		11/2/2016	11/2/2016	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/2/2016		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-009A	MW-702-Q416	10/19/2016 3:15:00 PM	11/2/2016				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021324-010A	FOLDER		11/2/2016	Folder	Folder		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB

**ASSET Laboratories**

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**

Truesdail  
3337 Michelson Drive, Suite CN750  
Irvine, CA 92612

TEL: (714) 730-6239  
FAX: (714) 730-6462  
Acct #:

Field Sampler: SIGNED

**20-Oct-16**

<b>Requested Tests</b>					
Sample ID	Matrix	Date Collected	Bottle Type	SM4500-NH3D	
N021324-001F / CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	32OZP	1	
N021324-002F / CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	32OZP	1	
N021324-003F / CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	32OZP	1	
N021324-004F / MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	32OZP	1	

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

Please use PO#:N21324A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500-NH3D.

GSO #: 533716119

Relinquished by: _____		Date/Time	Date/Time	Received by: _____
Relinquished by: _____		10/20/2016	17:00	Received by: _____

November 07, 2016

Dan Bush  
ARCADIS U.S., Inc. - California  
1410 Rocky Ridge Dr #330  
Roseville, CA 95661

TEL: (916) 786-3302  
FAX:

Workorder No.: N021332

RE: PG&E Topock - CMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 20, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

*Nancy Romualdo*

Puri Romualdo  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



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EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021332

**CASE NARRATIVE****SAMPLE RECEIVING/GENERAL COMMENTS**

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

**Subcontracted Analyses:**

Ammonia was subcontracted to Truesdail-Irvine,CA.

**Analytical Comments for EPA 200.7\_Dissolved:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N021332-002B-MS2 and N021332-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

**Analytical Comments for EPA 200.8\_Dissolved:**

Dilution was necessary on some analytes for all samples and QC samples N021309-001B-MS, N021309-001B-MSD and N021324-002B-MS due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples and QC samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Lead on QC samples N021309-001B-MS, N021309-001B-MSD and N021324-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



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# ASSET Laboratories

Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab Order:** N021332

## Work Order Sample Summary

**Contract No:**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N021332-001A	MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	10/20/2016	11/7/2016
N021332-001B	MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	10/20/2016	11/7/2016
N021332-001C	MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	10/20/2016	11/7/2016
N021332-001D	MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	10/20/2016	11/7/2016
N021332-001E	MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	10/20/2016	11/7/2016
N021332-001F	MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	10/20/2016	11/7/2016
N021332-002A	OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	10/20/2016	11/7/2016
N021332-002B	OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	10/20/2016	11/7/2016
N021332-002C	OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	10/20/2016	11/7/2016
N021332-002D	OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	10/20/2016	11/7/2016
N021332-002E	OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	10/20/2016	11/7/2016
N021332-002F	OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	10/20/2016	11/7/2016
N021332-003A	OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	10/20/2016	11/7/2016
N021332-003B	OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	10/20/2016	11/7/2016
N021332-003C	OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	10/20/2016	11/7/2016
N021332-003D	OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	10/20/2016	11/7/2016
N021332-003E	OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	10/20/2016	11/7/2016
N021332-003F	OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	10/20/2016	11/7/2016
N021332-004A	MW-703-Q416	Groundwater	10/20/2016 9:10:00 AM	10/20/2016	11/7/2016



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NEVADA | Page 10 of 31 | P:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161021A	QC Batch: R111230	PrepDate	Analyst: LR
Specific Conductance	7100	0.10	umhos/cm
		0.10	1
			10/21/2016 10:45 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161021A	QC Batch: R111230	PrepDate	Analyst: LR
Specific Conductance	7000	0.10	0.10
		umhos/cm	1
			10/21/2016 10:45 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**SPECIFIC CONDUCTANCE****EPA 120.1**

RunID: NV00922-WC_161021A	QC Batch: R111230	PrepDate	Analyst: LR
Specific Conductance	7100	0.10	0.10
		umhos/cm	1
			10/21/2016 10:45 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1\_WPGE

Sample ID	N021332-003DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	111230
Client ID:	ZZZZZZ	Batch ID:	R111230	TestNo:	EPA 120.1			Analysis Date:	10/21/2016	SeqNo:	2455976
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPD Limit Qual
Specific Conductance		7110.000	0.10					7140		0.421	10

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161024D	QC Batch: 60070			PrepDate	10/24/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/24/2016 01:00 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161024D	QC Batch: 60070			PrepDate	10/24/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	10/24/2016 01:00 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: NV00922-WC_161024D	QC Batch: 60070			PrepDate	10/24/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50	mg/L	1	10/24/2016 01:00 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Sample ID <b>LCS-60070</b>	SampType: <b>LCS</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/24/2016</b>	RunNo: <b>111285</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60070</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458116</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	955.000	10	1000	0	95.5
				80	120
Sample ID <b>MB-60070</b>	SampType: <b>MBLK</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/24/2016</b>	RunNo: <b>111285</b>
Client ID: <b>PBW</b>	Batch ID: <b>60070</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458117</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	ND	10			
Sample ID <b>N021332-003DDUP</b>	SampType: <b>DUP</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>10/24/2016</b>	RunNo: <b>111285</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60070</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458121</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Total Dissolved Solids (Residue, Filtera)	3875.000	50		4030	3.92
					5

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161029A	QC Batch: 60117			PrepDate	10/29/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/29/2016 06:05 PM
Boron	1000	38	100	µg/L	1	10/29/2016 06:05 PM
Calcium	140000	28	500	µg/L	1	10/29/2016 06:05 PM
Iron	ND	1.8	20	µg/L	1	10/29/2016 06:05 PM
Magnesium	25000	4.4	100	µg/L	1	10/29/2016 06:05 PM
Potassium	14000	360	2500	µg/L	5	11/1/2016 10:50 AM
Sodium	1400000	580	25000	µg/L	50	11/1/2016 11:05 AM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	27	1.8	20	ug/L	1	10/27/2016 04:50 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161031B	QC Batch: 60117			PrepDate	10/29/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L	1	10/31/2016 12:33 PM
Boron	1000	38	100	µg/L	1	10/31/2016 12:33 PM
Calcium	150000	28	500	µg/L	1	10/31/2016 12:33 PM
Iron	ND	1.8	20	µg/L	1	10/31/2016 12:33 PM
Magnesium	28000	4.4	100	µg/L	1	10/31/2016 12:33 PM
Potassium	14000	360	2500	µg/L	5	11/1/2016 10:55 AM
Sodium	1400000	580	25000	µg/L	50	11/1/2016 11:11 AM

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038			PrepDate	10/21/2016	Analyst: CEI
Iron	ND	1.8	20	ug/L	1	10/27/2016 04:57 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**DISSOLVED METALS BY ICP****EPA 200.7**

RunID: NV00922-ICP2_161031B	QC Batch: 60117	PrepDate	10/29/2016	Analyst: CEI
Aluminum	ND	2.7	50	µg/L
Boron	1100	38	100	µg/L
Calcium	140000	28	500	µg/L
Iron	ND	1.8	20	µg/L
Magnesium	26000	4.4	100	µg/L
Potassium	15000	360	2500	µg/L
Sodium	1400000	580	25000	µg/L

**TOTAL METALS BY ICP****EPA 3010A****EPA 6010B**

RunID: NV00922-ICP2_161027C	QC Batch: 60038	PrepDate	10/21/2016	Analyst: CEI
Iron	20	1.8	20	ug/L

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7\_WDPGEPPB

Sample ID	MB-60117	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111358		
Client ID:	PBW	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462071		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		ND	50										
Boron		ND	100										
Calcium		ND	500										
Iron		ND	20										
Magnesium		14.941	100										

Sample ID	LCS1-60117	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111358		
Client ID:	LCSW	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462072		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		10025.361	50	10000	0	100	85	115					
Boron		4854.232	100	5000	0	97.1	85	115					
Calcium		9200.061	500	10000	0	92.0	85	115					
Iron		103.076	20	100.0	0	103	85	115					
Magnesium		10386.841	100	10000	0	104	85	115					

Sample ID	N021332-001B-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111358		
Client ID:	ZZZZZZ	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462076		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		11173.114	50	10000	0	112	75	125					
Boron		6642.269	100	5000	1033	112	75	125					
Calcium		146784.742	500	10000	136300	105	75	125					
Iron		102.713	20	100.0	3.977	98.7	75	125					
Magnesium		36376.813	100	10000	25460	109	75	125					

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.7\_WDPGEPPB**

Sample ID	N021332-001B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111358	
Client ID:	ZZZZZZ	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	10/29/2016	SeqNo:	2462077	
<hr/>												
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		11186.717	50	10000	0	112	75	125	11170	0.122	20	
Boron		6636.364	100	5000	1033	112	75	125	6642	0.0890	20	
Calcium		144818.659	500	10000	136300	85.4	75	125	146800	1.35	20	
Iron		104.608	20	100.0	3.977	101	75	125	102.7	1.83	20	
Magnesium		36398.453	100	10000	25460	109	75	125	36380	0.0595	20	
<hr/>												
Sample ID	MB-60117	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111400	
Client ID:	PBW	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	11/1/2016	SeqNo:	2463935	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium		ND	500									
Sodium		ND	500									
<hr/>												
Sample ID	LCS2-60117	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111400	
Client ID:	LCSW	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	11/1/2016	SeqNo:	2463936	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium		19721.378	500	20000	0	98.6	85	115				
Sodium		19910.646	500	20000	0	99.6	85	115				
<hr/>												
Sample ID	N021332-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111400	
Client ID:	ZZZZZZ	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	11/1/2016	SeqNo:	2463948	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium		37267.632	2500	20000	14410	114	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.7\_WDPGEPPB

Sample ID	N021332-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111400
Client ID:	ZZZZZZ	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	11/1/2016	SeqNo:	2463949
<hr/>											
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Sodium		1390592.643	25000	20000	1382000	45.0	75	125			S
Sample ID	N021332-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111400
Client ID:	ZZZZZZ	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	11/1/2016	SeqNo:	2463950
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Potassium		37385.646	2500	20000	14410	115	75	125	37270	0.316	20
Sample ID	N021332-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	10/29/2016	RunNo:	111400
Client ID:	ZZZZZZ	Batch ID:	60117	TestNo:	EPA 200.7			Analysis Date:	11/1/2016	SeqNo:	2463951
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Sodium		1388071.879	25000	20000	1382000	32.4	75	125	1391000	0.181	20

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_WPGEPPB**

Sample ID <b>MB-60038</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>PBW</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460185</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
	ND	20			
Sample ID <b>LCS-60038</b>	SampType: <b>LCS</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460186</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
	106.280	20	100.0	0	106
				85	115
Sample ID <b>N021309-001C-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460191</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
	1514.600	20	100.0	1390	124
				75	125
				1502	0.837
					20
Sample ID <b>N021332-002C-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460205</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
	101.634	20	100.0	4.681	97.0
				75	125
Sample ID <b>N021309-001C-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WPGE</b>	Units: <b>ug/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111332</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60038</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3010A</b>	Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2466758</b>
<b>Analyte</b>					
Iron	Result	PQL	SPK value	SPK Ref Val	%REC
	1501.974	20	100.0	1390	112
				75	125

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.16	2.5	µg/L	5	10/31/2016 06:46 PM
Arsenic		2.2	0.12	0.50	µg/L	5	10/31/2016 06:46 PM
Barium		42	0.35	5.0	µg/L	5	10/31/2016 06:46 PM
Beryllium		ND	0.22	2.5	µg/L	5	10/31/2016 06:46 PM
Cadmium		ND	0.24	2.5	µg/L	5	10/31/2016 06:46 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 06:41 PM
Copper		ND	0.26	1.0	µg/L	1	11/1/2016 09:01 PM
Lead		ND	0.037	1.0	µg/L	1	11/1/2016 09:01 PM
Manganese		ND	0.056	0.50	µg/L	1	10/31/2016 06:41 PM
Molybdenum		22	0.97	12	µg/L	25	10/31/2016 06:52 PM
Nickel		ND	0.20	5.0	µg/L	5	10/31/2016 06:46 PM
Selenium		3.4	0.14	2.5	µg/L	5	10/31/2016 06:46 PM
Silver		ND	1.5	12	µg/L	25	10/31/2016 06:52 PM
Thallium		ND	0.030	0.50	µg/L	1	11/1/2016 09:01 PM
Vanadium		2.7	0.021	1.0	µg/L	1	11/2/2016 11:00 AM
Zinc		ND	1.3	50	µg/L	5	10/31/2016 06:46 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161031C	QC Batch:	60045			PrepDate	10/21/2016	Analyst: CEI
Antimony		ND	0.16	2.5	µg/L	5	10/31/2016 07:31 PM
Arsenic		1.8	0.12	0.50	µg/L	5	10/31/2016 07:31 PM
Barium		17	0.070	1.0	µg/L	1	11/1/2016 09:14 PM
Beryllium		ND	1.1	12	µg/L	25	10/31/2016 07:36 PM
Cadmium		ND	0.047	0.50	µg/L	1	11/1/2016 09:14 PM
Cobalt		ND	0.026	0.50	µg/L	1	10/31/2016 06:57 PM
Copper		ND	0.26	1.0	µg/L	1	11/1/2016 09:14 PM
Lead		ND	0.037	1.0	µg/L	1	11/1/2016 09:14 PM
Manganese		ND	0.056	0.50	µg/L	1	10/31/2016 06:57 PM
Molybdenum		21	0.97	12	µg/L	25	10/31/2016 07:36 PM
Nickel		ND	0.20	5.0	µg/L	5	10/31/2016 07:31 PM
Selenium		3.3	0.028	0.50	µg/L	1	11/1/2016 09:14 PM
Silver		ND	0.059	0.50	µg/L	1	11/1/2016 09:14 PM
Thallium		ND	0.030	0.50	µg/L	1	11/1/2016 09:14 PM
Vanadium		ND	0.021	1.0	µg/L	1	11/2/2016 11:06 AM
Zinc		ND	1.3	50	µg/L	5	10/31/2016 07:31 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED METALS BY ICPMS****EPA 200.8**

RunID: NV00922-ICP7_161101E	QC Batch: 60045			PrepDate	10/21/2016	Analyst: CEI
Antimony	ND	0.031	0.50	µg/L	1	11/1/2016 09:25 PM
Arsenic	1.9	0.025	0.10	µg/L	1	11/1/2016 09:25 PM
Barium	37	0.070	1.0	µg/L	1	11/1/2016 09:25 PM
Beryllium	ND	0.22	2.5	µg/L	5	11/1/2016 09:31 PM
Cadmium	ND	0.047	0.50	µg/L	1	11/1/2016 09:25 PM
Cobalt	ND	0.026	0.50	µg/L	1	11/1/2016 09:25 PM
Copper	ND	0.26	1.0	µg/L	1	11/1/2016 09:25 PM
Lead	ND	0.037	1.0	µg/L	1	11/1/2016 09:25 PM
Manganese	ND	0.056	0.50	µg/L	1	11/1/2016 09:25 PM
Molybdenum	23	0.039	0.50	µg/L	1	11/1/2016 09:25 PM
Nickel	ND	0.040	1.0	µg/L	1	11/1/2016 09:25 PM
Selenium	3.5	0.14	2.5	µg/L	5	11/2/2016 04:10 AM
Silver	ND	0.059	0.50	µg/L	1	11/1/2016 09:25 PM
Thallium	ND	0.030	0.50	µg/L	1	11/1/2016 09:25 PM
Vanadium	2.7	0.021	1.0	µg/L	1	11/2/2016 11:28 AM
Zinc	ND	0.27	10	µg/L	1	11/1/2016 09:25 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_WDISS

Sample ID	<b>MB-60045</b>	SampType:	<b>MBLK</b>	TestCode:	<b>200.8_WDISS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464437</b>
<b>Analyte</b>											
Antimony		Result	ND	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD
Arsenic			ND		0.10						
Barium			ND		1.0						
Beryllium			ND		0.50						
Cadmium			ND		0.50						
Cobalt			ND		0.50						
Copper			ND		1.0						
Lead			ND		1.0						
Manganese			ND		0.50						
Molybdenum			ND		0.50						
Nickel			ND		1.0						
Selenium			ND		0.50						
Silver			ND		0.50						
Thallium			ND		0.50						
Vanadium			ND		1.0						
Zinc			ND		10						

Sample ID	<b>LCS-60045</b>	SampType:	<b>LCS</b>	TestCode:	<b>200.8_WDISS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464438</b>
<b>Analyte</b>											
Antimony		Result	10.439	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD
Arsenic			9.913		0.10	10.00	0	99.1	85	115	
Barium			104.625		1.0	100.0	0	105	85	115	
Beryllium			9.796		0.50	10.00	0	98.0	85	115	
Cadmium			10.372		0.50	10.00	0	104	85	115	
Cobalt			9.560		0.50	10.00	0	95.6	85	115	
Copper			9.786		1.0	10.00	0	97.9	85	115	

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID <b>LCS-60045</b>	SampType: <b>LCS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>LCSW</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464438</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.053	1.0	10.00	0	101	85	115				
Manganese	96.758	0.50	100.0	0	96.8	85	115				
Molybdenum	9.803	0.50	10.00	0	98.0	85	115				
Nickel	9.588	1.0	10.00	0	95.9	85	115				
Selenium	9.399	0.50	10.00	0	94.0	85	115				
Silver	9.874	0.50	10.00	0	98.7	85	115				
Thallium	9.871	0.50	10.00	0	98.7	85	115				
Vanadium	10.185	1.0	10.00	0	102	85	115				
Zinc	100.813	10	100.0	0	101	85	115				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464448</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.738	0.10	10.00	1.973	97.6	75	125				
Cobalt	8.099	0.50	10.00	0	81.0	75	125				
Manganese	88.446	0.50	100.0	1.198	87.2	75	125				
Nickel	9.289	1.0	10.00	0.1368	91.5	75	125				
Selenium	12.277	0.50	10.00	2.683	95.9	75	125				
Vanadium	13.225	1.0	10.00	3.678	95.5	75	125				
Zinc	80.831	10	100.0	0	80.8	75	125				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>				Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>		
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>				Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464449</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.073	2.5	10.00	0.1726	109	75	125				
Barium	174.577	5.0	100.0	66.55	108	75	125				
Beryllium	10.826	2.5	10.00	0	108	75	125				
Cadmium	10.204	2.5	10.00	0	102	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID	<b>N021309-001B-MS</b>	SampType:	MS	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464449</b>
<b>Analyte</b>											
Molybdenum		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	30.228		2.5	10.00	18.03	122	75	125			
Silver		10.275	2.5	10.00	0	103	75	125			

Sample ID	<b>N021309-001B-MS</b>	SampType:	MS	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464450</b>
<b>Analyte</b>											
Lead		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	1.240		25	10.00	0	12.4	75	125			S
Thallium		10.180	12	10.00	0	102	75	125			

Sample ID	<b>N021309-001B-MSD</b>	SampType:	MSD	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464451</b>
<b>Analyte</b>											
Arsenic		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
	11.740		0.10	10.00	1.973	97.7	75	125	11.74	0.0220	20
Cobalt		8.207	0.50	10.00	0	82.1	75	125	8.099	1.33	20
Manganese		89.810	0.50	100.0	1.198	88.6	75	125	88.45	1.53	20
Nickel		9.376	1.0	10.00	0.1368	92.4	75	125	9.289	0.935	20
Selenium		11.466	0.50	10.00	2.683	87.8	75	125	12.28	6.83	20
Vanadium		13.490	1.0	10.00	3.678	98.1	75	125	13.22	1.98	20
Zinc		81.628	10	100.0	0	81.6	75	125	80.83	0.982	20

Sample ID	<b>N021309-001B-MSD</b>	SampType:	MSD	TestCode:	<b>200.8_WDISS</b>	Units:	µg/L	Prep Date:	<b>10/21/2016</b>	RunNo:	<b>111410</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>60045</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>10/31/2016</b>	SeqNo:	<b>2464452</b>
<b>Analyte</b>											
Antimony		10.793	2.5	10.00	0.1726	106	75	125	11.07	2.55	20
Barium		171.110	5.0	100.0	66.55	105	75	125	174.6	2.01	20
Beryllium		10.646	2.5	10.00	0	106	75	125	10.83	1.68	20

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111410									
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464452									
<b>Analyte</b>																				
Cadmium	9.968	PQL	2.5	SPK value	10.00	SPK Ref Val	0	%REC	99.7	LowLimit	75	HighLimit	125	RPD Ref Val	10.20	%RPD	2.33	RPDLimit	20	Qual
Molybdenum	29.455		2.5		10.00		18.03		114		75		125		30.23		2.59		20	
Silver	10.080		2.5		10.00		0		101		75		125		10.28		1.92		20	
<b>Analyte</b>																				
Lead	1.198	PQL	25	SPK value	10.00	SPK Ref Val	0	%REC	12.0	LowLimit	75	HighLimit	125	RPD Ref Val	1.240	%RPD	0	20	S	
Thallium	10.500		12		10.00		0		105		75		125		10.18		0		20	
<b>Analyte</b>																				
Cobalt	8.383	PQL	0.50	SPK value	10.00	SPK Ref Val	0.03465	%REC	83.5	LowLimit	75	HighLimit	125							
Manganese	88.972		0.50		100.0		1.255		87.7		75		125							
<b>Analyte</b>																				
Antimony	10.869	PQL	2.5	SPK value	10.00	SPK Ref Val	0	%REC	109	LowLimit	75	HighLimit	125							
Arsenic	11.723		0.50		10.00		1.157		106		75		125							
Barium	194.638		5.0		100.0		87.39		107		75		125							
Beryllium	10.614		2.5		10.00		0		106		75		125							
Cadmium	9.766		2.5		10.00		0		97.7		75		125							
Molybdenum	28.675		2.5		10.00		16.63		120		75		125							
Nickel	11.490		5.0		10.00		1.627		98.6		75		125							

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 200.8\_WDISS**

Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464490</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	12.678	2.5	10.00	3.598	90.8	75	125				
Zinc	90.487	50	100.0	0	90.5	75	125				
Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111410</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>10/31/2016</b>			SeqNo: <b>2464491</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.797	25	10.00	0	18.0	75	125				S
Silver	11.213	12	10.00	0	112	75	125				
Thallium	9.546	12	10.00	0	95.5	75	125				
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111437</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>11/1/2016</b>			SeqNo: <b>2466004</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.156	1.0	10.00	0	102	75	125				
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111437</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>11/1/2016</b>			SeqNo: <b>2466005</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.170	1.0	10.00	0	102	75	125	10.16	0.137	20	
Sample ID <b>N021324-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_WDISS</b> Units: <b>µg/L</b>			Prep Date: <b>10/21/2016</b>			RunNo: <b>111437</b>			
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60045</b>	TestNo: <b>EPA 200.8</b>			Analysis Date: <b>11/1/2016</b>			SeqNo: <b>2466011</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.223	1.0	10.00	0	92.2	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_WDISS

Sample ID	N021324-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111455
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	11/2/2016	SeqNo:	2466505
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Vanadium		11.726		1.0	10.00	0.6742	111	75	125		

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

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H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026B	QC Batch: R111319	PrepDate	Analyst: RAB
Hexavalent Chromium	0.30    0.066	0.20	µg/L
		1	10/26/2016 09:35 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	ND    0.019	1.0	µg/L	10/31/2016 06:41 PM
		1		

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161026B	QC Batch: R111319	PrepDate	Analyst: RAB
Hexavalent Chromium	0.53    0.066	0.20	µg/L
		1	10/26/2016 09:54 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161031B	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	ND    0.019	1.0	µg/L	1
				10/31/2016 06:57 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161027A	QC Batch: R111339	PrepDate	Analyst: RAB
Hexavalent Chromium	0.29    0.066	0.20	µg/L
		1	10/27/2016 12:17 PM

**DISSOLVED METALS BY ICP-MS****EPA 200.8**

RunID: NV00922-ICP7_161101E	QC Batch: 60045	PrepDate	10/21/2016	Analyst: CEI
Chromium	ND    0.019	1.0	µg/L	1
				11/1/2016 09:25 PM

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**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-004

**Client Sample ID:** MW-703-Q416  
**Collection Date:** 10/20/2016 9:10:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**HEXAVALENT CHROMIUM BY IC****EPA 218.6**

RunID: NV00922-IC7_161027A	QC Batch: R111339	PrepDate	Analyst: RAB
Hexavalent Chromium	ND 0.066	0.20	µg/L
			1 10/27/2016 12:45 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS\_CrPGE

Sample ID	MB-60045	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	PBW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464273
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		ND	1.0								
Sample ID	LCS-60045	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	LCSW	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464274
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.711	1.0	10.00	0	97.1	85	115			
Sample ID	N021309-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464284
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.538	1.0	10.00	1.554	89.8	75	125			
Sample ID	N021309-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464287
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.742	1.0	10.00	1.554	91.9	75	125	10.54	1.92	20
Sample ID	N021324-002B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	10/21/2016	RunNo:	111409
Client ID:	ZZZZZZ	Batch ID:	60045	TestNo:	EPA 200.8			Analysis Date:	10/31/2016	SeqNo:	2464325
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		10.215	1.0	10.00	1.204	90.1	75	125			

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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DO Surrogate Diluted Out

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	LCS-R111319	SampType	LCS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111319	
Client ID	LCSW	Batch ID	R111319	TestNo	EPA 218.6			Analysis Date	10/26/2016	SeqNo	2459745	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.133	0.20	5.000	0	103	90	110				
Sample ID	MB-R111319	SampType	MBLK	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111319	
Client ID	PBW	Batch ID	R111319	TestNo	EPA 218.6			Analysis Date	10/26/2016	SeqNo	2459746	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND	0.20									
Sample ID	N021325-001AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111319	
Client ID	ZZZZZZ	Batch ID	R111319	TestNo	EPA 218.6 <th></th> <th></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459748</td>			Analysis Date	10/26/2016	SeqNo	2459748	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		58.565	1.0	25.00	32.66	104	90	110				
Sample ID	N021325-001AMSD	SampType	MSD	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111319	
Client ID	ZZZZZZ	Batch ID	R111319	TestNo	EPA 218.6 <th></th> <th></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459751</td>			Analysis Date	10/26/2016	SeqNo	2459751	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		58.479	1.0	25.00	32.66	103	90	110	58.56	0.148	20	
Sample ID	N021325-002AMS	SampType	MS	TestCode	218.6_WPGE	Units	µg/L	Prep Date		RunNo	111319	
Client ID	ZZZZZZ	Batch ID	R111319	TestNo	EPA 218.6 <th></th> <th></th> <th>Analysis Date</th> <td>10/26/2016</td> <th>SeqNo</th> <td>2459753</td>			Analysis Date	10/26/2016	SeqNo	2459753	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1259.490	20	500.0	754.9	101	90	110				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	N021325-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111319	
Client ID:	ZZZZZZ	Batch ID:	R111319	TestNo:	EPA 218.6			Analysis Date:	10/26/2016	SeqNo:	2459755	
<hr/>												
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium												
		749.150	20				744.3	0.652	20			
<hr/>												
Sample ID	N021332-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111319	
Client ID:	ZZZZZZ	Batch ID:	R111319	TestNo:	EPA 218.6			Analysis Date:	10/26/2016	SeqNo:	2459769	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium												
		1.347	0.20	1.000	0.3019	105	90	110				
<hr/>												
Sample ID	N021332-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111319	
Client ID:	ZZZZZZ	Batch ID:	R111319	TestNo:	EPA 218.6			Analysis Date:	10/26/2016	SeqNo:	2459771	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium												
		1.593	0.20	1.000	0.5302	106	90	110				

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 218.6\_WPGE**

Sample ID <b>MB-R111339</b>	SampType: <b>MBLK</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>111339</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111339</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460636</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	ND	0.20			
Sample ID <b>LCS-R111339</b>	SampType: <b>LCS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>111339</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111339</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460637</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	5.129	0.20	5.000	0	103
				90	110
Sample ID <b>N021332-003AMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>111339</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111339</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460641</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.374	0.20	1.000	0.2892	109
				90	110
Sample ID <b>N021332-004AMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>111339</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111339</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460643</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.081	0.20	1.000	0	108
				90	110
Sample ID <b>N021332-003AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>111339</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111339</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>10/27/2016</b>	SeqNo: <b>2460644</b>
<b>Analyte</b>					
	<b>Result</b>	PQL	SPK value	SPK Ref Val	%REC
Hexavalent Chromium	1.348	0.20	1.000	0.2892	106
				90	110
				1.374	1.92
					20

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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"Servina Clients with Passion and Professionalism"

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WPGE

Sample ID	N021334-005ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	111339	
Client ID:	ZZZZZZ	Batch ID:	R111339	TestNo:	EPA 218.6			Analysis Date:	10/27/2016	SeqNo:	2460655	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.867	0.20						1.885	0.976	20	

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

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S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161021B	QC Batch: R111231		PrepDate		Analyst: LR
Turbidity	0.27	0.10	0.10	NTU	1 10/21/2016 10:17 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161021B	QC Batch: R111231	PrepDate	Analyst: LR
Turbidity	0.27	0.10	0.10
		NTU	1
			10/21/2016 10:17 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**TURBIDITY****SM 2130B**

RunID: NV00922-WC_161021B	QC Batch: R111231	PrepDate	Analyst: LR
Turbidity	0.24	0.10	0.10
	NTU		10/21/2016 10:17 AM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 2130\_W

Sample ID	MB-R111231	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	111231		
Client ID:	PBW	Batch ID:	R111231	TestNo:	SM 2130B				Analysis Date:	10/21/2016	SeqNo:	2455977	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND		0.10									
Sample ID	N021332-001DDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	111231		
Client ID:	ZZZZZZ	Batch ID:	R111231	TestNo:	SM 2130B				Analysis Date:	10/21/2016	SeqNo:	2455979	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		0.290		0.10						0.2700	7.14	30	

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234		PrepDate		Analyst: LR
Alkalinity, Total (As CaCO <sub>3</sub> )	73	1.2	5.0	mg/L	1 10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234		PrepDate		Analyst: LR
Alkalinity, Total (As CaCO <sub>3</sub> )	73	1.2	5.0	mg/L	1 10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ALKALINITY, SPECIATED****SM 2320 B**

RunID: NV00922-WC_161021C	QC Batch: R111234	PrepDate	Analyst: LR
Alkalinity, Total (As CaCO <sub>3</sub> )	73	1.2	5.0
		mg/L	1
			10/21/2016 01:20 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 2320\_W\_SP

Sample ID <b>LCS-R111234</b>	SampType: <b>LCS</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456007</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	102.876	5.0	100.0	0	103
				85	115
<b>Sample ID MB-R111234</b>					
Client ID: <b>PBW</b>	SampType: <b>MBLK</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456008</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	ND	5.0			
<b>Sample ID N021324-001DDUP</b>					
Client ID: <b>ZZZZZZ</b>	SampType: <b>DUP</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456010</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	64.159	5.0			
				65.27	1.71
					30
<b>Sample ID N021332-001DMS</b>					
Client ID: <b>ZZZZZZ</b>	SampType: <b>MS</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456015</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	172.566	5.0	100.0	73.01	99.6
				75	125
<b>Sample ID N021332-001DMSD</b>					
Client ID: <b>ZZZZZZ</b>	SampType: <b>MSD</b>	TestCode: <b>2320_W_SP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111234</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111234</b>	TestNo: <b>SM 2320 B</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2456016</b>
<b>Analyte</b>					
Alkalinity, Total (As CaCO <sub>3</sub> )	Result	PQL	SPK value	SPK Ref Val	%REC
	173.673	5.0	100.0	73.01	101
				75	125
				172.6	0.639
					20

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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"Servina Clients with Passion and Professionalism"

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037		PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1
					10/21/2016 12:33 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037	PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L
			1	10/21/2016 12:35 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE****EPA 245.1**

RunID: NV00922-AA1_161021A	QC Batch: 60037	PrepDate	10/21/2016	Analyst: MG
Mercury	ND	0.087	0.20	µg/L
			1	10/21/2016 12:41 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

**ANALYTICAL QC SUMMARY REPORT****TestCode: 245.1\_WD**

Sample ID <b>MB-60037</b>	SampType: <b>MBLK</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>PBW</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455792</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury					
ND	0.20				
Sample ID <b>LCS-60037</b>	SampType: <b>LCS</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>LCSW</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455793</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
5.140	0.20	5.000	0	103	85 115
Sample ID <b>N021309-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455794</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
4.869	0.20	5.000	0	97.4	75 125
Sample ID <b>N021309-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455795</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
5.063	0.20	5.000	0	101	75 125 4.869 3.92 20
Sample ID <b>N021332-002B-MS</b>	SampType: <b>MS</b>	TestCode: <b>245.1_WD</b>	Units: <b>µg/L</b>	Prep Date: <b>10/21/2016</b>	RunNo: <b>111225</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>60037</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>10/21/2016</b>	SeqNo: <b>2455810</b>
<b>Analyte</b>					
Mercury	Result	PQL	SPK value	SPK Ref Val	%REC
5.257	0.20	5.000	0	105	75 125

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2100	9.7	mg/L	500	10/25/2016 07:49 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	2.3	0.087	mg/L	5	10/24/2016 02:46 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	460	3.3	mg/L	50	10/25/2016 08:05 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2100	9.7	mg/L	500	10/25/2016 08:20 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	2.1	0.087	mg/L	5	10/24/2016 03:02 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	480	3.3	mg/L	50	10/25/2016 08:35 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Chloride	2100	9.7	mg/L	500	10/25/2016 08:50 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161024A	QC Batch: R111283	PrepDate	Analyst: RAB		
Fluoride	2.3	0.087	mg/L	5	10/24/2016 03:22 PM

**ANIONS BY ION CHROMATOGRAPHY****EPA 300.0**

RunID: NV00922-IC8_161025A	QC Batch: R111304	PrepDate	Analyst: RAB		
Sulfate	470	3.3	mg/L	50	10/25/2016 09:36 PM

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_W\_CLPGE

Sample ID	MB-R111304_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304
Client ID:	PBW	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458663
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		ND	0.50								
Sample ID	LCS-R111304_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304
Client ID:	LCSW	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458664
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		1.896	0.50	2.000	0	94.8	90	110			
Sample ID	N021324-005CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458684
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		1156.160	100	400.0	754.4	100	80	120			
Sample ID	N021324-005CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458685
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		1159.220	100	400.0	754.4	101	80	120	1156	0.264	20
Sample ID	N021324-002DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458688
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		3113.550	250	1000	2103	101	80	120			

## Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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 ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_CLPGE

Sample ID	N021322-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	111304	
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458689	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		532.240	100						526.2	1.15	20	

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 300\_W\_FPGE**

Sample ID <b>MB-R111283_F</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458041</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
	ND	0.10			
Sample ID <b>LCS-R111283_F</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458042</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
	1.323	0.10	1.250	0	106
				90	110
Sample ID <b>N021322-001BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458065</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
	1.506	0.50			
				1.528	1.45
					20
Sample ID <b>N021323-002BMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458066</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
	8.646	0.50	6.250	2.579	97.1
				80	120
Sample ID <b>N021323-002BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_FPG</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111283</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111283</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>10/24/2016</b>	SeqNo: <b>2458067</b>
<b>Analyte</b>					
Fluoride	Result	PQL	SPK value	SPK Ref Val	%REC
	8.657	0.50	6.250	2.579	97.2
				80	120
				8.646	0.127
					20

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_FPGE

Sample ID	<b>N021324-002DMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_FPG</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111283</b>	
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111283</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/24/2016</b>	SeqNo:	<b>2458068</b>	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.104	0.50	6.250	1.995	97.7	80	120				

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 300\_W\_SO4PGE**

Sample ID	<b>MB-R111304_SO4</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458701</b>
<b>Analyte</b>											
Sulfate		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		ND	0.50								
Sample ID	<b>LCS-R111304_SO4</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458702</b>
<b>Analyte</b>											
Sulfate		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		3.949	0.50	4.000	0	98.7	90	110			
Sample ID	<b>N021324-005CMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458726</b>
<b>Analyte</b>											
Sulfate		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		196.990	10	80.00	113.7	104	80	120			
Sample ID	<b>N021324-005CMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458727</b>
<b>Analyte</b>											
Sulfate		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		195.596	10	80.00	113.7	102	80	120	197.0	0.710	20
Sample ID	<b>N021324-002DMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>111304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R111304</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>10/25/2016</b>	SeqNo:	<b>2458728</b>
<b>Analyte</b>											
Sulfate		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Sulfate		679.305	25	200.0	475.8	102	80	120			

**Qualifiers:**

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	N021322-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	111304	
Client ID:	ZZZZZZ	Batch ID:	R111304	TestNo:	EPA 300.0			Analysis Date:	10/25/2016	SeqNo:	2458729	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		2792.820	100						2818	0.880	20	

### Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference



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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-001

**Client Sample ID:** MW-903-Q416  
**Collection Date:** 10/20/2016 8:05:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.5	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES**"Servina Clients with Passion and Professionalism"**

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ORELAP/NELAP Cert 4046

**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-002

**Client Sample ID:** OW-02D-Q416  
**Collection Date:** 10/20/2016 8:44:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.0	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

**ASSET LABORATORIES**  
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**ASSET Laboratories****ANALYTICAL RESULTS**

Print Date: 07-Nov-16

**CLIENT:** ARCADIS U.S., Inc. - California  
**Lab Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801  
**Lab ID:** N021332-003

**Client Sample ID:** OW-02M-Q416  
**Collection Date:** 10/20/2016 7:55:00 AM  
**Matrix:** GROUNDWATER

---

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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**NITRATE/NITRITE-N BY CADMIUM REDUCTION****SM4500-NO3F**

RunID: NV00922-WC_161102E	QC Batch: R111464	PrepDate	Analyst: RB			
Nitrate/Nitrite as N	2.6	0.22	0.50	mg/L	10	11/2/2016

---

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out

E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

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**CLIENT:** ARCADIS U.S., Inc. - California  
**Work Order:** N021332  
**Project:** PG&E Topock - CMP, RC000753.0801

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 4500N03F\_W**

Sample ID <b>MB-R111464</b>	SampType: <b>MBLK</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>PBW</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467126</b>
<b>Analyte</b>					
Nitrate/Nitrite as N	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	ND	0.050			
Sample ID <b>LCS-R111464</b>	SampType: <b>LCS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467127</b>
<b>Analyte</b>					
Nitrate/Nitrite as N	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	0.529	0.050	0.5000	0	106 85 115
Sample ID <b>N021324-005DDUP</b>	SampType: <b>DUP</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467129</b>
<b>Analyte</b>					
Nitrate/Nitrite as N	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	2.918	0.50			3.055 4.59 20
Sample ID <b>N021324-005DMS</b>	SampType: <b>MS</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467130</b>
<b>Analyte</b>					
Nitrate/Nitrite as N	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	7.527	0.50	5.000	3.055	89.4 75 125
Sample ID <b>N021324-005DMSD</b>	SampType: <b>MSD</b>	TestCode: <b>4500N03F_W</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>111464</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R111464</b>	TestNo: <b>SM4500-NO3</b>		Analysis Date: <b>11/2/2016</b>	SeqNo: <b>2467131</b>
<b>Analyte</b>					
Nitrate/Nitrite as N	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
	8.093	0.50	5.000	3.055	101 75 125 7.527 7.25 20

**Qualifiers:**

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Calculations are based on raw values



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P: 702.307.2659 F: 702.307.2691

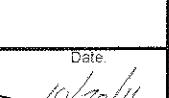
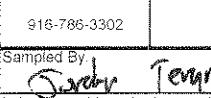
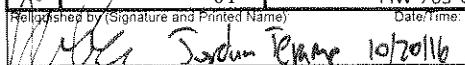
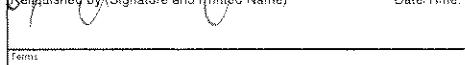
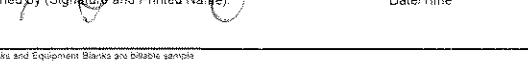
California:

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P: 562.219.7485 F: 562.219.7436

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Page  of

Client: Arcadis		Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition																									
Address: 1410 Rocky Ridge Dr # 330		Company: Arcadis	Address:	Excel EDD	RTNE	Y N																									
Address: Roseville, CA 95661		Email: <a href="mailto:dan.bush@arcadis.com">dan.bush@arcadis.com</a> <a href="mailto:arcadis.us@arcadis.com">arcadis.us@arcadis.com</a>	Address:	Geotracker	RWQCB	✓ 1 Chilled																									
Phone: 916-786-3302	Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: <a href="mailto:mbloes@pivot.com">mbloes@pivot.com</a>	Labspec	CalTrans	2. Headspace																									
Submitted By:		Phone: 916-786-3302	Phone: 949-727-1400, ext 200	Others	LEVEL III	3. Container Intact																									
Title:		Fax:	Fax:	Specify	LEVEL IV	4. Seal Present																									
Signature: 		Date: 10/20/16	Sampled By: 	RWQCB	Regulatory	5. IR number																									
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for disqualification.				Global ID:	Specify State:	6. Method of Cooling																									
Project Name: PG&E Topeck - CMP		Signature: 	Date: 10/20/16	Sample Temp: 14°C																											
Project Number: RC000753.0801																															
Item No.	Laboratory Work Order No.	Sample ID/Location			Matrix			Courier Tracking No.:	Remarks																						
		Sample Date	Sample Time	Others	Ground	x Sediment	250 mL poly																								
1	N021332 - 01	MW-903-Q416	10/20/16 0705	x Cr(VI) FF/E218(6)	x Field QC Cr(VI) FF (E218-6)	x (NH4)2 SO4, NH4 OH																									
2		OW-02S-Q416		x Dissolved metals (EPA 200/8(7)) FF: HNO3	x Dissolved metals (EPA 200/8(7)) FF: HNO3	x As, Mn, Zn																									
3		OW-05D-Q416		x Cu, Mo, Na	x Cu, Mo, Na	x 500ml poly																									
4		OW-05M-Q416		x Sb, Be, Cd, Co, Cu, Pb, Ni, Se, Ag, Ti, V	x Dissolved metals (EPA 200/7) FF: HNO3	x 500ml poly																									
5		OW-05S-Q416		x Na, Al, B, Ca, Fe, Mg, K	x Dissolved metals (EPA 200/7) FF: HNO3	x 500ml poly																									
6	- 02	OW-07D-Q416	10/20/16 0744	x Hg	x Dissolved metals (EPA 246-1) FF: HNO3	x 500ml poly																									
7	- 03	OW-02M-Q416	10/20/16 0755	x Fe	x Total metals (SM6010B); HNO3	x 500 mL poly																									
8				x Anions (E300.01); Chloride, Fluoride, Sulfate	x 1 liter poly	x 1 liter poly																									
9				x Specific Conductance (E120.1)	x 1 liter poly	x 1 liter poly																									
10				x Turbidity (SM 2130B)	x 1 liter poly	x 1 liter poly																									
11				x TDS (SM2340C)	x 1 liter poly	x 1 liter poly																									
12				x Alkalinity (Total, reported as CaCO3); SM2320B)	x 1 liter poly	x 1 liter poly																									
13		MW-701-Q416		x Nitrate/Nitrite (SM4500N43); Nitrate: H2SO4	x 125 mL poly	x 125 mL poly																									
14		MW-702-Q416		x Ammonia as Nitrogen (SM 4500-NH3D); H2SO4, pH<2																											
15	- 04	MW-703-Q416	10/20/16 0910	x																											
Relinquished by (Signature and Printed Name): 		Date/Time: 10/20/16	Relinquished by (Signature and Printed Name): 	Date/Time: 10/20/16 1615	Turn Around Time (TAT)			Special Instruction:																							
Relinquished by (Signature and Printed Name): 		Date/Time: 10/20/16 2110	Relinquished by (Signature and Printed Name): 	Date/Time: 10/20/16 2010	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A</td> <td>&lt; 24 Hrs or Same Day TAT</td> </tr> <tr> <td>B</td> <td>= Next Workday</td> </tr> <tr> <td>C</td> <td>= 2 Workdays</td> </tr> <tr> <td>D</td> <td>= 3 Workdays</td> </tr> <tr> <td>E</td> <td>= Routine 5-7 Workdays</td> </tr> </table>			A	< 24 Hrs or Same Day TAT	B	= Next Workday	C	= 2 Workdays	D	= 3 Workdays	E	= Routine 5-7 Workdays														
A	< 24 Hrs or Same Day TAT																														
B	= Next Workday																														
C	= 2 Workdays																														
D	= 3 Workdays																														
E	= Routine 5-7 Workdays																														
Relinquished by (Signature and Printed Name): 		Date/Time:	Relinquished by (Signature and Printed Name): 	Date/Time:																											
TAT Starts at 8 AM the following day if samples received after 3:00PM.																															
<p>Terms:</p> <ol style="list-style-type: none"> <li>1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.</li> <li>2. Regular TAT is 0-7 business days, surcharges will apply for rush analysis.</li> <li>3. Less than 24 Hrs &gt;200% Next Day &gt;100% 2 Workdays &gt;50% 3 Workdays &gt;35% 4 Workdays &gt;20%</li> <li>4. Customer EDD formats will be an additional 5% of the total project price.</li> <li>5. Trip Blanks and Equipment Blanks are billable sample.</li> <li>6. Asset Laboratories is not responsible for samples collected using incorrect methodology.</li> <li>7. Terms are net 30 days.</li> <li>8. All reports are submitted in electronic format. Please inform ASSE? Laboratories if hard copy of report is needed.</li> <li>9. For subcontract analysis, TAT and surcharges will vary.</li> </ol>																															
<p>Preservatives:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>H=HCl</td> <td>N=NHO<sub>3</sub></td> <td>S=S<sub>2</sub>O<sub>8</sub><sup>2-</sup></td> <td>C=4°C</td> <td>T=Tube</td> <td>V=VOA</td> <td>P=Pint</td> </tr> <tr> <td>Z=Zn(AC)<sub>2</sub></td> <td>O=NaOH</td> <td>T=Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub></td> <td></td> <td>J=Jar</td> <td>B=Teflon</td> <td>G=Glass</td> </tr> <tr> <td colspan="2">Others/Specify: B (NH4)2SO<sub>4</sub>/NH4OH</td> <td colspan="2"></td> <td>M=Metal</td> <td>M=Metal</td> <td>C=Can</td> </tr> </table>											H=HCl	N=NHO <sub>3</sub>	S=S <sub>2</sub> O <sub>8</sub> <sup>2-</sup>	C=4°C	T=Tube	V=VOA	P=Pint	Z=Zn(AC) <sub>2</sub>	O=NaOH	T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		J=Jar	B=Teflon	G=Glass	Others/Specify: B (NH4)2SO <sub>4</sub> /NH4OH				M=Metal	M=Metal	C=Can
H=HCl	N=NHO <sub>3</sub>	S=S <sub>2</sub> O <sub>8</sub> <sup>2-</sup>	C=4°C	T=Tube	V=VOA	P=Pint																									
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Others/Specify: B (NH4)2SO <sub>4</sub> /NH4OH				M=Metal	M=Metal	C=Can																									

## ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 10/20/2016 Workorder: N021332  
Rep sample Temp (Deg C): 1.9 IR Gun ID: 2  
Temp Blank:  Yes  No  
Carrier name: ASSET  
Last 4 digits of Tracking No.: NA Packing Material Used: None  
Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

### Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
16. Were there Non-Conformance issues at login? Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	

Comments:

Checklist Completed By: YR YR 10/21/2016

Reviewed By: J. Brown 10/24/2016

# ASSET Laboratories

## WORK ORDER Summary

25-Oct-16

**WorkOrder:** N021332

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/20/2016

**Comments:** RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021332-001A	MW-903-Q416	10/20/2016 8:05:00 AM	11/3/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-001B			11/3/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-001C			11/3/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-001D			11/3/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021332-001E			11/3/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-001F			11/3/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

25-Oct-16

**WorkOrder:** N021332

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/20/2016

**Comments:** RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021332-002A	OW-02D-Q416	10/20/2016 8:44:00 AM	11/3/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-002B			11/3/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-002C			11/3/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-002D			11/3/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021332-002E			11/3/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-002F			11/3/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

25-Oct-16

**WorkOrder:** N021332

**Client ID:** ARCUS02

**Project:** PG&E Topock - CMP, RC000753.0801

**QC Level:** Level IV

**Date Received:** 10/20/2016

**Comments:** RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021332-003A	OW-02M-Q416	10/20/2016 7:55:00 AM	11/3/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-003B			11/3/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-003C			11/3/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/3/2016		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-003D			11/3/2016		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			11/3/2016		SM 1030F1	Cation-Anion Balance Calculation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N021332-003E			11/3/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-003F			11/3/2016		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

# ASSET Laboratories

## WORK ORDER Summary

25-Oct-16

WorkOrder: N021332

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801

QC Level: Level IV

Date Received: 10/20/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N021332-004A	MW-703-Q416	10/20/2016 9:10:00 AM	11/3/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N021332-005A	FOLDER		11/3/2016		EDD	RWQCB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/3/2016		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



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

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

16J0414

QC Level: Level IV

Subcontractor:

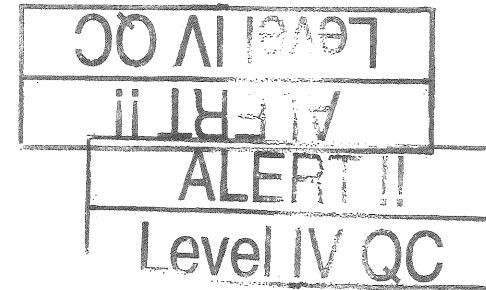
Truesdail  
 3337 Michelson Drive, Suite CN750  
 Irvine, CA 92612

TEL: (714) 730-6239  
 FAX: (714) 730-6462  
 Acct #:

Field Sampler: SIGNED

21-Oct-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N021332-001F / MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	32OZP	1		
N021332-002F / OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	32OZP	1		
N021332-003F / OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	32OZP	1		



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

Please use PO#N21332A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

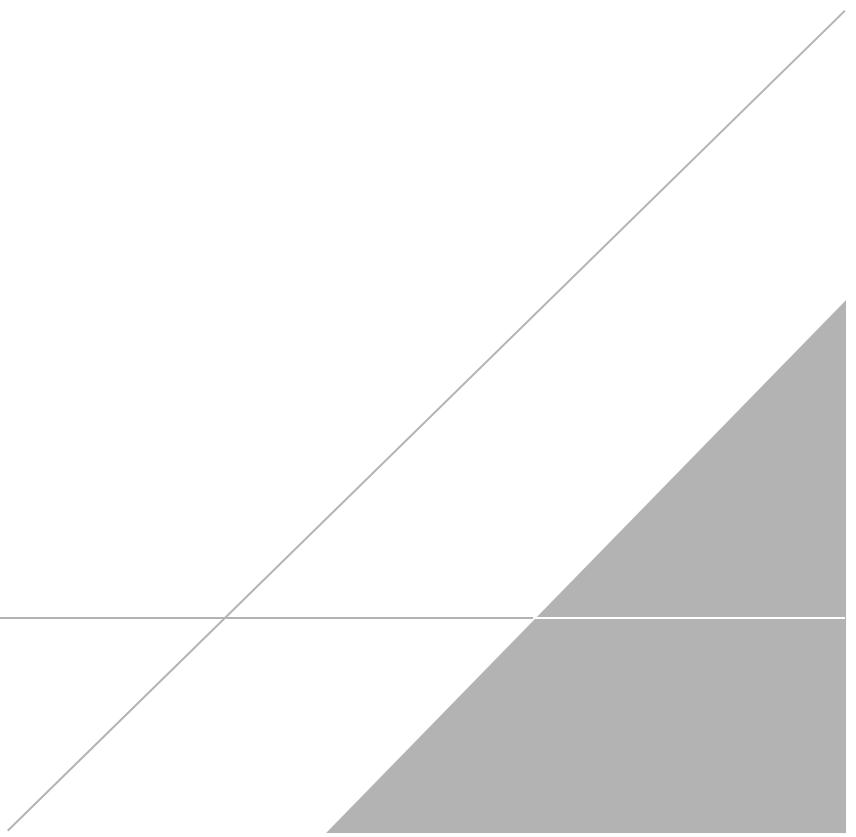
Please analyze for Ammonia as Nitrogen by SM4500-NH3-D.

Relinquished by: <u>Hannah Glodovitz</u>	Date/Time: <u>10/24/16 @ 1700</u>	Received by: <u>650 # 533740343</u>
Relinquished by: _____	Received by: <u>Michele Reed</u>	Date/Time: <u>10/25/16 10:05</u>

1.2°C

## **APPENDIX B**

### **Field Data Collection Sheets**



## **GROUNDWATER ELEVATION DATA**

PROJECT NAME: PG&E Topock CMP  
PROJECT LOCATION: Needles, California  
MEASUREMENT DATE: 3-1-16  
PERSONNEL ON SITE: Jed O'Camillo

**PROJECT NO.:** RC000753.0801  
**TASK:** CMP Quarterly snapshot  
**MEASURING DEVICE:** Water level indicator  
**WEATHER CONDITIONS:**

## **GROUNDWATER ELEVATION DATA**

PROJECT NAME: PG&E Topock CMP  
PROJECT LOCATION: Needles, California  
MEASUREMENT DATE: 4-29-16  
PERSONNEL ON SITE: Jason Mahn

**PROJECT NO.:** RC000753.0801  
**TASK:** CMP Quarterly snapshot  
**MEASURING DEVICE:** Water level indicator  
**WEATHER CONDITIONS:**

## **GROUNDWATER ELEVATION DATA**

PROJECT NAME: PG&E Topock CMP  
PROJECT LOCATION: Needles, California  
MEASUREMENT DATE: 9-20-16  
PERSONNEL ON SITE: Jason Mahr

**PROJECT NO.:** RC000753.0801  
**TASK:** CMP Quarterly snapshot  
**MEASURING DEVICE:** Water level indicator  
**WEATHER CONDITIONS:**

## **GROUNDWATER ELEVATION DATA**

PROJECT NAME: PG&E Topock CMP  
PROJECT LOCATION: Needles, California  
MEASUREMENT DATE: 12-6-16  
PERSONNEL ON SITE: Jason Mahr

**PROJECT NO.:** RC000753.0801  
**TASK:** CMP Quarterly snapshot  
**MEASURING DEVICE:** Water level indicator  
**WEATHER CONDITIONS:**

## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

## CW-01D

Date	10/19/2016	Weather Conditions		Depth to Water (ft bmp)	109.22
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	31.12
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	300
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	190.78
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
08:52	2	8	28.8	7.70	7357	154.4	5.76	2	109.30	4.04	4.77
08:56	2	16	28.9	7.82	7454	151.6	5.89	2	109.30	4.10	4.83
09:00	2	24	29.0	7.89	7425	152.1	5.97	2	109.30	4.09	4.84
09:04	2	32	29.0	7.85	7455	152.2	5.85	2	109.30	4.08	4.83
09:08	2	40	29.1	7.87	7466	153.3	5.90	2	109.30	4.11	4.85
09:12	2	48	29.1	7.87	7467	153.6	5.93	2	109.30	4.09	4.85

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	09:13	Double Filter Turbidity	--
Sample ID	CW-01D-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

## CW-01M

Date	10/19/2016	Weather Conditions		Depth to Water (ft bmp)	109.07
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	13.26
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	190.37
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	81.3
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:31	1	4	28.6	7.71	7869	135.4	5.94	51	109.25	4.33	5.10
09:35	1	8	28.7	7.70	7856	135.0	5.83	28	109.25	4.32	5.09
09:39	1	12	28.9	7.70	7891	135.1	5.80	30	109.25	4.33	5.10
09:43	1	16	28.9	7.70	7915	137.8	5.94	20	109.25	4.32	5.10
09:47	1	20	28.9	7.69	7893	138.1	6.03	19	109.25	4.35	5.13
09:51	1	24	28.9	7.69	7907	140.5	6.07	18	109.25	4.37	5.15

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	09:52	Double Filter Turbidity	1
Sample ID	CW-01M-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	4	MS/MSD Sample ID	--
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

Photos and Drawings

# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## CW-02D

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	92.21
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	42.86
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	355
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	262.79
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
07:52	2	8	29.7	8.26	6987	132.2	5.41	2	92.55	4.46	5.29
07:56	2	16	29.8	8.34	8069	145.5	5.63	1	92.55	4.42	5.17
08:00	2	24	29.8	8.38	8081	144.4	5.58	1	92.55	4.39	5.30
08:04	2	32	29.9	8.40	7901	143.5	5.70	1	92.55	4.29	5.15
08:08	2	40	30.0	8.29	8173	133.6	5.81	1	92.55	4.25	5.23
08:12	2	48	30.0	8.25	8176	136.9	5.90	1	92.55	4.35	5.31
08:16	2	56	30.0	8.19	8177	139.2	5.84	1	92.55	4.30	5.30

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	08:17	Double Filter Turbidity	--
Sample ID	CW-02D-Q416	Color	Clear
Duplicate Sample ID	MW-901-Q416	Odor	none
Dup Sample Time	08:27	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

**CW-02M**

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	92.46
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	17.83
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	201.79
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	109.33
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

**Field Parameters**

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:16	1	4	29.8	8.28	8427	223.8	4.83	215	94.10	4.67	5.36
15:20	1	8	29.8	8.26	8369	216.0	5.87	128	94.10	4.62	5.41
15:24	1	12	29.9	8.24	8466	130.7	6.08	20	94.10	4.20	4.99
15:28	1	16	29.9	8.23	8322	135.5	6.18	19	94.10	4.48	5.31
15:32	1	20	29.9	8.20	8260	131.6	6.04	19	94.10	4.55	5.24
15:36	1	24	29.9	8.20	8372	133.9	5.99	18	94.10	4.51	5.36

**Sampling Summary**

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	15:37	Double Filter Turbidity	1
Sample ID	CW-02M-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	4	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	16:30
		EB Sample ID	MW-701-Q416

**Well Integrity Checklist**

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## CW-03D

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	76.81
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	42.93
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	340
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	263.19
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:12	2	8	29.5	8.48	8537	249.4	5.09	12	76.99	4.72	5.55
13:16	2	16	29.9	8.45	8551	241.2	5.23	11	76.99	4.72	5.55
13:20	2	24	30.0	8.47	8399	231.7	5.33	10	76.99	4.62	5.44
13:24	2	32	30.1	8.47	8438	229.1	5.52	9	76.99	4.66	5.48
13:28	2	40	30.1	8.47	8422	227.6	5.60	9	76.99	4.68	5.49
13:32	2	48	30.1	8.47	8433	225.3	5.62	9	76.99	4.68	5.49

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	13:33	Double Filter Turbidity	--
Sample ID	CW-03D-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	2	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

**CW-03M**

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	77.42
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	23.55
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	221.82
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	144.4
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

**Field Parameters**

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:58	1.5	6	30.0	8.17	9679	245.6	3.51	177	77.44	5.39	6.27
14:02	1.5	12	30.0	8.17	9533	231.8	3.81	128	77.44	5.29	6.18
14:06	1.5	18	30.1	8.16	9544	220.2	3.73	312	77.44	5.34	6.22
14:10	1.5	24	30.1	8.16	9444	204.9	3.77	284	77.44	5.29	6.16
14:14	1.5	30.0	30.2	8.16	9321	191.6	3.81	156	77.44	5.17	6.06
14:18	1.5	36.0	30.1	8.17	9423	194.2	3.82	43	77.44	5.22	6.09
14:22	1.5	42.0	30.1	8.17	9455	195.2	3.85	40	77.44	5.26	6.23
14:26	1.5	48	30.1	8.17	9463	196.6	3.88	37	77.44	5.30	6.33

**Sampling Summary**

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	14:27	Double Filter Turbidity	1
Sample ID	CW-03M-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	4	MS/MSD Sample ID	--
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

**Well Integrity Checklist**

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?	X			
Lock in Place?	X			
Evidence of well subsidence?	X			
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## CW-04D

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	61.24
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	39.43
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	303
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	39.43
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	241.76
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove	1		

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
08:32	2	10	29.3	7.99	8067	199.0	6.08	27	61.40	4.44	5.20
08:37	2	20	29.6	8.18	8291	237.4	6.35	21	61.44	3.56	5.36
08:42	2	30	29.7	8.23	8130	233.1	6.38	14	61.54	4.46	5.27
08:47	2	40	29.8	8.26	8271	234.3	6.01	18	61.54	4.54	5.35
08:52	2	50	29.9	8.26	8140	224.6	5.97	9	61.54	4.48	5.30
08:57	2	60	29.9	8.27	8100	220.1	5.93	9	61.54	4.45	5.28
09:02	2	70	29.9	8.27	8092	219.1	5.90	9	61.54	4.44	5.27

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	09:03	Double Filter Turbidity	
Sample ID	CW-04D-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

### Photos and Drawings

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# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## CW-04M

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	61.42
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	17.86
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	170.91
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	109.49
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:22	1	5	29.2	8.15	8047	206.2	7.02	13	61.50	4.51	5.31
09:27	1	10	29.3	8.13	8029	203.0	6.69	15	61.55	4.41	5.22
09:32	1	15	29.4	8.13	8011	200.5	6.78	20	61.55	4.41	5.21
09:37	1	20	29.4	8.14	8048	208.1	6.63	19	61.55	4.42	5.22
09:42	1	25	29.4	8.14	8039	210.1	6.59	19	61.55	4.42	5.22
09:47	1	30	29.4	8.14	8032	212.3	6.56	18	61.55	4.40	5.22

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	09:48	Double Filter Turbidity	1
Sample ID	CW-04M-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	3	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

### Photos and Drawings

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# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## OW-01D

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	92.51
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	30.41
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	278.98
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	186.47
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
12:08	1.5	6.0	27.8	8.15	8204	196.5	5.91	17	94.30	4.52	5.63
12:12	1.5	12.0	27.8	8.15	8193	196.3	6.03	18	94.30	4.54	5.36
12:16	1.5	18.0	27.7	8.15	8239	194.5	5.97	15	94.30	4.56	5.35
12:20	1.5	24.0	27.7	8.15	8250	196.0	6.06	16	94.30	4.56	5.37
12:24	1.5	30.0	27.7	8.15	8266	197.2	6.12	15	94.30	4.56	5.34
12:28	1.5	36.0	27.8	8.14	8167	198.1	5.97	14	94.30	4.52	5.61

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	12:29	Double Filter Turbidity	2
Sample ID	OW-01D-Q416	Color	Clear
Duplicate Sample ID	MW-902-Q416	Odor	none
Dup Sample Time	12:39	MS/MSD Sample Time	--
Single Filter Turbidity	5	MS/MSD Sample ID	--
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## OW-01M

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	93.17
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	15.62
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	188.91
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	95.74
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
11:28	1	4	29.2	8.06	8010	187.3	5.33	15	93.30	4.34	5.18
11:32	1	8	29.2	8.12	8130	192.4	6.16	10	93.30	4.54	5.09
11:36	1	12	29.2	8.12	8257	200.6	6.19	9	93.30	4.51	5.31
11:40	1	16	29.2	8.10	8187	201.3	6.18	9	93.30	4.54	5.35
11:44		20	29.2	8.10	8233	203.6	6.16	9	93.30	4.55	5.35

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	11:45	Double Filter Turbidity	--
Sample ID	OW-01M-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	2	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

**OW-01S**

Date	10/18/2016	Weather Conditions		Depth to Water (ft bmp)	93.30
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	3.32
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	113.63
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	20.33
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/18/2016
Comments		Casing Volume to Remove			

**Field Parameters**

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
10:33	0.5	2.5	31.0	7.68	7706	207.2	5.02	18	93.53	4.22	4.95
10:38	0.5	5.0	31.3	7.66	7783	170.6	5.20	13	93.53	4.30	5.10
10:43	0.5	7.5	31.1	7.64	7577	153.2	5.17	12	93.53	4.20	4.94
10:48	0.5	10.0	31.0	7.66	7841	161.9	5.33	13	93.53	4.32	5.13
10:53	0.5	12.5	31.0	7.66	8039	166.6	5.40	12	93.53	4.40	5.20
10:58	0.5	15.0	31.0	7.65	8119	172.2	5.42	12	93.53	4.41	5.24

**Sampling Summary**

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	10:59	Double Filter Turbidity	1
Sample ID	OW-01S-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	4	MS/MSD Sample ID	--
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

**Well Integrity Checklist**

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

### OW-02D

Date	10/20/2016	Weather Conditions		Depth to Water (ft bmp)	91.00
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	40.61
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	340
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	249.0
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/20/2016
Comments		Casing Volume to Remove			

### Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
08:19	2	8	28.5	7.50	7839	292.4	5.52	1	91.22	4.31	5.08
08:23	2	16	28.4	7.57	7903	254.9	6.81	1	91.22	4.37	5.15
08:27	2	24	28.4	7.57	7914	236.5	7.25	1	91.22	4.35	5.16
08:31	2	32	28.5	7.57	7946	219.1	7.31	1	91.22	4.39	5.16
08:35	2	40	28.5	7.58	7978	206.6	7.40	1	91.22	4.38	5.17
08:39	2	48	28.5	7.58	7977	199.8	7.46	1	91.22	4.39	5.20
08:43	2	56	28.5	7.57	7980	195.5	7.36	1	91.22	4.39	5.18

### Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	08:44	Double Filter Turbidity	--
Sample ID	OW-02D-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	09:10
		EB Sample ID	MW-703-Q416

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## OW-02M

Date	10/20/2016	Weather Conditions		Depth to Water (ft bmp)	91.19
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	19.87
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	213.03
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	121.84
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/20/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
07:38	1.5	6	28.2	7.67	7898	174.8	6.66	3	91.30	4.36	5.13
07:42	1.5	12	28.3	7.69	7920	163.0	6.87	2	91.30	4.35	5.14
07:46	1.5	18	28.4	7.71	7948	161.6	6.92	2	91.30	4.35	5.15
07:50	1.5	24	28.5	7.72	7910	162.5	6.88	2	91.30	4.35	5.14
07:54	1.5	30	28.5	7.72	7931	162.5	6.91	2	91.30	4.35	5.14

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	07:55	Double Filter Turbidity	--
Sample ID	OW-02M-Q416	Color	Clear
Duplicate Sample ID	MW-903-Q416	Odor	none
Dup Sample Time	08:05	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	--
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			

## Groundwater Monitoring Field Data Form

Site: PG&amp;E Topock

Item	Yes	No	NA	Notes
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## OW-02S

Date	10/19/2016	Weather Conditions		Depth to Water (ft bmp)	92.22
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	1.65
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	102.32
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	10.1
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
14:08	0.25	1	30.9	7.79	2864	162.5	6.08	12	92.40	1.46	1.85
14:12	0.25	2	31.4	7.78	2861	163.3	5.85	6	92.40	1.47	1.86
14:16	0.25	3	31.7	7.77	2870	164.2	5.79	2	92.40	1.48	1.90
14:20	0.25	4	31.8	7.77	2876	165.9	5.76	2	92.40	1.51	1.93
14:24	0.25	5	31.8	7.75	2896	166.7	5.74	2	92.40	1.54	1.96
14:28	0.25	6	31.8	7.74	2903	167.2	5.69	2	92.40	1.55	1.99
14:32	0.25	7	31.9	7.72	2916	169.3	5.66	2	92.40	1.58	2.01

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	14:33	Double Filter Turbidity	--
Sample ID	OW-02S-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	--	EB Time	15:15
		EB Sample ID	MW-702-Q416

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

### Photos and Drawings

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# Groundwater Monitoring Field Data Form

Site: PG&E Topock

## OW-05D

Date	10/19/2016	Weather Conditions		Depth to Water (ft bmp)	94.81
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	41.62
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	350
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	255.19
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

## Field Parameters

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
10:27	2	8	29.5	7.63	7743	193.6	5.75	3	95.10	4.24	5.01
10:31	2	16	29.8	7.67	7793	158.1	5.82	2	95.10	3.98	4.75
10:35	2	24	29.7	7.68	7705	157.8	5.85	2	95.10	4.23	5.00
10:39	2	32	29.8	7.72	7684	157.2	5.72	2	95.10	4.22	5.00
10:43	2	40	29.8	7.73	7641	154.8	5.68	2	95.10	4.21	5.00
10:47	2	48	29.8	7.74	7702	155.5	5.65	2	95.10	4.20	5.00
10:51	2	56	29.8	7.74	7686	152.6	5.64	2	95.10	4.20	5.00

## Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	10:52	Double Filter Turbidity	--
Sample ID	OW-05D-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity		EB Time	--
		EB Sample ID	

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

**OW-05M**

Date	10/19/2016	Weather Conditions		Depth to Water (ft bmp)	94.40
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	25.88
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	253.08
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	158.68
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

**Field Parameters**

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
11:17	1	5	29.2	7.83	7714	140.3	5.52	13	94.78	4.26	5.01
11:22	1	10	29.4	8.24	7766	138.3	5.71	26	94.78	4.25	5.02
11:27	1	15	29.5	8.22	7763	139.5	5.60	24	94.78	4.26	5.04
11:32	1	20	29.5	8.22	7772	142.1	5.65	15	94.78	4.28	5.06
11:37	1	25	29.6	8.23	7820	146.8	5.74	4	94.78	4.29	5.10
11:42	1	30	29.6	8.23	7844	150.1	5.83	2	94.78	4.29	5.13
11:47	1	35	29.7	8.23	7869	153.3	5.89	2	94.78	4.29	5.15
11:52	1	40	29.7	8.23	7888	155.9	5.96	2	94.78	4.31	5.17

**Sampling Summary**

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	11:53	Double Filter Turbidity	--
Sample ID	OW-05M-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	--
Without Filter Turbidity	--	EB Time	--
		EB Sample ID	--

**Well Integrity Checklist**

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			

Groundwater Monitoring Field Data Form  
Site: PG&E Topock

Item	Yes	No	NA	Notes
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

## Photos and Drawings



# Groundwater Monitoring Field Data Form

## Site: PG&E Topock

**OW-05S**

Date	10/19/2016	Weather Conditions		Depth to Water (ft bmp)	95.01
Project_Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	2.93
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	112.98
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	0.0
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	17.97
Sampling Type	Volume Purge – Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/19/2016
Comments		Casing Volume to Remove			

**Field Parameters**

Time	Flow Rate (gal/min)	Cuml Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
12:49	0.5	2.0	29.5	7.95	5811	169.2	4.27	84	95.10	3.12	3.87
12:53	0.5	4	30.1	7.94	5906	164.8	4.26	37	95.10	3.18	3.83
12:57	0.5	6	30.1	7.93	5883	163.9	4.62	11	95.10	3.16	3.80
13:01	0.5	8	29.9	7.93	5836	163.9	4.70	2	95.10	3.14	3.75
13:05	0.5	10	29.9	7.94	5830	163.3	4.75	2	95.10	3.13	3.78
13:09	0.5	12	29.9	7.93	5822	160.1	4.77	2	95.10	3.12	3.79

**Sampling Summary**

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Time	13:10	Double Filter Turbidity	--
Sample ID	OW-05S-Q416	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time	--	MS/MSD Sample Time	--
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity		EB Time	--
		EB Sample ID	

**Well Integrity Checklist**

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

## Groundwater Monitoring Field Data Form

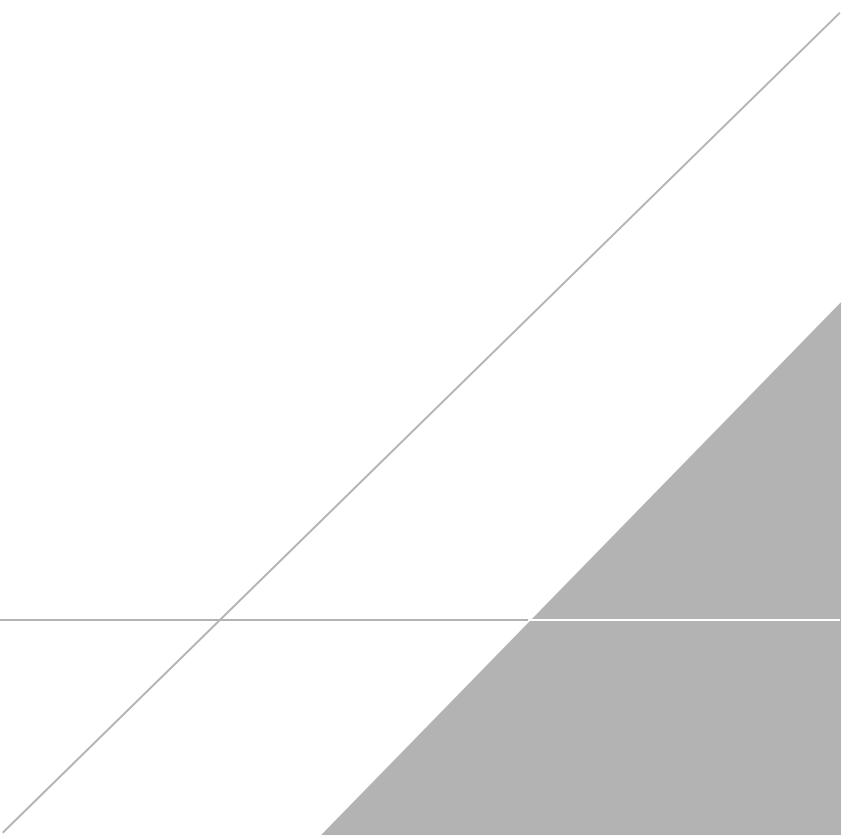
Site: PG&amp;E Topock

Item	Yes	No	NA	Notes
Photo Taken?	X			
Required Actions				
Action Completed?		X		
Remarks				

Photos and Drawings

## **APPENDIX C**

**ARAR Monitoring Information for Groundwater Samples, 2016**



## Appendix C

**ARAR Monitoring Information for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-Q416	Jordan Teramae	10/19/2016	09:13	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (12)	12	1.5
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	65	5.0	1.2
					ASSET	EPA 200.8	ASD	11/1/2016	CEI	µg/L	1.1	0.10	0.025
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	23	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,100	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	150,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.45	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2.2	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	13,000	2500	360
					ASSET	EPA 200.7	MDG	10/29/2016	CEI	µg/L	16,000	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	0.87	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	20	12	0.97
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.8	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	7,100	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	3.8	2.5	0.14
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	480	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	4,100	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	0.29	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	1.9	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
CW-01M	CW-01M-Q416	Jordan Teramae	10/19/2016	09:52	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (12)	12	1.5
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7

## Appendix C

## ARAR Monitoring Information for Groundwater Samples, 2016

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-Q416	Jordan Teramae	10/19/2016	09:52	ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	77	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	1.2	0.50	0.12
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	87	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	160,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.86	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	1.2	1.0	0.019
					ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	620	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	46 J	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	13,000	2500	360
					ASSET	EPA 200.7	MDG	10/29/2016	CEI	µg/L	13,000	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.3	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	17	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,300,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.6	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25 J)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	7,100	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	3.6	2.5	0.14
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	480	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	4,200	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	0.35	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	2.1	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
CW-02D	CW-02D-Q416	Jordan Teramae	10/19/2016	08:17	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.30
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	62	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	3.1	0.50	0.12

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**ARAR Monitoring Information for Groundwater Samples, 2016**

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<b>Location ID</b>	<b>Sample ID</b>	<b>Sampler Name</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Lab</b>	<b>Analysis Method</b>	<b>Parameter</b>	<b>Analysis Date</b>	<b>Lab Technician</b>	<b>Units</b>	<b>Result</b>	<b>RL</b>	<b>MDL</b>
CW-02D	CW-02D-Q416	Jordan Teramae	10/19/2016	08:17	ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	16 J	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,100	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	90,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.33	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	1.8	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	11,000	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	4,800	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.9	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	16	12	0.97
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.8	0.25	0.11
					ASSET	EPA 200.8	PBD	11/1/2016	CEI	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	7,700	0.10	0.10
					ASSET	EPA 200.8	SED	11/1/2016	CEI	µg/L	3.5	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	490	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	4,200	50	50
					ASSET	EPA 200.8	TLD	11/1/2016	CEI	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	0.3	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	4.1 J	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
CW-02D	MW-901-Q416	Jordan Teramae	10/19/2016	08:27	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (12)	12	1.5
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	62	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	3.1	0.50	0.12
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	ND (25 J)	25	1.7
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,100	100	38

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02D	MW-901-Q416	Jordan Teramae	10/19/2016	08:27	ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	90,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (12)	12	1.2
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.29	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (5)	5.0	1.3
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	1.8	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	8,700	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	4,900	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.8	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	15	12	0.97
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,500,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.8	0.25	0.11
					ASSET	EPA 200.8	PBD	11/1/2016	CEI	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (12)	12	0.79
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	7,200	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	3.3	2.5	0.14
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	490	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	4,400	50	50
					ASSET	EPA 200.8	TLD	11/1/2016	CEI	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	0.32	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	ND (5 J)	5.0	0.11
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
CW-02M	CW-02M-Q416	Jordan Teramae	10/18/2016	15:37	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.30
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/19/2016	LR	mg/L	57	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	2	0.10	0.025
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	67	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,200	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	140,000	500	28

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02M	CW-02M-Q416	Jordan Teramae	10/18/2016	15:37	ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/20/2016	RAB	mg/L	2,200	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	1.8	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	1.6	1.0	0.019
					ASSET	EPA 200.8	CUD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	1,400	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	2.8	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	11,000	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	9,800	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.2	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	18	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.6	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25 J)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,800	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	2.7	0.50	0.028
					ASSET	EPA 300.0	SO4	10/20/2016	RAB	mg/L	530	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,200	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	21	0.10	0.10
					ASSET	EPA 200.8	VD	10/31/2016	CEI	µg/L	3.7	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (10)	10	0.27
CW-03D	CW-03D-Q416	Jordan Teramae	10/18/2016	13:33	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.30
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/19/2016	LR	mg/L	59	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	1.5	0.10	0.025
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	17	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,100	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	78,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/20/2016	RAB	mg/L	2,300	250	9.7

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03D	CW-03D-Q416	Jordan Teramae	10/18/2016	13:33	ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	0.37	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	30	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	2.7	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	11,000	2500	360
					ASSET	EPA 200.7	MDG	10/29/2016	CEI	µg/L	5,300	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.9	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	17	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,500,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.9	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,800	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	3.2	0.50	0.028
					ASSET	EPA 300.0	SO4	10/20/2016	RAB	mg/L	520	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,200	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	0.57	0.10	0.10
					ASSET	EPA 200.8	VD	10/31/2016	CEI	µg/L	2.6	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (10)	10	0.27
CW-03M	CW-03M-Q416	Jordan Teramae	10/18/2016	14:27	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.30
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/19/2016	LR	mg/L	53	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	1.2	0.10	0.025
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	48	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,300	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	190,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/20/2016	RAB	mg/L	2,600	250	9.7

## Appendix C

**ARAR Monitoring Information for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-Q416	Jordan Teramae	10/18/2016	14:27	ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	5.8	1.0	0.019
					ASSET	EPA 200.8	CUD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	540	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	2.8	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	14,000	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	15,000	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.2	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	28	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,700,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.1	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	8,900	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.14
					ASSET	EPA 300.0	SO4	10/20/2016	RAB	mg/L	530	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,700	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	12	0.10	0.10
					ASSET	EPA 200.8	VD	10/31/2016	CEI	µg/L	2.8	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (10)	10	0.27
CW-04D	CW-04D-Q416	Jordan Teramae	10/18/2016	09:03	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.30
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/19/2016	LR	mg/L	62	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	3	0.10	0.025
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	17	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,200	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	130,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/20/2016	RAB	mg/L	2,200	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	0.57	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.26

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<b>Location ID</b>	<b>Sample ID</b>	<b>Sampler Name</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Lab</b>	<b>Analysis Method</b>	<b>Parameter</b>	<b>Analysis Date</b>	<b>Lab Technician</b>	<b>Units</b>	<b>Result</b>	<b>RL</b>	<b>MDL</b>
CW-04D	CW-04D-Q416	Jordan Teramae	10/18/2016	09:03	ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	3	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	12,000	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	8,900	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	1.4	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	17	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,500,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.9	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,400	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	2.9	2.5	0.14
					ASSET	EPA 300.0	SO4	10/20/2016	RAB	mg/L	520	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,200	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	0.49	0.10	0.10
					ASSET	EPA 200.8	VD	10/31/2016	CEI	µg/L	3.3	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (10)	10	0.27
CW-04M	CW-04M-Q416	Jordan Teramae	10/18/2016	09:48	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.30
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/19/2016	LR	mg/L	56	5.0	1.2
					ASSET	EPA 200.8	ASD	11/1/2016	CEI	µg/L	1.9	0.50	0.12
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	93	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	190,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/20/2016	RAB	mg/L	2,200	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	2.2	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	2.1	1.0	0.019
					ASSET	EPA 200.8	CUD	10/31/2016	CEI	µg/L	ND (5)	5.0	1.3
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	140	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04M	CW-04M-Q416	Jordan Teramae	10/18/2016	09:48	ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	1.8	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	10/25/2016	CEI	µg/L	13,000	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	15,000	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	0.78	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	9	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,300,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.9	0.25	0.11
					ASSET	EPA 200.8	PBD	10/31/2016	CEI	µg/L	ND (25)	25	0.92
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,300	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	2.9	2.5	0.14
					ASSET	EPA 300.0	SO4	10/20/2016	RAB	mg/L	520	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,100	50	50
					ASSET	EPA 200.8	TLD	10/31/2016	CEI	µg/L	ND (12)	12	0.74
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	1.8	0.10	0.10
					ASSET	EPA 200.8	VD	10/31/2016	CEI	µg/L	3.7	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
OW-01D	MW-902-Q416	Jordan Teramae	10/18/2016	12:39	ASSET	EPA 300.0	CL	10/21/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	ND (0.2)	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	2.1	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	22	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,300,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.5	0.25	0.11
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,500	0.10	0.10
					ASSET	EPA 300.0	SO4	10/21/2016	RAB	mg/L	500	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,100	50	50
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	5.3	0.10	0.10
OW-01D	OW-01D-Q416	Jordan Teramae	10/18/2016	12:29	ASSET	EPA 300.0	CL	10/21/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	0.21	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	2.1	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	23	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,300,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.4	0.25	0.11

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<b>Location ID</b>	<b>Sample ID</b>	<b>Sampler Name</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Lab</b>	<b>Analysis Method</b>	<b>Parameter</b>	<b>Analysis Date</b>	<b>Lab Technician</b>	<b>Units</b>	<b>Result</b>	<b>RL</b>	<b>MDL</b>
OW-01D	OW-01D-Q416	Jordan Teramae	10/18/2016	12:29	ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,500	0.10	0.10
					ASSET	EPA 300.0	SO4	10/21/2016	RAB	mg/L	500	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	3,900	50	50
					ASSET	SM 2130 B	TRB	10/19/2016	LR	NTU	4.5	0.10	0.10
OW-01M	OW-01M-Q416	Jordan Teramae	10/18/2016	11:45	ASSET	EPA 300.0	CL	10/21/2016	RAB	mg/L	2,200	250	9.7
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	0.52	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	2.2	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	24	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.7	0.25	0.11
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	7,300	0.10	0.10
					ASSET	EPA 300.0	SO4	10/21/2016	RAB	mg/L	510	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,100	50	50
OW-01S	OW-01S-Q416	Jordan Teramae	10/18/2016	10:59	ASSET	EPA 300.0	CL	10/21/2016	RAB	mg/L	2,000	250	9.7
					ASSET	EPA 218.6	CR6	10/24/2016	RAB	µg/L	5	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	5.5	1.0	0.019
					ASSET	EPA 300.0	FL	10/19/2016	RAB	mg/L	1.4	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	5.8	0.50	0.039
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	850,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	10/31/2016	RB	mg/L	2.8	0.25	0.11
					ASSET	EPA 120.1	SC	10/19/2016	LR	µS/cm	6,400	0.10	0.10
					ASSET	EPA 300.0	SO4	10/21/2016	RAB	mg/L	430	25	3.3
					ASSET	SM 2540 C	TDS	10/19/2016	LR	mg/L	4,000	50	50
OW-02D	OW-02D-Q416	Jordan Teramae	10/20/2016	08:44	ASSET	EPA 200.8	AGD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	10/31/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	73	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	1.8	0.50	0.12
					ASSET	EPA 200.8	BAD	11/1/2016	CEI	µg/L	17	1.0	0.070
					ASSET	EPA 200.7	BD	10/31/2016	CEI	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (12)	12	1.1
					ASSET	EPA 200.7	CAD	10/31/2016	CEI	µg/L	150,000	500	28
					ASSET	EPA 200.8	CDD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02D	OW-02D-Q416	Jordan Teramae	10/20/2016	08:44	ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.53	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	10/31/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2.1	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/1/2016	CEI	µg/L	14,000	2500	360
					ASSET	EPA 200.7	MGD	10/31/2016	CEI	µg/L	28,000	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	21	12	0.97
					ASSET	EPA 200.7	NAD	11/1/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	2	0.50	0.22
					ASSET	EPA 200.8	PBD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.037
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/21/2016	LR	µS/cm	7,000	0.10	0.10
					ASSET	EPA 200.8	SED	11/1/2016	CEI	µg/L	3.3	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	480	25	3.3
					ASSET	SM 2540 C	TDS	10/24/2016	LR	mg/L	4,100	50	50
					ASSET	EPA 200.8	TLD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.030
					ASSET	SM 2130 B	TRB	10/21/2016	LR	NTU	0.27	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	ND (1)	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
OW-02M	MW-903-Q416	Jordan Teramae	10/20/2016	08:05	ASSET	EPA 200.8	AGD	10/31/2016	CEI	µg/L	ND (12)	12	1.5
					ASSET	EPA 200.7	ALD	10/29/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	73	5.0	1.2
					ASSET	EPA 200.8	ASD	10/31/2016	CEI	µg/L	2.2	0.50	0.12
					ASSET	EPA 200.8	BAD	10/31/2016	CEI	µg/L	42	5.0	0.35
					ASSET	EPA 200.7	BD	10/29/2016	CEI	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/29/2016	CEI	µg/L	140,000	500	28
					ASSET	EPA 200.8	CDD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.24
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.3	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019

## Appendix C

**ARAR Monitoring Information for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02M	MW-903-Q416	Jordan Teramae	10/20/2016	08:05	ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	27	20	1.8
					ASSET	EPA 200.7	FETD	10/29/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2.3	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/1/2016	CEI	µg/L	14,000	2500	360
					ASSET	EPA 200.7	MGD	10/29/2016	CEI	µg/L	25,000	100	4.4
					ASSET	EPA 200.8	MND	10/31/2016	CEI	µg/L	ND (0.5)	0.50	0.056
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	22	12	0.97
					ASSET	EPA 200.7	NAD	11/1/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	EPA 200.8	NID	10/31/2016	CEI	µg/L	ND (5)	5.0	0.20
					ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	2.5	0.50	0.22
					ASSET	EPA 200.8	PBD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.037
					ASSET	EPA 200.8	SBD	10/31/2016	CEI	µg/L	ND (2.5)	2.5	0.16
					ASSET	EPA 120.1	SC	10/21/2016	LR	µS/cm	7,100	0.10	0.10
					ASSET	EPA 200.8	SED	10/31/2016	CEI	µg/L	3.4	2.5	0.14
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	460	25	3.3
					ASSET	SM 2540 C	TDS	10/24/2016	LR	mg/L	4,100	50	50
					ASSET	EPA 200.8	TLD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.030
					ASSET	SM 2130 B	TRB	10/21/2016	LR	NTU	0.27	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	2.7	1.0	0.021
					ASSET	EPA 200.8	ZND	10/31/2016	CEI	µg/L	ND (50)	50	1.3
OW-02M	OW-02M-Q416	Jordan Teramae	10/20/2016	07:55	ASSET	EPA 200.8	AGD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	10/31/2016	CEI	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/21/2016	LR	mg/L	73	5.0	1.2
					ASSET	EPA 200.8	ASD	11/1/2016	CEI	µg/L	1.9	0.10	0.025
					ASSET	EPA 200.8	BAD	11/1/2016	CEI	µg/L	37	1.0	0.070
					ASSET	EPA 200.7	BD	10/31/2016	CEI	µg/L	1,100	100	38
					ASSET	EPA 200.8	BED	11/1/2016	CEI	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	10/31/2016	CEI	µg/L	140,000	500	28
					ASSET	EPA 200.8	CDD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 200.8	COBD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/27/2016	RAB	µg/L	0.29	0.20	0.066
					ASSET	EPA 200.8	CRTD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/27/2016	CEI	µg/L	20	20	1.8

## Appendix C

**ARAR Monitoring Information for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02M	OW-02M-Q416	Jordan Teramae	10/20/2016	07:55	ASSET	EPA 200.7	FETD	10/31/2016	CEI	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2.3	0.50	0.087
					ASSET	EPA 245.1	HGD	10/21/2016	MG	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/1/2016	CEI	µg/L	15,000	2500	360
					ASSET	EPA 200.7	MGD	10/31/2016	CEI	µg/L	26,000	100	4.4
					ASSET	EPA 200.8	MND	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.056
					ASSET	EPA 200.8	MOD	11/1/2016	CEI	µg/L	23	0.50	0.039
					ASSET	EPA 200.7	NAD	11/1/2016	CEI	µg/L	1,400,000	25000	580
					ASSET	EPA 200.8	NID	11/1/2016	CEI	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	2.6	0.50	0.22
					ASSET	EPA 200.8	PBD	11/1/2016	CEI	µg/L	ND (1)	1.0	0.037
					ASSET	EPA 200.8	SBD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/21/2016	LR	µS/cm	7,100	0.10	0.10
					ASSET	EPA 200.8	SED	11/2/2016	CEI	µg/L	3.5	2.5	0.14
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	470	25	3.3
					ASSET	SM 2540 C	TDS	10/24/2016	LR	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/1/2016	CEI	µg/L	ND (0.5)	0.50	0.030
					ASSET	SM 2130 B	TRB	10/21/2016	LR	NTU	0.24	0.10	0.10
					ASSET	EPA 200.8	VD	11/2/2016	CEI	µg/L	2.7	1.0	0.021
					ASSET	EPA 200.8	ZND	11/1/2016	CEI	µg/L	ND (10)	10	0.27
OW-02S	OW-02S-Q416	Jordan Teramae	10/19/2016	14:33	ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	750	100	3.9
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	17	1.0	0.33
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	19	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	3.6	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	28	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	450,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	3.1	0.50	0.22
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	2,600	0.10	0.10
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	110	10	1.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	1,500	20	20
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	1.9	0.10	0.10
OW-05D	OW-05D-Q416	Jordan Teramae	10/19/2016	10:52	ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,000	250	9.7
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.35	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2.3	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	24	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,300,000	25000	580

## Appendix C

**ARAR Monitoring Information for Groundwater Samples, 2016**

PG&amp;E Topock Compliance Monitoring Program

<b>Location ID</b>	<b>Sample ID</b>	<b>Sampler Name</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Lab</b>	<b>Analysis Method</b>	<b>Parameter</b>	<b>Analysis Date</b>	<b>Lab Technician</b>	<b>Units</b>	<b>Result</b>	<b>RL</b>	<b>MDL</b>
OW-05D	OW-05D-Q416	Jordan Teramae	10/19/2016	10:52	ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	2.5	0.50	0.22
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	6,800	0.10	0.10
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	460	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	4,100	50	50
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	0.34	0.10	0.10
OW-05M	OW-05M-Q416	Jordan Teramae	10/19/2016	11:53	ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	2,100	250	9.7
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	0.5	0.20	0.066
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	2.3	0.50	0.087
					ASSET	EPA 200.8	MOD	11/1/2016	CEI	µg/L	24	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	1,300,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	2.4	0.50	0.22
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	6,900	0.10	0.10
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	460	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	4,100	50	50
OW-05S	OW-05S-Q416	Jordan Teramae	10/19/2016	13:10	ASSET	EPA 300.0	CL	10/25/2016	RAB	mg/L	1,400	100	3.9
					ASSET	EPA 218.6	CR6	10/26/2016	RAB	µg/L	13	0.40	0.13
					ASSET	EPA 200.8	CRTD	10/31/2016	CEI	µg/L	14	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2016	RAB	mg/L	1.5	0.50	0.087
					ASSET	EPA 200.8	MOD	10/31/2016	CEI	µg/L	12	2.5	0.19
					ASSET	EPA 200.7	NAD	10/25/2016	CEI	µg/L	550,000	25000	580
					ASSET	SM 4500-NO3 F	NO3NO2N	11/2/2016	RB	mg/L	2.9	0.50	0.22
					ASSET	EPA 120.1	SC	10/20/2016	LR	µS/cm	4,600	0.10	0.10
					ASSET	EPA 300.0	SO4	10/25/2016	RAB	mg/L	270	25	3.3
					ASSET	SM 2540 C	TDS	10/25/2016	LR	mg/L	3,500	33	33
					ASSET	SM 2130 B	TRB	10/20/2016	LR	NTU	0.84	0.10	0.10

Notes appear on the following page.

Appendix C

**ARAR Monitoring Information for Groundwater Samples, 2016**

*PG&E Topock Compliance Monitoring Program*

Notes:

µg/L = micrograms per liter

µS/cm = microSiemens per centimeter

ARAR = applicable or relevant and appropriate requirement

EPA = United States Environmental Protection Agency

J = concentration estimated by laboratory or data validation

MDL = method detection limit corrected for sample dilution

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

NTU = Nephelometric Turbidity Unit

RL = reporting limit corrected for sample dilution

SM = standard method

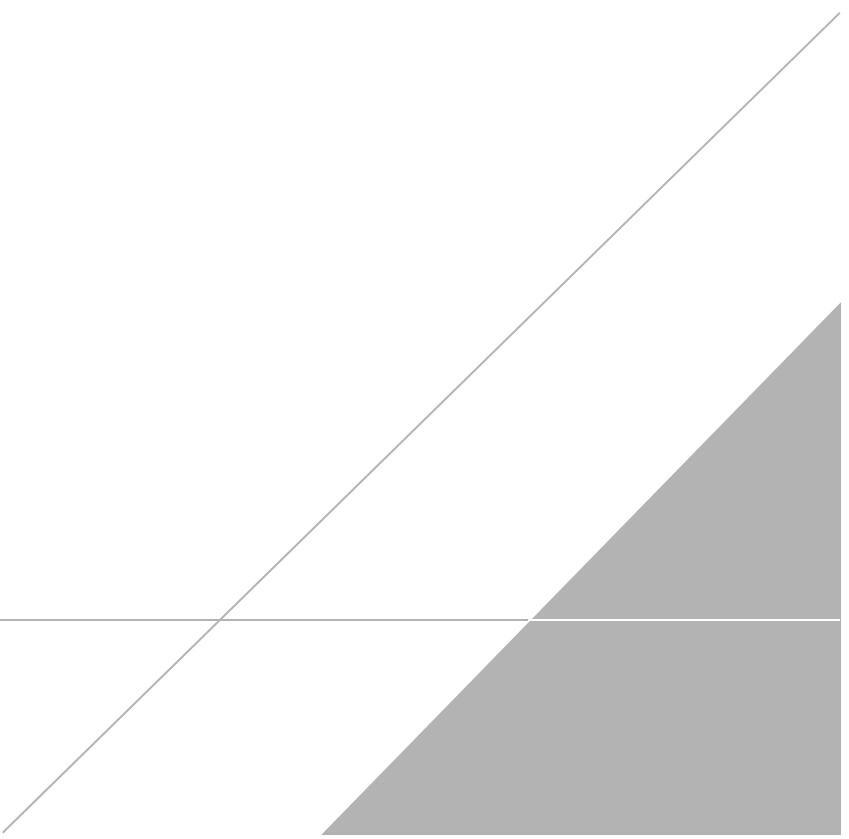
ASSET = Asset Laboratories

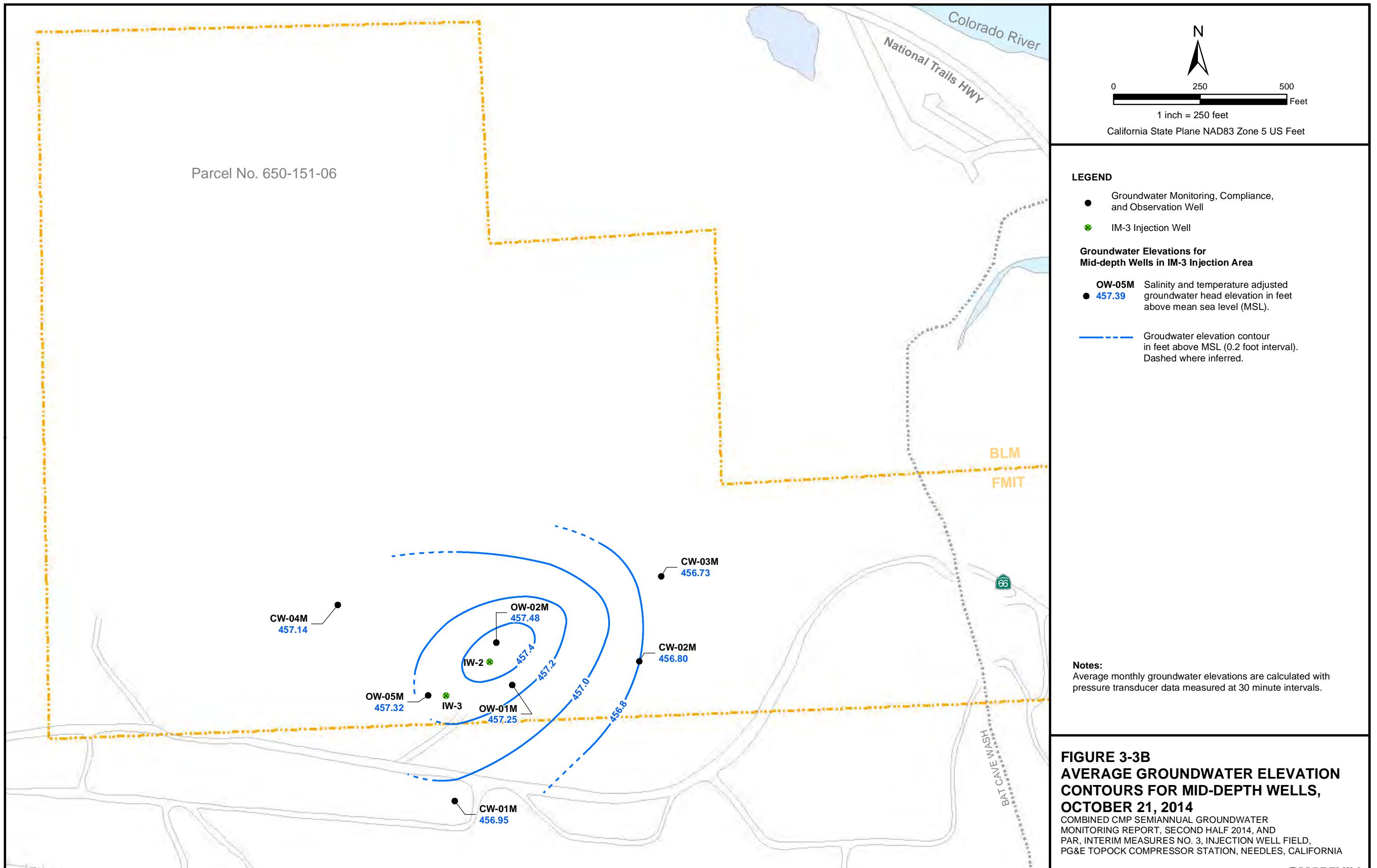
TLI = Truesdall Laboratories, Inc.

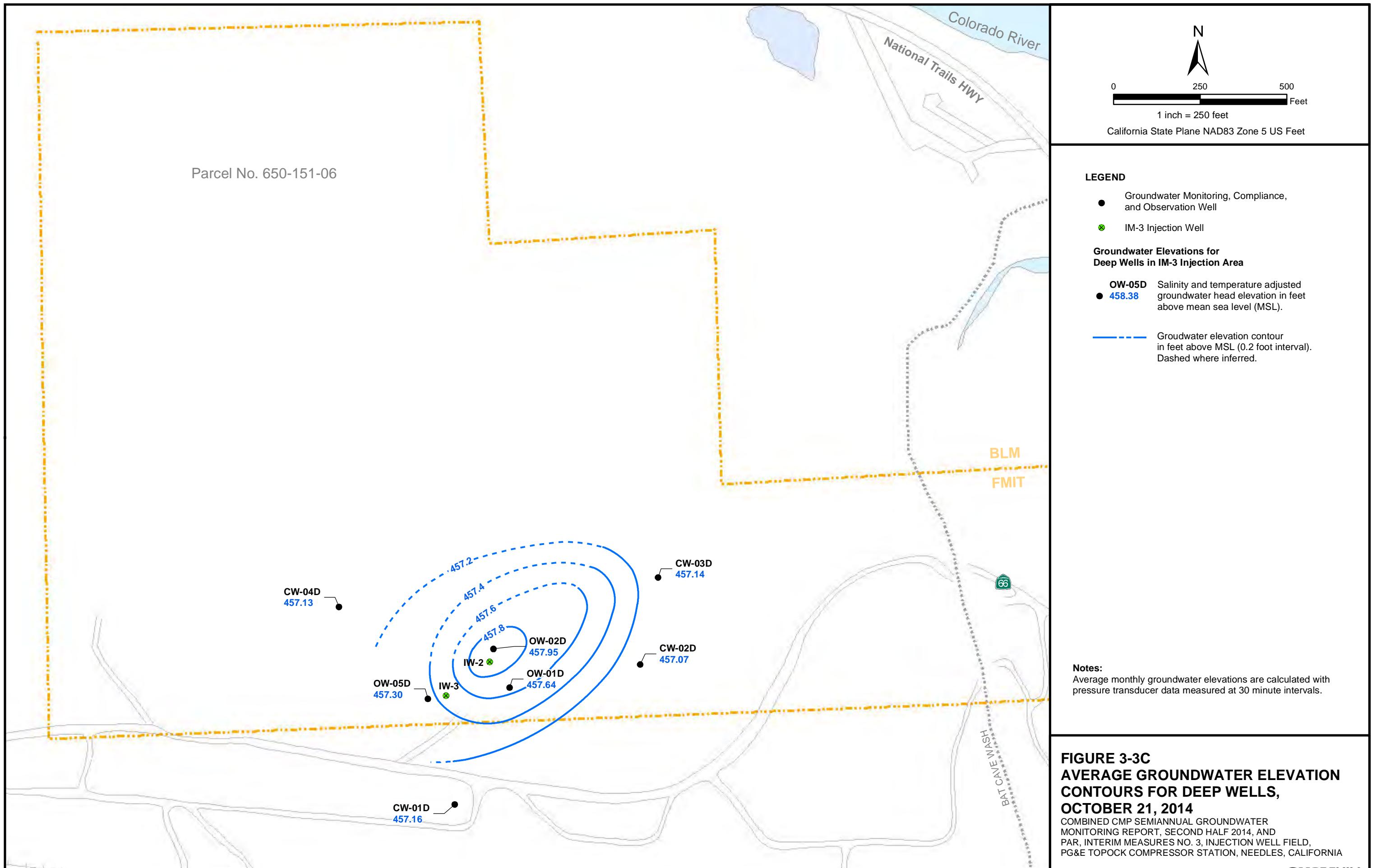
ALKC	alkalinity, as carbonate	COBD	cobalt, dissolved	MOD	molybdenum, dissolved	TRB	turbidity
ALKT	alkalinity, total as CaCO <sub>3</sub>	CRTD	chromium, dissolved	NAD	sodium, dissolved	VD	vanadium, dissolved
ALKB	alkalinity, bicarbonate as CaCO <sub>3</sub>	CR6	hexavalent chromium	NID	nickel, dissolved	ZND	zinc, dissolved
ALD	aluminum, dissolved	CUD	copper, dissolved	NH3N	ammonia (as nitrogen)		
AGD	silver, dissolved	FE	iron	NO3NO2N	nitrate/nitrite (as nitrogen)		
ASD	arsenic, dissolved	FETD	iron, dissolved	PBD	lead, dissolved		
BAD	barium, dissolved	FL	fluoride	SBD	antimony, dissolved		
BD	boron, dissolved	HGD	mercury, dissolved	SC	specific conductance		
BED	beryllium, dissolved	HYDX	alkalinity, hydroxide	SED	selenium, dissolved		
CAD	calcium, dissolved	KD	potassium, dissolved	SO4	sulfate		
CDD	cadmium, dissolved	MGD	magnesium, dissolved	TLD	thallium, dissolved		
CL	chloride	MND	manganese, dissolved	TDS	total dissolved solids		

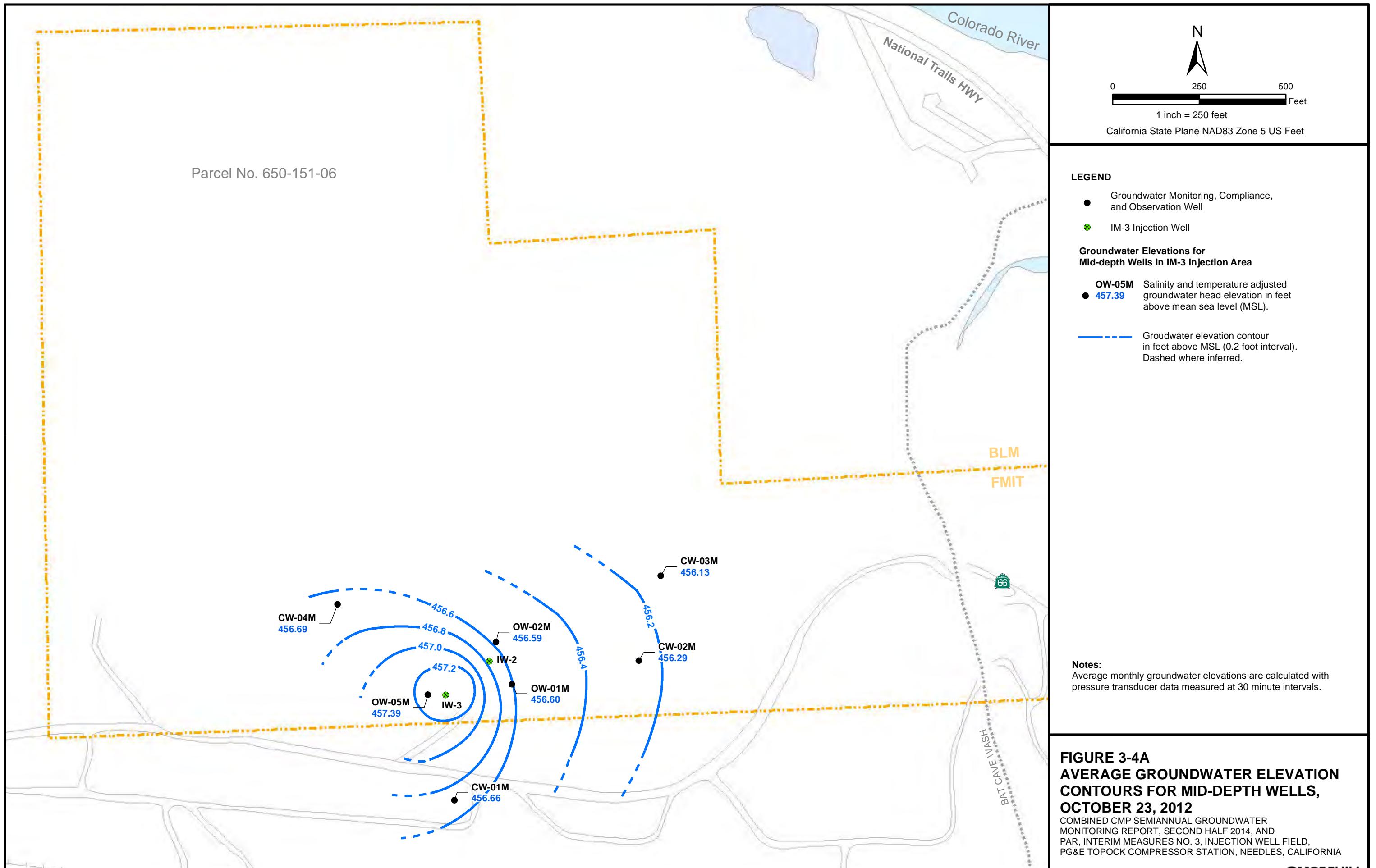
## **APPENDIX D**

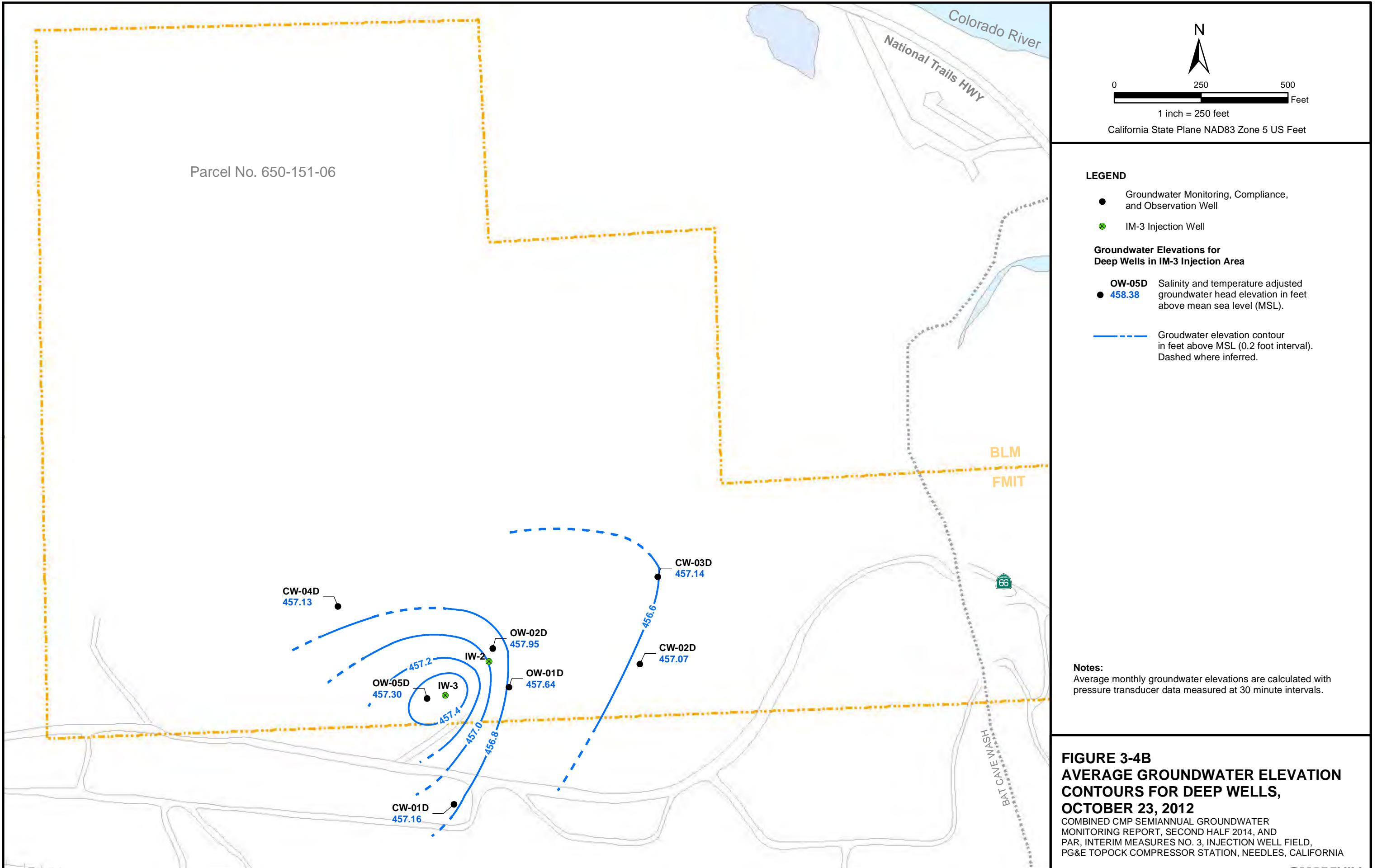
### **Historical Groundwater Elevation Contour Maps**











**FIGURE 3-4B  
AVERAGE GROUNDWATER ELEVATION  
CONTOURS FOR DEEP WELLS,  
OCTOBER 23, 2012**

COMBINED CMP SEMIANNUAL GROUNDWATER  
MONITORING REPORT, SECOND HALF 2014, AND  
PAR, INTERIM MEASURES NO. 3, INJECTION WELL FIELD,  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Path: \\Zinfandel\pro\PacificGasElectricCo\TopockProgram\GIS\MapFiles\2014\CMPC\FIG3-4B CMP GWE SecondHalf2014 LA.mxd Date Saved: 12/15/2014 2:32:07 PM

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