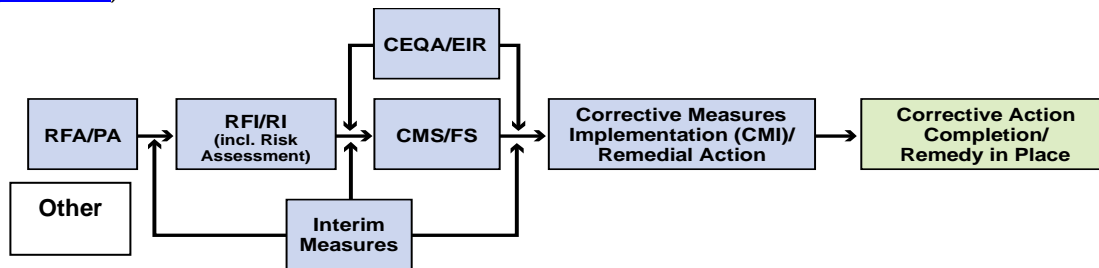


Topock Project Executive Abstract

<p>Document Title:</p> <p>Compliance Monitoring Program, Semiannual Groundwater Monitoring Report, Second Half 2013 (PGE20140115B)</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, 2014</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) – PG&E</p>
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<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<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>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's enforcement as an ARARs beginning August 2011.</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>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>	
<p>Brief Summary of attached document:</p> <p>The purpose of the Topock Compliance Monitoring Program (CMP) is twofold: (1) monitor changes in groundwater hydraulics and/or water quality of the aquifer in the injection well area, and (2) 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 the Second Half 2013, wells that exhibit water quality similar to the injected water include the middle- and deep-zone observation wells and certain middle- and all deep-zone compliance wells. Two of the three shallow-zone observation wells have not yet shown characteristics approaching injected water quality.</p> <p>This report presents groundwater analytical results and groundwater level data collected from the Second Half 2013 CMP monitoring event conducted in October 2013. During the Second Half 2013 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 April 2014.</p> <p>Written by: PG&E</p>	
<p>Recommendations:</p> <p>This report is for your information only.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements:</p>	
<p>Submittal of this report is a compliance requirement under DOI enforcement's as ARARs beginning August 2011.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	

Related Reports and Documents:

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



Legend

RFA/PA – RCRA Facility Assessment/Preliminary Assessment

RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)

CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study

CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9



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January 15, 2014

Pamela Innis
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United States Department of the Interior,
Office of Environmental Policy and Compliance
P.O. Box 2507-D (D-108)
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Denver, CO 80225-0007

Subject: *Compliance Monitoring Program, Semiannual Groundwater Monitoring Report, Second Half 2013, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California (PGE20140115B)*

Dear Ms. Innis:

Enclosed is the *Compliance Monitoring Program, Semiannual Groundwater Monitoring Report, Second Half 2013, Interim Measures No. 3, Pacific Gas and Electric Company [PG&E] Topock Compressor Station*. This monitoring report presents the results of the Second Half 2013 Compliance Monitoring Program groundwater monitoring event 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 concentrations and values for hexavalent chromium [Cr(VI)], chromium, total dissolved solids (TDS), and pH to be used to determine if contingency plan actions are necessary based on sample results. The water quality objectives concentrations that are used to trigger the contingency plan are Cr(VI) greater than 32.6 micrograms per liter ($\mu\text{g/L}$), chromium greater than 28.0 $\mu\text{g/L}$, 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 Second Half 2013 sampling event. The next CMP event is scheduled to occur in April 2014.

Please contact me at (805) 234-2257 if you have any questions regarding the Compliance Monitoring Program.

Sincerely,

A handwritten signature in blue ink that reads 'Yvonne Meeks'.

Yvonne Meeks
Topock Remediation Project Manager

Cc: Robert Perdue, Water Board
Jose Cortez, Water Board
Aaron Yue, DTSC
Christopher Guerre, DTSC

Enclosure

Compliance Monitoring Program Semiannual Groundwater Monitoring Report, Second Half 2013

**Interim Measure No. 3
PG&E Topock Compressor Station,
Needles, California
Document ID: PGE20140115B**

Prepared for
United States Department of the Interior

On behalf of
Pacific Gas and Electric Company

January 15, 2014

CH2MHILL®
155 Grand Avenue, Suite 800
Oakland, CA 94612

**Compliance Monitoring Program
Semiannual Groundwater Monitoring Report,
Second Half 2013**

**PG&E Topock Compressor Station,
Needles, California**

Prepared for
United States Department of the Interior
On behalf of
Pacific Gas and Electric Company

January 15, 2014

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

Serena Panzar

Serena Panzar
Professional Geologist, P.G. #8259



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Acronyms and Abbreviations

µg/L	micrograms per liter
ARAR	applicable or relevant and appropriate requirement
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	Interim Measure
IM-3	Interim Measure No. 3
IW	injection well
mg/L	milligrams per liter
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
OW	observation well
QAPP	quality assurance project plan
TDS	total dissolved solids
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirement
WQO	water quality objective

SECTION 1.0

Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The IM consists of groundwater extraction in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems are collectively referred to as Interim Measure No. 3 (IM-3). Currently, the IM-3 facilities include a groundwater extraction system, conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Figure 1 shows the location of the IM-3 extraction, conveyance, treatment, and injection facilities. (All figures and tables are provided at the end of this report.)

The *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area, Topock Compressor Station, Needles, California* (CH2M HILL, 2005a) (herein referred to as the Compliance Monitoring Plan) was submitted to the California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) on June 17, 2005. The Compliance Monitoring Plan and its addendum (CH2M HILL, 2005b) provide the objectives, proposed monitoring program, data evaluation methods, and reporting requirements for the Compliance Monitoring Program (CMP). Several modifications of the sampling and reporting procedures have been approved since 2005, as outlined in Exhibit 1.

EXHIBIT 1

Historical Modifications to the Compliance Monitoring Program

PG&E Topock Compliance Monitoring Program

Modification	Approval Date	Reference
Modification of reporting requirements	DTSC: June 9, 2006	DTSC, 2006
Reduction of constituents analyzed during quarterly sampling of CMP observation wells	Water Board: January 23, 2007 DTSC: January 22, 2007	Water Board, 2007a DTSC, 2007 CH2M HILL, 2006
Change from laboratory pH to field collected pH for reporting	Water Board: October 16, 2007 DTSC: January 22, 2008	Water Board, 2007b DTSC, 2008a
Modification of hexavalent chromium analytical methods to extend hold time to 28 days	Water Board: November 13, 2007 DTSC: January 22, 2008	Water Board, 2007c DTSC, 2008a
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	Water Board, 2008 DTSC, 2008b, 2009

From July 2005 through September 2011, PG&E was operating the IM-3 groundwater treatment system as authorized by Water Board Order No. R7-2004-0103 (issued October 13, 2004), Order No. R7-2006-0060 (issued September 20, 2006), and the revised Monitoring and Reporting Program (MRP) under Order No. R7-2006-0060 (issued August 28, 2008).

PG&E is currently performing the CMP as authorized by the United States Department of the Interior (DOI) waste discharge applicable or relevant and appropriate requirements (ARARs). The Waste Discharge Requirements (WDR Order No. R7-2006-0060) expired on September 20, 2011 and was replaced by DOI enforcement of the ARARs, as documented in correspondence among the Water Board, DOI, and PG&E during the summer of 2011. Specifically, the letter agreement issued July 26, 2011 from the Water Board to DOI (Water Board, 2011) requested:

- DOI concurrence that the WDRs are ARARs under the Comprehensive Environmental Response Compensation and Liability Act of 1980 response action ongoing at the site.

- DOI confirmation that it will enforce these WDRs pursuant to the Administrative Consent Agreement entered into by DOI and PG&E in 2005 in lieu of the Water Board's adoption of a new Board Order to replace the expiring Board Order that set forth the WDRs.
- DOI concurrence with the roles and responsibilities between DOI and the Water Board for monitoring and enforcement.

In its letter dated August 18, 2011, the DOI provided concurrence and confirmation as requested (DOI, 2011). PG&E confirmed these changes with a letter to the DOI and the Water Board dated September 7, 2011 (PG&E, 2011). These changes add the DOI as the receiving regulatory agency for the CMP reports, with the Water Board continuing to receive report copies. Work described in this report was performed in accordance with the ARARs established in the July 26, 2011 letter (Water Board, 2011).

The ARARs specify effluent limitations, prohibitions, specifications, and provisions for subsurface injection. The MRP contained within the ARARs specifies the requirements for the CMP to monitor the aquifer in the injection well area to ensure that the injection of treated groundwater is not causing an adverse effect on the aquifer water quality.

The injection system consists of two injection wells (IWs): IW-2 and IW-3. Operation of the treatment system was conditionally approved on July 15, 2005 (DTSC, 2005), and injection into IW-2 began on July 31, 2005. Table 1 provides a summary of the history of injection for IM-3.

Figure 2 shows the locations of the injection wells and the groundwater monitoring wells (observation wells [OWs] and compliance wells [CWs]) in the CMP. Table 2 provides a summary of information on well construction and sampling methods for all wells in the CMP.

As of October 2013, samples are collected from OWs and CWs, shown on Figure 2, according to the following schedule:

- Three OWs (OW-1S, OW-2S, and OW-5S) near the IM-3 injection well field are sampled semiannually (during the second and fourth quarters) for a limited suite of constituents.
- Six OWs (OW-1M, OW-1D, OW-2M, OW-2D, OW-5M, and OW-5D) are:
 - Sampled annually for a limited suite of constituents during the fourth quarter.
 - Sampled for a full suite of constituents one cluster at a time on a triennial (once every 3 years) schedule. Within each 3-year period, all OW middle and deep wells will be sampled for a full suite of constituents. The triennial sampling will occur during the annual event (fourth quarter).
- Eight CWs are sampled semiannually for a limited suite of constituents and annually (during the fourth quarter) for a full suite of constituents.

For semiannual events, laboratory analyses include total dissolved solids (TDS), turbidity, specific conductance, a reduced suite of metals, and several inorganic cations and anions. Annual and triennial sampling events for CWs and select OWs include chromium, hexavalent chromium [Cr(VI)], metals, specific conductance, TDS, turbidity, and major inorganic cations and anions. Groundwater elevation data and field water quality data—including specific conductance, temperature, pH, oxidation-reduction potential, dissolved oxygen, turbidity and salinity—are also measured during each monitoring event (CH2M HILL, 2005a).

This report presents the results of the Second Half 2013 CMP groundwater monitoring event.

SECTION 2.0

Second Half 2013 Activities

This section provides a summary of the monitoring and sampling activities completed during the Second Half 2013. The Second Half 2013 event was a semiannual event, an annual event, and a triennial event (hereafter referred to as an annual event) conducted from October 8 through 10, 2013 and consisted of the following:

- Water quality samples were collected from nine observation and eight compliance monitoring wells.
- Groundwater elevations and field water quality data were collected prior to sampling.
- Two duplicate samples were collected at wells CW-4M and OW-2S to assess field sampling and analytical quality control.

Continuous groundwater elevation data were collected using pressure transducers/data loggers at five of the 17 CMP wells and were downloaded monthly during the reporting period.

The sampling methods, procedures, field documentation of the CMP sampling, water level measurements, and field water quality monitoring were performed in accordance with the *Sampling, Analysis, and Field Procedures Manual, Revision 1, PG&E Topock Compressor Station, Needles, California* (CH2M HILL, 2005c) and addendums.

CMP groundwater samples were analyzed by Truesdail Laboratories, Inc. in Tustin, California and CH2M HILL Applied Sciences Laboratory in Corvallis, Oregon, both California-certified analytical laboratories. Analytical methods, sample volumes and containers, sample preservation, and quality control sample requirements were in accordance with the *Sampling, Analysis, and Field Procedures Manual, Revision 1, PG&E Topock Compressor Station, Needles, California* (CH2M HILL, 2005c) and addendums. Data validation and management were conducted in accordance with the quality assurance and quality control requirements in the *PG&E Program Quality Assurance Project Plan, Revision 2* (QAPP) (CH2M HILL, 2012) and QAPP Addendum (CH2M HILL, 2008).

Second Half 2013 Results

This section is a summary of the results of the CMP groundwater sampling conducted during the Second Half 2013. Figure 2 presents the locations of the CMP groundwater wells.

The data presented include results for Cr(VI), chromium, specific conductance, metals, TDS, turbidity, and major inorganic cations and anions. Laboratory data quality review, water level measurements, and water quality field parameter data are also presented in this section. The laboratory reports and field data sheets for the Second Half 2013 monitoring event are presented in Appendices A and B, respectively.

3.1 Analytical Results

Three observation wells and eight compliance wells were sampled during the Second Half 2013 sampling event. Analytical results for Cr(VI), chromium, other metals, and general chemistry parameters are presented in Tables 3, 4, and 5, as discussed below. Interim action levels/water quality objectives (WQOs) were updated on August 8, 2006, when PG&E submitted a revised contingency plan flowchart for groundwater quality changes associated with the injection system. The contingency plan specifies the concentrations and values for Cr(VI), chromium, TDS, and pH to be used to determine whether contingency plan actions were necessary based on sample results. A modification of the CMP contingency plan pH range was approved by the Water Board and DTSC in 2008 (Water Board, 2008; DTSC, 2008b).

3.1.1 Hexavalent Chromium and Chromium

Table 3 presents the Cr(VI) and chromium analytical results for groundwater in the shallow, middle, and deep wells from the Second Half 2013 CMP sampling event. For shallow wells, the maximum detected Cr(VI) concentration was 22.9 micrograms per liter ($\mu\text{g/L}$) in well OW-2S on October 10, 2013. For the middle wells, the maximum detected Cr(VI) concentration was 7.0 $\mu\text{g/L}$ in well CW-3M on October 8, 2013. For the deep wells, the maximum detected Cr(VI) concentration was 0.66 $\mu\text{g/L}$ in well CW-3D on October 8, 2013. During the Second Half 2013 sampling event, no Cr(VI) sample result exceeded the WQO trigger level of 32 $\mu\text{g/L}$.

For shallow wells, the maximum detected chromium concentration was 22.0 $\mu\text{g/L}$ in well OW-2S on October 10, 2013. For the middle wells, the maximum detected chromium concentration was 6.3 $\mu\text{g/L}$ in well CW-3M on October 8, 2013. For the deep wells, chromium was not detected in any sample. During the Second Half 2013 sampling event, no chromium sample result exceeded the WQO trigger level of 28 $\mu\text{g/L}$. Hence, the contingency plan was not triggered for Cr(VI) nor chromium.

3.1.2 Other Metals and General Chemistry

Table 4 presents the other metals results for the CMP groundwater wells sampled during the Second Half 2013. Metals detected in the Second Half 2013 sampling event included arsenic, barium, boron, calcium, magnesium, molybdenum, nickel, potassium, sodium, and vanadium. In general, concentrations of metals detected during the Second Half 2013 sampling event are similar to those detected in previous sampling events.

Table 5 presents other inorganic analyte results from the CMP wells. During the Second Half 2013, the sampling results from all wells were within the WQOs for TDS (less than 10,800 milligrams per liter [mg/L]) and pH (between 6.2 and 9.2). Sampling results for TDS varied from 1,030 mg/L in well OW-2S to 4,740 mg/L in well CW-3M. Field pH varied from 7.1 in well CW-4M to 7.9 in wells CW-2D and OW-2S.

3.2 Analytical Data Quality Review

The laboratory analytical data generated from the Second Half 2013 CMP 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 (CH2M HILL, 2012) and QAPP Addendum (CH2M HILL, 2008). A detailed discussion of data quality for CMP sampling data is presented in the data validation reports, which are kept in the project file and are available upon request.

3.2.1 Matrix Interference

Matrix interference can affect the sensitivity for Cr(VI) when using Method E218.6 and can result in elevated reporting limits for nondetect samples. Six nondetect samples exhibited a matrix interference issue that required a dilution to achieve satisfactory matrix spike recovery, resulting in an elevated reporting limit. The sample results were qualified, but no flags were added.

3.2.2 Matrix Spike Samples

Matrix spike acceptance criteria were met.

3.2.3 Quantitation and Sensitivity

With the exception of the matrix interference issues discussed in Section 3.2.1, all method and analyte combinations met the project reporting limit objectives.

3.2.4 Holding-time Data Qualification

Method holding-time requirements were met.

3.2.5 Field Duplicates

One field duplicate pair had a relative percent difference greater than the upper control limit for iron (SW6010B, 20 percent), the results were qualified during validation as estimated (flagged "J"). All other field duplicate acceptance criteria were met.

3.2.6 Method Blanks

All method blank criteria were met.

3.2.7 Equipment Blanks

Equipment blank acceptance criteria were met.

3.2.8 Laboratory Duplicates

One laboratory duplicate for dissolved iron (E200.7) had a recovery that differed from the parent sample by more than 20 percent relative difference. The nondetect parent sample result was qualified during data validation as estimated (flagged "J"). All other laboratory duplicate acceptance criteria were met.

3.2.9 Laboratory Control Sample

All laboratory control sample acceptance criteria were met.

3.2.10 Calibration

Initial and continuing calibrations were performed as required by the methods. All calibration criteria were met.

3.2.11 Conclusion

For the Second Half 2013 CMP sampling event, the completeness objectives were met for all method and analyte combinations. The analyses and data quality met the QAPP and laboratory method quality control criteria, except as noted above. Overall, the analytical data are considered acceptable for the purpose of the CMP.

3.3 Influence of Treated Water

3.3.1 Post-injection versus Pre-injection

Injection of treated water began on July 31, 2005. Originally, under WDR No. R7-2006-0060 for the IM-3 groundwater treatment system and now the DOI's affirmation of the WDR as an ARAR, PG&E is required to submit monitoring reports semiannually regarding operation of the system. These reports contain the analytical results of treated water effluent sampling and, as such, the reports are useful in determining the baseline water quality of the treated water being injected into the IM-3 injection well field. Table 6 provides selected effluent water analytical results from three of the monthly reports: August 29, 2005, April 7, 2010, and October 1, 2013. While there are differences among some parameters in these samples, a number of parameters show relatively

consistent concentrations in the effluent over time. Analytes that are relatively consistent over the injection time period include Cr(VI), chromium, fluoride, dissolved molybdenum, nitrate/nitrite as nitrogen, sulfate, and TDS. The consistency of these seven constituents provide a characterization of the effluent that can serve as a basis for determining whether a groundwater monitoring well is being affected by injection. In general terms, treated water has the following characteristics (based on review of August 2005 through October 2013 effluent characteristics):

- Cr(VI): typically nondetect (or below 1.0 µg/L)
- Chromium: typically nondetect (or below 1.0 µg/L)
- Fluoride: approximately 2 mg/L
- Molybdenum: approximately 15-20 µg/L
- Nitrate/nitrite as nitrogen: approximately 3 mg/L
- Sulfate: approximately 500 mg/L
- TDS: approximately 4,000 mg/L

These treated water quality characteristics are meant to serve as a general guideline and not as a statistically representative sampling of the treated water quality over time.

Table 6 also lists the results of baseline sampling for the observation wells and compliance wells. A full set of nine OW groundwater samples was collected on July 27 and 28, 2005, and a full set of eight CW groundwater samples was collected on September 15, 2005. These samples are considered representative of conditions unaffected by injection and serve to characterize the pre-injection water quality. In comparing these sampling results to the treated injection water sampling results, there are some similarities in the constituent concentrations. For example, most of the pre-injection OW or CW deep well samples (OW-1D, OW-2D, OW-5D, CW-3D, and CW-4D) contain no detectable Cr(VI) or chromium, which is similar to the treated injection water. Most of the well samples show concentrations similar to the treated water for two or three constituents but observable differences in concentration from the treated water for the remaining four or five. By considering the entire suite of seven analytes and focusing on those parameters that show differences, it is relatively easy to distinguish between the pre-injection water quality at the monitoring wells and the treated water effluent quality.

Table 7 presents a comparison between the treated water quality and the results from the most recent sampling event (the Second Half 2013 sampling event). These samples were collected after approximately 8.2 years of injection. While the pre-injection OW and CW sample results were significantly different from the treated water quality, a number of the Second Half 2013 sample results show a marked similarity to the treated water results. The following wells display the general characteristics of treated water: OW-1M, OW-1D, OW-2M, OW-2D, OW-5M, OW-5D, CW-1M, CW-1D, CW-2D, CW-3D, and CW-4D. These wells are at locations and depths where the treated water injection front has largely replaced the local pre-injection groundwater. Wells OW-1S, CW-2M, CW-3M, and CW-4M have chemical characteristics approaching that of treated water. To date, shallow observation wells OW-2S and OW-5S show little or no water quality effects due to injection of treated water, indicating that injected water has not yet reached the screened intervals at these locations.

3.3.2 Water Quality Hydrographs

Trend data can be used to determine when a rapid change has occurred between sampling events, such as the arrival of the injection front. It can also be used to look at more gradual changes that occur over several sampling events, such as seasonal effects or the interaction of treated water with local groundwater and host aquifer material. Eleven analytes were selected for time-series analysis; these analytes are considered to be most representative of the IM-3 injection well field area and have sufficient detections to make time-series analysis useful. The analytes include chloride, chromium, fluoride, Cr(VI), molybdenum, nitrate/nitrite as nitrogen, lab pH, sodium, sulfate, TDS, and vanadium. Water quality hydrographs (time-series plots) of these 11 analytes in each OW and CW during Second Half 2013 within the IM-3 injection well field are presented in Figures 3A through 3E.

Observation well water quality hydrographs are presented in Figures 3A through 3C. These hydrographs show the same overall patterns: wells that are identified as affected by treated water injection show a shift in water quality for characteristic parameters, while those identified as being unaffected by injection show no similar shift in water

quality. The water quality change brought on by the arrival of the treated water injection front can be either gradual (OW-5M) or step-wise (OW-2M), with most affected wells showing a pattern of change somewhere between the two. Based on the variability in response, it is inferred that the movement of treated water is non-uniform laterally between wells. This variability in lateral movement can be inferred from differences in the water quality hydrographs in both the mid-depth and deep wells. The OW shallow-depth wells (OW-2S and OW-5S) show little water quality variation over time. Sodium, chloride, molybdenum, sulfate, and TDS are particularly consistent with baseline pre-injection concentrations and show that the local groundwater quality at these shallow depths is not being affected by injection of treated water or outside water sources.

Compliance well water quality hydrographs are presented in Figures 3D and 3E. Wells CW-1M, CW-1D, CW-2D, CW-3D, and CW-4D show trends in chromium, Cr(VI), molybdenum, nitrate/nitrite as nitrogen, sulfate, and TDS similar to the treated water. Wells CW-2M, and CW-4M show decreasing trends in Cr(VI) and chromium. These changes are attributed to the gradual arrival of treated injection water. Similarly, CW-3M is showing a more subtle decrease in Cr(VI) and a rise in sulfate that both suggest the influence of treated water beginning to arrive at this well.

3.4 Water Level Measurements

Table 8 presents the manual water level measurements and groundwater elevations from Fourth Quarter 2013 per the DOI ARAR requirements (DOI, 2011). In compliance with Condition No. 2 of DTSC's 2009 conditional approval letter (DTSC, 2009), confirmation was obtained from the IM-3 Plant Manager that the IM-3 plant was operating normally on both the day before and the days of CMP water level collection, with no backwash or unplanned shutdowns.

Water level measurements were collected continuously (measurements collected every half hour) with pressure transducers to produce hydrographs for select wells. Figures 4A through 4C present hydrographs that illustrate groundwater elevation trends and vertical hydraulic gradients observed over the Second Half 2013 reporting period at specified observation monitoring wells.

Groundwater elevation maps for shallow, middle, and deep wells are provided as Figures 5A through 5C. A snapshot of water level elevations was used to produce the groundwater elevation contour plots. The date is noted on each figure.

3.4.1 Groundwater Gradient Characteristics

The monitoring wells in the middle and deep zone categories are screened over a wide elevation range (74 feet in the middle zone wells and 59 feet in the deep wells). Because there are natural vertical gradients as well as vertical gradients induced by injection, the groundwater elevations for wells in each category will reflect a mixture of vertical and horizontal gradients in groundwater elevation; therefore, the groundwater contours in Figures 5B and 5C should be viewed as approximate.

The injection well field is in the East Mesa area of the Topock site, as shown on Figure 2. Overall sitewide water level contour maps for shallow wells are prepared annually under a separate report, with flow consistently being shown to move to the east/northeast across the uplands portions of the site (CH2M HILL, 2013).

The effects of injection in the IM-3 injection well field are superimposed on the more regional Topock site flow system and, as expected, a groundwater mound can be seen around the injection wells. This mound is centered on the active injection wells IW-2 and IW-3. The potentiometric surfaces in prior CMP reports mapped the growth of the groundwater mound over time and show that, after 8.2 years of injection, the mound increased and then stabilized in height at several tenths of a foot in elevation above the surrounding water level elevations. Figures 5B and 5C present groundwater elevation contours for the snapshot groundwater elevation of the mound within the middle and deep wells using October 21, 2013 groundwater elevations. As expected with a mound, the potentiometric surface of the deep wells is slightly broader, while the potentiometric surface of the middle wells is more localized to the vicinity of the injection wells. The mound is elliptical in shape, with the major axis running in a southwest to northeast direction. The lower gradients (broader contours) in the direction of the major axis

are an indication that the aquifer permeabilities are greater in this direction, indicating that there may be a preferred direction to flow in this area.

The vertical gradient in the IM-3 injection well field area is directed upward at all of the CW and OW well clusters and also upward between each of the depth intervals in those same well clusters. Table 9 presents the vertical gradient data calculated using the October 21, 2013 groundwater elevations. The magnitude of the vertical gradients is similar between clusters and between the depth intervals, indicating that the vertical gradient is generally of the same order of magnitude throughout the injection area. A component of the vertical gradients calculated in the vicinity of the IM-3 injection well field is likely related to the injection of treated water in the lower portions of the aquifer. The observed groundwater gradients in the IM-3 injection well field are consistent with expected regional groundwater flow within the southern Mohave Valley.

3.5 Field Parameter Data

A field water quality instrument and flow-through cell were used to measure water quality parameters during well purging and groundwater sampling. The measured field parameters included specific conductance, temperature, pH, oxidation-reduction potential, dissolved oxygen, turbidity, salinity, and water level elevations before sampling. Table 10 presents a summary of the field water quality data measured during the Second Half 2013 monitoring event. Field data sheets for the Second Half 2013 event are presented in Appendix B.

3.6 ARAR Monitoring Requirements

Table 11 identifies the laboratory that performed each analysis and lists the following information as required by the ARARs for the Second Half 2013 monitoring event:

- 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

Status of Monitoring Activities

4.1 Semiannual Monitoring

The next semiannual monitoring event will occur in April during the First Half of 2014. This CMP monitoring event will include the sampling and analysis scope presented in Attachment A of DOI November 18, 2011 letter (DOI, 2011). The groundwater monitoring report for this CMP monitoring event will be submitted by July 15, 2014.

4.2 Annual Monitoring

The next annual monitoring event, which is also a semiannual event, will occur in October during the second half of 2014. The groundwater monitoring report for this CMP monitoring event will be submitted by January 15, 2015.

References

- California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2005. Letter to PG&E. "Conditional Approval for the Start Up and Operation of the Interim Measures No. 3 Treatment System and Injection Wells, Pacific Gas & Electric Company, Topock Compressor Station." July 15.
- _____. 2006. Letter to PG&E. "Third and Fourth Quarter Groundwater Monitoring Reports, Compliance Monitoring Program for Interim Measures No. 3 Injection Well Field Area, Pacific Gas & Electric Company, Topock Compressor Station, Needles, California." June 9.
- _____. 2007. Letter to PG&E. "Conditional Approval of Request for Reduced Groundwater Sampling Frequency for Select Constituents at Pacific Gas & Electric Company, Topock Compressor Station, Needles, California." January 22.
- _____. 2008a. Letter to PG&E. "Re: Analytical Methods for WDR Monitoring Programs." January 22.
- _____. 2008b. Letter to PG&E. "PG&E Topock: pH Modification to the CMP." December 12.
- _____. 2009. Letter to PG&E. "Conditional Approval of Modifications to the Compliance Monitoring Program, Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles California (EPA ID No. CAT080011729)." September 3.
- California Regional Water Quality Control Board, Colorado River Basin Region (Water Board). 2007a. Letter to PG&E. "Conditional Approval of Limited Sampling Frequency for Selected Metals/General, PG&E, Topock Compressor Station, Needles, California." January 23.
- _____. 2007b. Letter to PG&E. "Clarification of Monitoring and Reporting Program (MRP) Requirements, Board Orders Nos. R7-2006-0060 and R7-2004-0080, Topock Compressor Station, San Bernardino County." October 16.
- _____. 2007c. Letter to PG&E. "Clarification of Monitoring and Reporting Program (MRP) Requirements, Board Orders Nos. R7-2006-0060, R7-2006-0008, R7-2004-0080, and R7-2007-0015, Topock Compressor Station, San Bernardino County." November 13.
- _____. 2008. Letter to PG&E. "Revision of Monitoring and Reporting Program (MRP), Board Order No. R7-2006-0060 Revision 1, Topock Compressor Station, San Bernardino County." August 28.
- _____. 2011. Letter to DOI. "Enforcement of Applicable or Relevant and Appropriate Requirements for the Interim Measure 3 Facility – PG&E Topock Compressor Station Site." July 26.
- CH2M HILL. 2005a. *Groundwater Compliance Monitoring Plan for Interim Measure No. 3 Injection Area, Topock Compressor Station, Needles, California*. June 17.
- _____. 2005b. *Addendum to the Compliance Monitoring Plan for the IM No. 3 Injection Area, Topock Compressor Station, Needles, California*. December 13.
- _____. 2005c. *Sampling, Analysis, and Field Procedures Manual, Revision 1, PG&E Topock Compressor Station, Needles, California*. March 31.
- _____. 2006. *Request for Approval to Implement Limited Sampling Frequency for Selected Metals/ General Minerals for PG&E Topock Compressor Station, Needles, California*. December 1.
- _____. 2008. *PG&E Program Quality Assurance Project Plan, Addendum to the PG&E Program Quality Assurance Project Plan for the Topock Groundwater Monitoring and Investigation Projects*. December.
- _____. 2012. *PG&E Program Quality Assurance Project Plan, Revision 2*. August.

- _____. 2013. *Fourth Quarter 2012 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.
- Pacific Gas and Electric Company (PG&E). 2011. Letter to DOI and Water Board. "Re: Applicable or Relevant and Appropriate Requirements (ARARs) for the Waste Discharge associated with Interim Measure 3 Facility at PG&E's Topock Compressor Station." September 7.
- _____. 2013. Letter to DOI and Water Board. "Signature Delegation for Discharger Monitoring Reports, ARAR Monitoring Requirements, Pacific Gas and Electric Company, Topock Compressor Station, Interim Measures No. 3, Needles, California." February 27.
- United States Department of the Interior (DOI). 2011. Letter to PG&E and Water Board. "Enforcement of Applicable or Relevant and Appropriate Requirements for the Interim Measure 3 Facility – PG&E Topock Compressor Station Site." August 18.

SECTION 6.0

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.

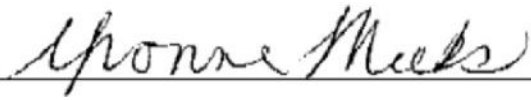
Signature: 
Name: Yvonne J. Meeks
Company: Pacific Gas and Electric Company
Title: Topock Environmental Remediation Project Manager
Date: January 15, 2014

TABLE 1

Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2013
PG&E Topock Compliance Monitoring Program

Time Period	Injection Status
July 31, 2005 to Fourth Quarter 2005	Injection occurred at IW-2.
First Quarter 2006	Injection occurred primarily at IW-2 except during intervals of operational testing, when injection was divided equally between IW-2 and IW-3.
Second Quarter 2006	Injection occurred at IW-2.
Third Quarter 2006	In August 2006, IW-2 went offline for routine maintenance, and injection commenced at IW-3.
Fourth Quarter 2006	Injection occurred at IW-3, except during routine maintenance.
First Quarter 2007	Injection occurred at IW-3 and transitioned over to IW-2 on March 8.
Second Quarter 2007	Injection occurred at IW-3 from April 3 through June 20. Injection switched to IW-2 on June 20 and continued through July 20, 2007.
Third Quarter 2007	Injection occurred at IW-3 after July 20. Injection occurred at IW-2 on August 30 for an injection test and then returned to IW-3 after August 31.
Fourth Quarter 2007	Injection occurred at IW-3 and then switched to IW-2 on September 25 for routine maintenance. Injection returned to IW-3 after October 9.
First Quarter 2008	Injection occurred at IW-3 only. From February 5 through February 13, well maintenance activities were conducted at IW-2.
Second Quarter 2008	Injection occurred at IW-3 only. IM-3 system offline from April 21 through April 28 due to routine maintenance. Backwashing was performed at IW-3 on April 9, May 7, May 15, May 22, June 3, and June 4, 2008.
Third Quarter 2008	Injection occurred primarily at IW-3. Injection also occurred at IW-2 for short interval on July 25 and from August 12 – August 31, 2008. Backwashing was performed at IW-3 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-2 on September 9 - September 11, 2008.
Fourth Quarter 2008	Injection occurred at IW-3 and then switched to IW-2 on September 23. Injection returned to IW-3 on October 7 and switched back to IW-2 on October 21. Injection primarily occurred at IW-2 until November 11 when it switched to IW-3 until December 3, 2008. Injection continued at IW-2 until December 16, 2008 and occurred concurrently and continued at IW-3 on December 11, 2008.
First Quarter 2009	Injection switched to IW-2 on December 30, 2008. On January 13, 2009 injection transitioned to IW-3. Backwashing events were performed periodically during the intervals when each injection well was offline. Routine and scheduled maintenance occurred 12/18/08 and 1/21/09 at which time both wells were offline.
Second Quarter 2009	Injection continued at IW-3 until April 20, 2009. Injection ceased from April 20, 2009 to April 27, 2009 due to routine maintenance after which injection continued at IW-3 until May 26, 2009 when it transitioned to IW-2. Injection continued at IW-2 until June 9, 2009 when it switched to IW-3. Injection returned to IW-2 on June 24, 2009.
Third Quarter 2009	IM-3 injection alternates between the two wells approximately every two weeks. Injection continued at IW-2 until July 8, when it transitioned to IW-3. Injection ceased from July 23 to 27, 2009 when it continued at IW-3 until September 9, 2009. Unplanned downtime occurred from September 9-14, 2009. On September 16, 2009 injection continued at IW-2, except during times of routine maintenance or otherwise mentioned.
Fourth Quarter 2009	Injection occurred at IW-2 until November 25, 2009 when it switched to IW-3. Injection continued at IW-3, except during times of routine maintenance.
First Half 2010	Injection occurred mainly at IW-3 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

TABLE 1

Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2013*PG&E Topock Compliance Monitoring Program*

Time Period	Injection Status
	planned shutdown. On April 22, 2010, injection resumed at IW-3 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-2 with the exception of the following periods when it primarily occurred at IW-3: 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-3 with the exception of the following periods when it primarily occurred at IW-2: 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.
Second Half 2011	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: July 14 through August 3, August 10 through 13, September 11 through 22, October 6 through10; 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-3 with the exception of the following periods when it primarily occurred at IW-2: 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-3 with the exception of the following periods when it primarily occurred at IW-2: 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-3 with the exception of the following periods when it primarily occurred at IW-2: 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-3 with the exception of the following periods when it primarily occurred at IW-2: 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.

TABLE 2

Well Construction and Sampling Summary for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Well ID	Site Area	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Well Casing (inches)	Well Depth (ft btoc)	Depth to Water (ft btoc)	Sampling System	Typical Purge Rate (gpm)	Typical Purge Volume (gallons)	Pump Depth (ft bgs)	Transducer Status	Remarks
IM Compliance Wells												
CW-01M	East Mesa	566.07	140 - 190	2 (PVC)	190.0	109.0	Temp Redi-Flo AR	2	42	165		
CW-01D	East Mesa	566.46	250 - 300	2 (PVC)	300.2	109.1	Temp Redi-Flo AR	3	98	180		
CW-02M	East Mesa	549.45	152 - 202	2 (PVC)	208.3	92.6	Temp Redi-Flo AR	2	56	195		
CW-02D	East Mesa	549.43	285 - 335	2 (PVC)	355.0	92.2	Temp Redi-Flo AR	3	134	159		
CW-03M	East Mesa	534.10	172 - 222	2 (PVC)	222.0	77.5	Temp Redi-Flo AR	2	74	180		
CW-03D	East Mesa	534.14	270 - 320	2 (PVC)	340.0	76.9	Temp Redi-Flo AR	3	134	143		
CW-04M	East Mesa	518.55	119.5 - 169.5	2 (PVC)	169.8	61.4	Temp Redi-Flo AR	2	56	160		
CW-04D	East Mesa	518.55	233 - 283	2 (PVC)	303.0	61.3	Temp Redi-Flo AR	3	124	134		
IM Observation Wells												
OW-01S	East Mesa	550.21	83.5 - 113.5	2 (PVC)	113.5	93.5	Temp Redi-Flo AR	1	10.2	100	Active	
OW-01M	East Mesa	550.36	165 - 185	2 (PVC)	185.8	93.3	Temp Redi-Flo AR	3	48	109.6		
OW-01D	East Mesa	550.36	257 - 277	2 (PVC)	277.3	93.0	Temp Redi-Flo AR	3	94	111.4		
OW-02S	East Mesa	548.88	71 - 101	2 (PVC)	103.6	92.2	Temp Redi-Flo AR	1	15	100	Active	
OW-02M	East Mesa	548.52	190 - 210	2 (PVC)	210.3	91.4	Temp Redi-Flo AR	2	61	111.4		
OW-02D	East Mesa	549.01	310 - 330	2 (PVC)	340.0	91.4	Temp Redi-Flo AR	2	127	110.3		
OW-05S	East Mesa	551.83	70 - 110	2 (PVC)	110.3	95.0	Temp Redi-Flo AR	1	8	100	Active	
OW-05M	East Mesa	551.81	210 - 250	2 (PVC)	250.3	93.9	Temp Redi-Flo AR	2	80	112.5	Active	
OW-05D	East Mesa	552.41	300 - 320	2 (PVC)	350.0	94.7	Temp Redi-Flo AR	3	131	113.2	Active	

Notes:

amsl above mean sea level
 bgs below ground surface
 btoc below top of polyvinyl chloride (PVC) casing
 gpm gallons per minute
 Redi-Flo AR adjustable-rate electric submersible pump
 Temp temporary

Depth to water for each well was collected on April 2013.
 All wells were purged and sampled using 3 well-volume method.

TABLE 3
Chromium Results for Groundwater Samples, Second Half 2013
PG&E Topock Compliance Monitoring Program

Method:		E218.6	E200.8
Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)
CW-01M	10/10/2013	ND (1.0)	ND (1.0)
CW-01D	10/10/2013	ND (1.0)	ND (1.0)
CW-02M	10/8/2013	2.40	2.50
CW-02D	10/8/2013	0.54	ND (1.0)
CW-03M	10/8/2013	7.00	6.30
CW-03D	10/8/2013	0.66	ND (1.0)
CW-04M	10/9/2013	5.40	5.60
CW-04M	10/9/2013 (FD)	5.40	5.70
CW-04D	10/8/2013	0.63	ND (1.0)
OW-01S	10/9/2013	7.40	8.40
OW-01M	10/9/2013	1.20	1.50
OW-01D	10/9/2013	ND (1.0)	ND (1.0)
OW-02S	10/10/2013	22.9	22.0
OW-02S	10/10/2013 (FD)	22.8	21.7
OW-02M	10/10/2013	1.60	1.60
OW-02D	10/10/2013	ND (1.0)	ND (1.0)
OW-05S	10/9/2013	18.2	17.1
OW-05M	10/9/2013	ND (1.0)	ND (1.0)
OW-05D	10/9/2013	ND (1.0)	ND (1.0)

Notes:

FD field duplicate
ND parameter not detected at the listed reporting limit
µg/L micrograms per liter

Hexavalent Chromium and Chromium are field filtered.

TABLE 4
Metals Results for Groundwater Samples, Second Half 2013
PG&E Topock Compliance Monitoring Program

Method:		Dissolved E200.7, E200.8																								
Location ID	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead µg/L	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Boron	Calcium	Iron ^a	Iron ^b	Potassium	Magnesium	Sodium
CW-01M	10/10/2013	ND (20)	ND (2.0)	1.60	84.0	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	17.2	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	0.912	175	ND (0.02)	ND (0.02)	15.5	14.6	1400
CW-01D	10/10/2013	ND (20)	ND (2.0)	1.30	21.6	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	19.9	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	0.90	164	ND (0.02)	ND (0.02)	13.9	16.3	1400
CW-02M	10/8/2013	ND (20)	ND (2.0)	2.10	63.9	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	16.6	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	1.12	130	ND (0.02)	ND (0.02)J	14.6	10.3	1340
CW-02D	10/8/2013	ND (20)	ND (2.0)	3.50	11.3	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	12.8	3.10	ND (5.0)	ND (5.0)	ND (1.0)	5.30	ND (20)	0.964	79.2	ND (0.02)	ND (0.02)	13.7	4.20	1530
CW-03M	10/8/2013	ND (20)	ND (2.0)	1.30	44.2	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	21.1	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	1.07	198	ND (0.02)	ND (0.02)	17.3	15.8	1620
CW-03D	10/8/2013	ND (20)	ND (2.0)	1.60	13.2	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	14.4	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	1.01	75.0	ND (0.02)	ND (0.02)	14.0	5.37	1470
CW-04M	10/9/2013	ND (20)	ND (2.0)	2.20	87.1	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	10.1	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	0.857	177	ND (0.02)J	ND (0.02)	15.6	14.5	1300
CW-04M	10/9/2013 FD	ND (20)	ND (2.0)	2.20	90.4	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	9.60	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	0.854	173	0.0775 J	ND (0.02)	15.9	14.8	1320
CW-04D	10/8/2013	ND (20)	ND (2.0)	3.60	16.2	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	19.0	2.80	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	1.07	116	ND (0.02)	ND (0.02)	14.1	7.57	1480
OW-01S	10/9/2013	---	---	---	---	---	---	---	---	---	---	---	5.90	---	---	---	---	---	---	---	---	---	---	---	---	801
OW-01M	10/9/2013	---	---	---	---	---	---	---	---	---	---	---	11.1	---	---	---	---	---	---	---	---	---	---	---	---	1480
OW-01D	10/9/2013	---	---	---	---	---	---	---	---	---	---	---	20.7	---	---	---	---	---	---	---	---	---	---	---	---	1440
OW-02S	10/10/2013	---	---	---	---	---	---	---	---	---	---	---	34.7	---	---	---	---	---	---	---	---	---	---	---	---	391
OW-02S	10/10/2013 FD	---	---	---	---	---	---	---	---	---	---	---	34.6	---	---	---	---	---	---	---	---	---	---	---	---	375
OW-02M	10/10/2013	ND (20)	ND (2.0)	1.60	41.0	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	16.3	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	0.992	134	ND (0.02)	ND (0.02)	16.6	22.8	1360
OW-02D	10/10/2013	ND (20)	ND (2.0)	3.50	15.8	ND (0.5)	ND (1.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (0.5)	ND (0.4)	18.7	ND (2.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	0.917	119	ND (0.02)	ND (0.02)	17.5	28.2	1420
OW-05S	10/9/2013	---	---	---	---	---	---	---	---	---	---	---	15.5	---	---	---	---	---	---	---	---	---	---	---	---	486
OW-05M	10/9/2013	---	---	---	---	---	---	---	---	---	---	---	17.0	---	---	---	---	---	---	---	---	---	---	---	---	1620
OW-05D	10/9/2013	---	---	---	---	---	---	---	---	---	---	---	18.2	---	---	---	---	---	---	---	---	---	---	---	---	1800

NOTES:
FD field duplicate
ND parameter not detected at the listed reporting limit
mg/L milligrams per liter
µg/L micrograms per liter
--- data not collected or available
J concentration estimated by laboratory or data validation

^a Total Iron
^b Dissolved Iron

TABLE 5
Other Inorganics Results for Groundwater Samples, Second Half 2013
PG&E Topock Compliance Monitoring Program

Method:		E 120.1	Field	SM2540C	SM2130B	E300.0	E300.0	E300.0	E353.2	SM2320B	SM4500NH3D
Location ID	Sample Date	Specific Conductance (µmhos/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 CaCo3 (mg/L)	Ammonia as Nitrogen (mg/L)
CW-01M	10/10/2013	6660	7.5	4250	ND (0.1)	2130	1.92	503	3.02	50.0	ND (0.5)
CW-01D	10/10/2013	6460	7.3	4130	ND (0.1)	2110	2.34	494	2.88	47.0	ND (0.5)
CW-02M	10/8/2013	6590	7.8	4200	0.103	2120	2.95	507	2.90	54.0	ND (0.5)
CW-02D	10/8/2013	6680	7.9	4140	0.130	2390	2.67	518	2.93	55.0	ND (0.5)
CW-03M	10/8/2013	7840	7.5	4740	ND (0.1)	2640	2.78	481	1.78	48.0	ND (0.5)
CW-03D	10/8/2013	6600	7.7	4260	ND (0.1)	2130	3.55	512	2.94	58.0	ND (0.5)
CW-04M	10/9/2013	6360	7.1	4100	ND (0.1)	2060	1.84	454	2.59	54.0	ND (0.5)
CW-04M	10/9/2013 (FD)	6260	FD	4120	ND (0.1)	2060	1.77	454	2.61	50.0	ND (0.5)
CW-04D	10/8/2013	6710	7.8	4260	0.110	2150	3.01	511	2.92	50.0	ND (0.5)
OW-01S	10/9/2013	5190	7.3	3870	0.212	1730	1.67	372	3.08	---	---
OW-01M	10/9/2013	6530	7.4	4320	ND (0.1)	2410	1.66	489	2.72	---	---
OW-01D	10/9/2013	6470	7.5	4270	0.415	2130	2.35	493	2.77	---	---
OW-02S	10/10/2013	1760	7.9	1040	2.100	468	4.74	99.8	3.85	---	---
OW-02S	10/10/2013 (FD)	1740	FD	1030	2.250	469	4.77	93.7	3.92	---	---
OW-02M	10/10/2013	6450	7.6	4160	ND (0.1)	2090	2.04	490	2.80	76.0	ND (0.5)
OW-02D	10/10/2013	6570	7.4	4240	ND (0.1)	2120	1.96	494	2.93	30.0	ND (0.5)
OW-05S	10/9/2013	2880	7.6	1820	0.238	865	1.80	163	2.91	---	---
OW-05M	10/9/2013	6650	7.6	4300	ND (0.1)	2150	2.08	500	2.91	---	---
OW-05D	10/9/2013	6710	7.6	4240	0.138	2190	2.06	512	2.95	---	---

NOTES:
ND parameter not detected at the listed reporting limit
FD field duplicate
µmhos/cm micro-mhos per centimeter
NTU Nephelometric Turbidity Unit
mg/L milligrams per liter
--- data not collected or available
J concentration estimated by laboratory or data validation

TABLE 6

Treated Water Quality Compared to OW and CW Pre-injection Water Quality*PG&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)	TDS (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	10/1/2013	ND (0.2)	ND (1.0)	2.10	23.5	2.92	512	4,410
OW-01S	7/28/2005	19.4	23.5	2.45	17.2	3.2	114	1,320
OW-01M	7/27/2005	16.3	18.9	2.31	27	1.01	311	3,450
OW-01D	7/27/2005	ND(1.0)	ND(1.3)	1.14	46.1	0.321	441	6,170
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	0.1	616	9,550
OW-05S	7/28/2005	23.4	25.6	2.3	17.1	3.55	105	1,060
OW-05M	7/28/2005	8.6	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	15.8	15.5	2.3	23.1	0.908	342	3,500
CW-02D	9/15/2005	ND(1.0)	1.6	0.982	41.6	0.28	601	8,770
CW-03M	9/15/2005	8.8	8.1	2.57	24.2	0.642	464	4,740
CW-03D	9/15/2005	ND(1.0)	ND(1.0)	1.4	29.2	0.304	672	9,550
CW-04M	9/15/2005	19.2	19	1.5	12.3	1.18	240	3,310
CW-04D	9/15/2005	ND(1.0)	ND(1.0)	1.01	26	0.188	534	7,470

NOTES:

ND = Not detected at the listed reporting limit.

mg/L = milligrams per liter.

µg/L = micrograms per liter.

Hexavalent chromium samples were analyzed using method 7199 in 2005 and then by method E218.6.

Chromium samples were analyzed using method 6020A for samples collected on 7/28/2005, by method 6010B for samples collected on 9/15/2005, by method 6020B for samples collected on 8/29/2005 and by method E200.8 for all other chromium samples.

Chromium samples of the treated water were unfiltered.

TABLE 7

Treated Water Quality Compared to Second Half 2013 Sampling Event Water Quality

PG&E Topock Compliance Monitoring Program

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	10/4/2011	ND (1.0)	ND (1.0)	2.09	18.6	2.92	501	4,260
Treated Water	10/2/2012	0.21	ND (1.0)	2.10	20.4	3.00	497	4,350
Treated Water	10/1/2013	ND (0.2)	ND (1.0)	2.10	23.5	2.92	512	4,410
CW-01M	10/10/2013	ND (1.0)	ND (1.0)	1.92	17.2	3.02	503	4,250
CW-01D	10/10/2013	ND (1.0)	ND (1.0)	2.34	19.9	2.88	494	4,130
CW-02M	10/8/2013	2.40	2.50	2.95	16.6	2.90	507	4,200
CW-02D	10/8/2013	0.54	ND (1.0)	2.67	12.8	2.93	518	4,140
CW-03M	10/8/2013	7.00	6.30	2.78	21.1	1.78	481	4,740
CW-03D	10/8/2013	0.66	ND (1.0)	3.55	14.4	2.94	512	4,260
CW-04M	10/9/2013 (FD)	5.40	5.70	1.77	9.60	2.61	454	4,120
CW-04M	10/9/2013	5.40	5.60	1.84	10.1	2.59	454	4,100
CW-04D	10/8/2013	0.63	ND (1.0)	3.01	19.0	2.92	511	4,260
OW-01S	10/9/2013	7.40	8.40	1.67	5.90	3.08	372	3,870
OW-01M	10/9/2013	1.20	1.50	1.66	11.1	2.72	489	4,320
OW-01D	10/9/2013	ND (1.0)	ND (1.0)	2.35	20.7	2.77	493	4,270
OW-02S	10/10/2013 (FD)	22.8	21.7	4.77	34.6	3.92	93.7	1,030
OW-02S	10/10/2013	22.9	22.0	4.74	34.7	3.85	99.8	1,040
OW-02M	10/10/2013	1.60	1.60	2.04	16.3	2.80	490	4,160
OW-02D	10/10/2013	ND (1.0)	ND (1.0)	1.96	18.7	2.93	494	4,240
OW-05S	10/9/2013	18.2	17.1	1.80	15.5	2.91	163	1,820
OW-05M	10/9/2013	ND (1.0)	ND (1.0)	2.08	17.0	2.91	500	4,300
OW-05D	10/9/2013	ND (1.0)	ND (1.0)	2.06	18.2	2.95	512	4,240

Notes:

--- not sampled or required for this event
 FD field duplicate
 ND parameter not detected at the listed reporting limit
 mg/L milligrams per liter
 µg/L micrograms per liter

All hexavalent chromium samples were analyzed with method E218.6.

All chromium and molybdenum samples were analyzed with method E200.8. Chromium and molybdenum samples were field filtered, except for the treated water.

Fluoride and Sulfate samples were analyzed with method E300.0.

All nitrate/nitrite as nitrogen samples were analyzed with method SM4500NO3E, except for treated water which used method E300.0.

All total dissolved solid samples were analyzed with method SM2540C.

TABLE 8

Manual Water Level Measurements and Elevations, Second Half 2013

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 (feet amsl)
CW-01M	190.0	566.07	08-Jul-13	10:36 AM	108.35	0.49	457.66
			21-Oct-13	10:30 AM	109.04	0.49	456.97
CW-01D	300.2	566.46	08-Jul-13	10:38 AM	108.55	0.50	457.78
			21-Oct-13	10:32 AM	109.14	0.50	457.19
CW-02M	208.3	549.45	08-Jul-13	10:43 AM	91.84	0.53	457.54
			21-Oct-13	10:35 AM	92.60	0.53	456.78
CW-02D	355.0	549.43	08-Jul-13	10:45 AM	91.52	0.53	457.73
			21-Oct-13	10:37 AM	92.19	0.53	457.06
CW-03M	222.0	534.10	08-Jul-13	10:48 AM	76.73	0.60	457.37
			21-Oct-13	10:40 AM	77.50	0.60	456.60
CW-03D	340.0	534.14	08-Jul-13	10:50 AM	76.20	0.53	457.74
			21-Oct-13	10:41 AM	76.89	0.53	457.06
CW-04M	169.8	518.55	08-Jul-13	11:01 AM	60.73	0.49	457.75
			21-Oct-13	10:47 AM	61.40	0.49	457.08
CW-04D	303.0	518.55	08-Jul-13	11:03 AM	60.67	0.51	457.68
			21-Oct-13	10:49 AM	61.26	0.51	457.10
OW-01S	113.5	550.21	08-Jul-13	11:10 AM	92.76	0.32	457.42
			21-Oct-13	10:53 AM	93.51	0.32	456.67
OW-01M	185.8	550.36	08-Jul-13	11:12 AM	92.36	0.49	457.92
			21-Oct-13	10:55 AM	93.28	0.49	457.00
OW-01D	277.3	550.36	08-Jul-13	11:14 AM	92.00	0.51	458.23
			21-Oct-13	10:57 AM	92.96	0.51	457.27
OW-02S	103.6	548.88	08-Jul-13	11:16 AM	91.40	0.13	457.45
			21-Oct-13	11:00 AM	92.17	0.13	456.68
OW-02M	210.3	548.52	08-Jul-13	11:18 AM	90.26	0.49	458.15
			21-Oct-13	11:02 AM	91.42	0.49	456.99
OW-02D	340.0	549.01	08-Jul-13	11:27 AM	90.31	0.52	458.51
			21-Oct-13	11:04 AM	91.43	0.52	457.39
OW-05S	110.3	551.83	08-Jul-13	11:21 AM	94.26	0.27	457.54
			21-Oct-13	11:07 AM	94.97	0.27	456.83
OW-05M	250.3	551.81	08-Jul-13	11:23 AM	93.82	0.50	457.97
			21-Oct-13	11:09 AM	93.89	0.50	457.90
OW-05D	350.0	552.41	08-Jul-13	11:25 AM	94.45	0.52	458.00
			21-Oct-13	11:11 AM	94.72	0.52	457.75

Notes:

amsl above mean sea level

btoc below top of polyvinyl chloride (PVC) casing

% percentage

Salinity used to adjust water level to freshwater equivalent. Salinity values have been averaged in accordance with the Performance Monitoring Program.

TABLE 9

Vertical Gradients within the OW and CW Clusters, Second Half 2013*PG&E Topock Compliance Monitoring Program*

Well Pairs	Vertical Gradient (ft/ft) ^a
CW-01D to CW-01M	0.0020
CW-02D to CW-02M	0.0021
CW-03D to CW-03M	0.0047
CW-04D to CW-04M	0.0002
OW-01M to OW-01S	0.0043
OW-01D to OW-01M	0.0029
OW-02M to OW-02S	0.0027
OW-02D to OW-02M	0.0033
OW-05M to OW-05S	0.0076

^a Positive value signifies an upward gradient.

Gradients calculated using October 21, 2013 groundwater levels.

TABLE 10

Field Parameter Measurements for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location ID	Sampling Date	Specific Conductance (µmhos/cm)	Temperature (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Salinity (%)	Depth To Water (feet btoc)
CW-01M	10/10/2013	7,512	29.14	7.5	186	9.51	1	0.49	109.01
CW-01D	10/10/2013	7,427	29.13	7.3	155	7.96	1	0.48	109.10
CW-02M	10/8/2013	7,454	30.02	7.8	179	7.76	1	0.46	92.50
CW-02D	10/8/2013	7,582	30.98	7.9	101	6.94	1	0.49	92.03
CW-03M	10/8/2013	8,667	30.11	7.5	167	4.03	0.5	0.56	77.35
CW-03D	10/8/2013	7,570	30.50	7.7	189	6.91	0.3	0.49	76.67
CW-04M	10/9/2013	7,171	29.68	7.1	190	6.32	1	0.46	61.24
CW-04D	10/8/2013	7,532	31.04	7.8	133	8.36	1	0.49	61.01
OW-01S	10/9/2013	6,129	28.72	7.3	183	7.05	1	0.40	93.47
OW-01M	10/9/2013	7,391	28.90	7.4	169	7.69	1	0.48	93.18
OW-01D	10/9/2013	7,328	28.89	7.5	150	6.98	1	0.47	92.74
OW-02S	10/10/2013	1,965	28.61	7.9	118	8.23	3	0.13	92.08
OW-02M	10/10/2013	7,277	29.35	7.6	145	7.63	1	0.47	91.38
OW-02D	10/10/2013	7,392	29.22	7.4	56	7.45	1	0.48	91.35
OW-05S	10/9/2013	3,487	28.72	7.6	164	6.62	1	0.23	94.85
OW-05M	10/9/2013	7,554	28.33	7.6	175	7.54	1	0.49	94.77
OW-05D	10/9/2013	7,656	29.58	7.6	147	6.40	1	0.50	94.85

Notes:

µmhos/cm micro-mhos per centimeter
 °C degree centigrade
 ORP oxidation reduction potential
 mV millivolts
 mg/L milligrams per liter
 NTU Nephelometric Turbidity Unit
 % percentage
 btoc below top of polyvinyl chloride (PVC) casing

Salinity is calculated using the specific conductance field measurement, the last measurement before sampling.

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-030	Barry Collom	10/10/2013	8:25:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6460	2.0	0.606
					TLI	EPA 200.7	ALD	10/21/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.90	0.20	0.0041
					TLI	EPA 200.7	CAD	10/19/2013	Denise Chauv	mg/L	164	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	13.9	5.00	0.952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	16.3	10.0	4.68
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1400	500	59.8
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/18/2013	Ethel Suico	µg/L	1.30	0.5	0.10
					TLI	EPA 200.8	BAD	10/18/2013	Ethel Suico	µg/L	21.6	5.0	0.59
					TLI	EPA 200.8	BED	10/21/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/18/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	CUD	10/21/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/21/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	19.9	2.0	0.05

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-030	Barry Collom	10/10/2013	8:25:00 AM	TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/18/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2110	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	2.34	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	494	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.88	0.04	0.0112
					TLI	EPA 6010B	FE	10/17/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	47.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	47.0	5.0	1.68
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4130	125	1.76
					TLI	SM4500NH3D	NH3N	10/22/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
CW-01M	CW-01M-030	Barry Collom	10/10/2013	8:58:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6660	2.0	0.606

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-030	Barry Collom	10/10/2013	8:58:00 AM	TLI	EPA 200.7	ALD	10/21/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.912	0.20	0.0041
					TLI	EPA 200.7	CAD	10/19/2013	Denise Chauv	mg/L	175	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	15.5	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	14.6	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1400	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/21/2013	Ethel Suico	µg/L	1.60	0.5	0.10
					TLI	EPA 200.8	BAD	10/18/2013	Ethel Suico	µg/L	84.0	5.0	0.59
					TLI	EPA 200.8	BED	10/21/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/18/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/21/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	CUD	10/21/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/21/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	17.2	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-030	Barry Collom	10/10/2013	8:58:00 AM	TLI	EPA 200.8	PBD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/18/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2130	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.92	0.5	0.104
					TLI	EPA 300.0	SO4	10/16/2013	Giawad Ghenniwa	mg/L	503	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	3.02	0.04	0.0112
					TLI	EPA 6010B	FE	10/17/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	50.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	50.0	5.0	1.68
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4250	125	1.76
					TLI	SM4500NH3D	NH3N	10/22/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
CW-02D	CW-02D-030	Barry Collom	10/8/2013	11:59:00 AM	TLI	EPA 120.1	SC	10/11/2013	Maksim Gorbunov	µmhos/cm	6680	2.0	0.606
					TLI	EPA 200.7	ALD	10/28/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02D	CW-02D-030	Barry Collom	10/8/2013	11:59:00 AM	TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.964	0.20	0.0041
					TLI	EPA 200.7	CAD	10/18/2013	Denise Chauv	mg/L	79.2	5.00	0.17
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	13.7	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	4.20	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1530	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/9/2013	Ethel Suico	µg/L	3.50	0.5	0.10
					TLI	EPA 200.8	BAD	10/9/2013	Ethel Suico	µg/L	11.3	5.0	0.59
					TLI	EPA 200.8	BED	10/9/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	CUD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/9/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	12.8	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	3.10	2.0	0.24
					TLI	EPA 200.8	PBD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02D	CW-02D-030	Barry Collom	10/8/2013	11:59:00 AM	TLI	EPA 200.8	SBD	10/9/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	5.30	5.0	0.07
					TLI	EPA 218.6	CR6	10/10/2013	Naheed Eidinejad	µg/L	0.54	0.2	0.006
					TLI	EPA 300.0	CL	10/11/2013	Giawad Ghenniwa	mg/L	2390	50.0	17.4
					TLI	EPA 300.0	FL	10/9/2013	Giawad Ghenniwa	mg/L	2.67	0.5	0.104
					TLI	EPA 300.0	SO4	10/9/2013	Giawad Ghenniwa	mg/L	518	50.0	3.07
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.93	0.04	0.0112
					TLI	EPA 6010B	FE	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	55.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	55.0	5.0	1.68
					TLI	SM2130B	TRB	10/9/2013	Kim Luck	NTU	0.13	0.1	0.014
					TLI	SM2540C	TDS	10/9/2013	Himani Vaishnav	mg/L	4140	125	1.76
CW-02M	CW-02M-030	Barry Collom	10/8/2013	1:24:00 PM	TLI	EPA 120.1	SC	10/11/2013	Maksim Gorbunov	µmhos/cm	6590	2.0	0.606
					TLI	EPA 200.7	ALD	10/28/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	1.12	0.20	0.0041

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02M	CW-02M-030	Barry Collom	10/8/2013	1:24:00 PM	TLI	EPA 200.7	CAD	10/18/2013	Denise Chauv	mg/L	130	25.0	0.85
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)J	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	14.6	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	10.3	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1340	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/9/2013	Ethel Suico	µg/L	2.10	0.5	0.10
					TLI	EPA 200.8	BAD	10/10/2013	Ethel Suico	µg/L	63.9	5.0	0.59
					TLI	EPA 200.8	BED	10/9/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/17/2013	Ethel Suico	µg/L	2.50	1.0	0.14
					TLI	EPA 200.8	CUD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/9/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	16.6	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/9/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02M	CW-02M-030	Barry Collom	10/8/2013	1:24:00 PM	TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	2.40	1.0	0.03
					TLI	EPA 300.0	CL	10/11/2013	Giawad Ghenniwa	mg/L	2120	50.0	17.4
					TLI	EPA 300.0	FL	10/9/2013	Giawad Ghenniwa	mg/L	2.95	0.5	0.104
					TLI	EPA 300.0	SO4	10/9/2013	Giawad Ghenniwa	mg/L	507	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.90	0.04	0.0112
					TLI	EPA 6010B	FE	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	54.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	54.0	5.0	1.68
					TLI	SM2130B	TRB	10/9/2013	Kim Luck	NTU	0.103	0.1	0.014
					TLI	SM2540C	TDS	10/9/2013	Himani Vaishnav	mg/L	4200	125	1.76
					TLI	SM4500NH3D	NH3N	10/29/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
CW-03D	CW-03D-030	Barry Collom	10/8/2013	9:12:00 AM	TLI	EPA 120.1	SC	10/11/2013	Maksim Gorbunov	µmhos/cm	6600	2.0	0.606
					TLI	EPA 200.7	ALD	10/28/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	1.01	0.20	0.0041
					TLI	EPA 200.7	CAD	10/18/2013	Denise Chauv	mg/L	75.0	5.00	0.17

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03D	CW-03D-030	Barry Collom	10/8/2013	9:12:00 AM	TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	14.0	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	5.37	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1470	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/9/2013	Ethel Suico	µg/L	1.60	0.5	0.10
					TLI	EPA 200.8	BAD	10/9/2013	Ethel Suico	µg/L	13.2	5.0	0.59
					TLI	EPA 200.8	BED	10/9/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	CUD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/9/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	14.4	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/9/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03D	CW-03D-030	Barry Collom	10/8/2013	9:12:00 AM	TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/10/2013	Naheed Eidinejad	µg/L	0.66	0.2	0.006
					TLI	EPA 300.0	CL	10/11/2013	Giawad Ghenniwa	mg/L	2130	50.0	17.4
					TLI	EPA 300.0	FL	10/9/2013	Giawad Ghenniwa	mg/L	3.55	0.5	0.104
					TLI	EPA 300.0	SO4	10/9/2013	Giawad Ghenniwa	mg/L	512	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.94	0.04	0.0112
					TLI	EPA 6010B	FE	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	58.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	58.0	5.0	1.68
					TLI	SM2130B	TRB	10/9/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/9/2013	Himani Vaishnav	mg/L	4260	125	1.76
					TLI	SM4500NH3D	NH3N	10/29/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
CW-03M	CW-03M-030	Barry Collom	10/8/2013	10:12:00 AM	TLI	EPA 120.1	SC	10/11/2013	Maksim Gorbunov	µmhos/cm	7840	2.0	0.606
					TLI	EPA 200.7	ALD	10/28/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	1.07	0.20	0.0041
					TLI	EPA 200.7	CAD	10/18/2013	Denise Chauv	mg/L	198	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-030	Barry Collom	10/8/2013	10:12:00 AM	TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	17.3	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	15.8	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1620	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/9/2013	Ethel Suico	µg/L	1.30	0.5	0.10
					TLI	EPA 200.8	BAD	10/10/2013	Ethel Suico	µg/L	44.2	5.0	0.59
					TLI	EPA 200.8	BED	10/9/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/9/2013	Ethel Suico	µg/L	6.30	1.0	0.14
					TLI	EPA 200.8	CUD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/9/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	21.1	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/9/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-030	Barry Collom	10/8/2013	10:12:00 AM	TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	7.00	1.0	0.03
					TLI	EPA 300.0	CL	10/11/2013	Giawad Ghenniwa	mg/L	2640	50.0	17.4
					TLI	EPA 300.0	FL	10/9/2013	Giawad Ghenniwa	mg/L	2.78	0.5	0.104
					TLI	EPA 300.0	SO4	10/9/2013	Giawad Ghenniwa	mg/L	481	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	1.78	0.04	0.0112
					TLI	EPA 6010B	FE	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	48.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	48.0	5.0	1.68
					TLI	SM2130B	TRB	10/9/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/9/2013	Himani Vaishnav	mg/L	4740	250	1.76
					TLI	SM4500NH3D	NH3N	10/29/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
CW-04D	CW-04D-030	Barry Collom	10/8/2013	3:02:00 PM	TLI	EPA 120.1	SC	10/11/2013	Maksim Gorbunov	µmhos/cm	6710	2.0	0.606
					TLI	EPA 200.7	ALD	10/28/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	1.07	0.20	0.0041
					TLI	EPA 200.7	CAD	10/18/2013	Denise Chauv	mg/L	116	5.00	0.17
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	14.1	0.50	0.0952

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04D	CW-04D-030	Barry Collom	10/8/2013	3:02:00 PM	TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	7.57	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1480	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/9/2013	Ethel Suico	µg/L	3.60	0.5	0.10
					TLI	EPA 200.8	BAD	10/9/2013	Ethel Suico	µg/L	16.2	5.0	0.59
					TLI	EPA 200.8	BED	10/9/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	CUD	10/9/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/9/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	19.0	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	2.80	2.0	0.24
					TLI	EPA 200.8	PBD	10/9/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/9/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04D	CW-04D-030	Barry Collom	10/8/2013	3:02:00 PM	TLI	EPA 218.6	CR6	10/10/2013	Naheed Eidinejad	µg/L	0.63	0.2	0.006
					TLI	EPA 300.0	CL	10/11/2013	Giawad Ghenniwa	mg/L	2150	50.0	17.4
					TLI	EPA 300.0	FL	10/9/2013	Giawad Ghenniwa	mg/L	3.01	0.5	0.104
					TLI	EPA 300.0	SO4	10/9/2013	Giawad Ghenniwa	mg/L	511	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.92	0.04	0.0112
					TLI	EPA 6010B	FE	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	50.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	50.0	5.0	1.68
					TLI	SM2130B	TRB	10/9/2013	Kim Luck	NTU	0.11	0.1	0.014
					TLI	SM2540C	TDS	10/9/2013	Himani Vaishnav	mg/L	4260	125	1.76
					TLI	SM4500NH3D	NH3N	10/29/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
CW-04M	CW-04M-030	Barry Collom	10/9/2013	8:10:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6360	2.0	0.606
					TLI	EPA 200.7	ALD	10/21/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.857	0.20	0.0041
					TLI	EPA 200.7	CAD	10/19/2013	Denise Chauv	mg/L	177	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	15.6	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	14.5	1.00	0.468

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04M	CW-04M-030	Barry Collom	10/9/2013	8:10:00 AM	TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1300	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/18/2013	Ethel Suico	µg/L	2.20	0.5	0.10
					TLI	EPA 200.8	BAD	10/18/2013	Ethel Suico	µg/L	87.1	5.0	0.59
					TLI	EPA 200.8	BED	10/21/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/18/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	5.60	1.0	0.14
					TLI	EPA 200.8	CUD	10/21/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/21/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.04
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	10.1	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/18/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	5.40	1.0	0.03

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04M	CW-04M-030	Barry Collom	10/9/2013	8:10:00 AM	TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2060	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.84	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	454	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.59	0.04	0.0112
					TLI	EPA 6010B	FE	10/17/2013	Denise Chauv	mg/L	ND (0.02)J	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	54.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	54.0	5.0	1.68
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4100	125	1.76
CW-04M	OW-70-030	Barry Collom	10/9/2013	10:00:00 AM	TLI	SM4500NH3D	NH3N	10/22/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
					TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6260	2.0	0.606
					TLI	EPA 200.7	ALD	10/21/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.854	0.20	0.0041
					TLI	EPA 200.7	CAD	10/19/2013	Denise Chauv	mg/L	173	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	15.9	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	14.8	1.00	0.468
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1320	100	12.0

TABLE 11

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PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04M	OW-70-030	Barry Collom	10/9/2013	10:00:00 AM	TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/18/2013	Ethel Suico	µg/L	2.20	0.5	0.10
					TLI	EPA 200.8	BAD	10/18/2013	Ethel Suico	µg/L	90.4	5.0	0.59
					TLI	EPA 200.8	BED	10/21/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/18/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	5.70	1.0	0.14
					TLI	EPA 200.8	CUD	10/21/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/21/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	9.60	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/18/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	5.40	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2060	50.0	17.4

TABLE 11

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PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04M	OW-70-030	Barry Collom	10/9/2013	10:00:00 AM	TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.77	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	454	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.61	0.04	0.0112
					TLI	EPA 6010B	FE	10/17/2013	Denise Chauv	mg/L	0.0775 J	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	50.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	50.0	5.0	1.68
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4120	125	1.76
					TLI	SM4500NH3D	NH3N	10/22/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
OW-01D	OW-01D-030	Barry Collom	10/9/2013	10:14:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6470	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	1440	100	12.0
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	MOD	10/18/2013	Ethel Suico	µg/L	20.7	2.0	0.10
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2130	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	2.35	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	493	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.77	0.04	0.0112

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-01D	OW-01D-030	Barry Collom	10/9/2013	10:14:00 AM	TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	0.415	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4270	125	1.76
OW-01M	OW-01M-030	Barry Collom	10/9/2013	10:42:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6530	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	1480	100	12.0
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	1.50	1.0	0.14
					TLI	EPA 200.8	MOD	10/18/2013	Ethel Suico	µg/L	11.1	2.0	0.10
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	1.20	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2410	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.66	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	489	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.72	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4320	125	1.76
OW-01S	OW-01S-030	Barry Collom	10/9/2013	11:35:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	5190	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	801	100	12.0
					TLI	EPA 200.8	CRTD	10/21/2013	Ethel Suico	µg/L	8.40	1.0	0.14
					TLI	EPA 200.8	MOD	10/18/2013	Ethel Suico	µg/L	5.90	2.0	0.10
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	7.40	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	1730	50.0	17.4

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-01S	OW-01S-030	Barry Collom	10/9/2013	11:35:00 AM	TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.67	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	372	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	3.08	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	0.212	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	3870	125	1.76
OW-02D	OW-02D-030	Barry Collom	10/10/2013	10:36:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6570	2.0	0.606
					TLI	EPA 200.7	ALD	10/21/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.917	0.20	0.0041
					TLI	EPA 200.7	CAD	10/19/2013	Denise Chauv	mg/L	119	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	17.5	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	28.2	2.00	0.936
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1420	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/18/2013	Ethel Suico	µg/L	3.50	0.5	0.10
					TLI	EPA 200.8	BAD	10/18/2013	Ethel Suico	µg/L	15.8	5.0	0.59
					TLI	EPA 200.8	BED	10/21/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02D	OW-02D-030	Barry Collom	10/10/2013	10:36:00 AM	TLI	EPA 200.8	COBD	10/18/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	CUD	10/21/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/21/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	18.7	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/18/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2120	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.96	0.5	0.104
					TLI	EPA 300.0	SO4	10/16/2013	Giawad Ghenniwa	mg/L	494	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.93	0.04	0.0112
					TLI	EPA 6010B	FE	10/17/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	30.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02D	OW-02D-030	Barry Collom	10/10/2013	10:36:00 AM	TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	30.0	5.0	1.68
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4240	125	1.76
					TLI	SM4500NH3D	NH3N	10/22/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
OW-02M	OW-02M-030	Barry Collom	10/10/2013	11:13:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6450	2.0	0.606
					TLI	EPA 200.7	ALD	10/21/2013	Denise Chauv	µg/L	ND (20)	20.0	7.20
					TLI	EPA 200.7	BD	10/18/2013	Denise Chauv	mg/L	0.992	0.20	0.0041
					TLI	EPA 200.7	CAD	10/19/2013	Denise Chauv	mg/L	134	10.0	0.34
					TLI	EPA 200.7	FETD	10/18/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	EPA 200.7	KD	11/7/2013	Denise Chauv	mg/L	16.6	0.50	0.0952
					TLI	EPA 200.7	MGD	11/7/2013	Denise Chauv	mg/L	22.8	2.00	0.936
					TLI	EPA 200.7	NAD	11/7/2013	Denise Chauv	mg/L	1360	100	12.0
					TLI	EPA 200.7	ZND	11/7/2013	Denise Chauv	µg/L	ND (20)	20.0	5.10
					TLI	EPA 200.8	AGD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.029
					TLI	EPA 200.8	ASD	10/18/2013	Ethel Suico	µg/L	1.60	0.5	0.10
					TLI	EPA 200.8	BAD	10/18/2013	Ethel Suico	µg/L	41.0	5.0	0.59
					TLI	EPA 200.8	BED	10/21/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.072
					TLI	EPA 200.8	CDD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.08
					TLI	EPA 200.8	COBD	10/18/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.08

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02M	OW-02M-030	Barry Collom	10/10/2013	11:13:00 AM	TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	1.60	1.0	0.14
					TLI	EPA 200.8	CUD	10/21/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.38
					TLI	EPA 200.8	HGD	10/21/2013	Ethel Suico	µg/L	ND (0.4)	0.4	0.08
					TLI	EPA 200.8	MND	11/7/2013	Ethel Suico	µg/L	ND (0.5)	0.5	0.06
					TLI	EPA 200.8	MOD	11/7/2013	Ethel Suico	µg/L	16.3	2.0	0.05
					TLI	EPA 200.8	NID	11/7/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.24
					TLI	EPA 200.8	PBD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.29
					TLI	EPA 200.8	SBD	10/18/2013	Ethel Suico	µg/L	ND (2.0)	2.0	0.07
					TLI	EPA 200.8	SED	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.21
					TLI	EPA 200.8	TLD	11/7/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 200.8	VD	11/7/2013	Ethel Suico	µg/L	ND (5.0)	5.0	0.07
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	1.60	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2090	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	2.04	0.5	0.104
					TLI	EPA 300.0	SO4	10/16/2013	Giawad Ghenniwa	mg/L	490	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.80	0.04	0.0112
					TLI	EPA 6010B	FE	10/17/2013	Denise Chauv	mg/L	ND (0.02)	0.02	0.003
					TLI	SM 2320B	ALKB	10/17/2013	Kim Luck	mg/L	76.0	5.0	1.68
					TLI	SM 2320B	ALKC	10/17/2013	Kim Luck	mg/L	ND (5.0)	5.0	1.68
					TLI	SM 2320B	ALKT	10/17/2013	Kim Luck	mg/L	76.0	5.0	1.68

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02M	OW-02M-030	Barry Collom	10/10/2013	11:13:00 AM	TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4160	125	1.76
					TLI	SM4500NH3D	NH3N	10/22/2013	Kim Luck/Maria Mangarova	mg/L	ND (0.5)	0.5	0.0318
OW-02S	OW-71-030	Barry Collom	10/10/2013	7:00:00 AM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	1740	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	375	100	12.0
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	21.7	1.0	0.14
					TLI	EPA 200.8	MOD	10/21/2013	Ethel Suico	µg/L	34.6	2.0	0.10
					TLI	EPA 218.6	CR6	10/21/2013	Naheed Eidinejad	µg/L	22.8	0.2	0.006
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	469	10.0	3.49
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	4.77	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	93.7	50.0	3.07
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	3.92	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	2.25	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	1030	50.0	1.76
OW-02S	OW-02S-030	Barry Collom	10/10/2013	12:04:00 PM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	1760	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	391	100	12.0
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	22.0	1.0	0.14
					TLI	EPA 200.8	MOD	10/21/2013	Ethel Suico	µg/L	34.7	2.0	0.10
					TLI	EPA 218.6	CR6	10/21/2013	Naheed Eidinejad	µg/L	22.9	0.2	0.006

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02S	OW-02S-030	Barry Collom	10/10/2013	12:04:00 PM	TLI	EPA 300.0	CL	10/16/2013	Giawad Ghenniwa	mg/L	468	10.0	3.49
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	4.74	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	99.8	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	3.85	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	2.10	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	1040	50.0	1.76
OW-05D	OW-05D-030	Barry Collom	10/9/2013	1:56:00 PM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6710	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	1800	100	12.0
					TLI	EPA 200.8	CRTD	10/21/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	MOD	10/18/2013	Ethel Suico	µg/L	18.2	2.0	0.10
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2190	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	2.06	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	512	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.95	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	0.138	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4240	125	1.76
OW-05M	OW-05M-030	Barry Collom	10/9/2013	2:44:00 PM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	6650	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	1620	100	12.0

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-05M	OW-05M-030	Barry Collom	10/9/2013	2:44:00 PM	TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	ND (1.0)	1.0	0.14
					TLI	EPA 200.8	MOD	10/18/2013	Ethel Suico	µg/L	17.0	2.0	0.10
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	ND (1.0)	1.0	0.03
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	2150	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	2.08	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	500	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.91	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	ND (0.1)	0.1	0.014
					TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	4300	125	1.76
OW-05S	OW-05S-030	Barry Collom	10/9/2013	3:12:00 PM	TLI	EPA 120.1	SC	10/17/2013	Jenny Tankunakorn	µmhos/cm	2880	2.0	0.606
					TLI	EPA 200.7	NAD	10/21/2013	Denise Chauv	mg/L	486	100	12.0
					TLI	EPA 200.8	CRTD	10/18/2013	Ethel Suico	µg/L	17.1	1.0	0.14
					TLI	EPA 200.8	MOD	10/18/2013	Ethel Suico	µg/L	15.5	2.0	0.10
					TLI	EPA 218.6	CR6	10/19/2013	Naheed Eidinejad	µg/L	18.2	0.2	0.006
					TLI	EPA 300.0	CL	10/15/2013	Giawad Ghenniwa	mg/L	865	50.0	17.4
					TLI	EPA 300.0	FL	10/14/2013	Giawad Ghenniwa	mg/L	1.80	0.5	0.104
					TLI	EPA 300.0	SO4	10/15/2013	Giawad Ghenniwa	mg/L	163	25.0	1.54
					CHMC	EPA 353.2	NO3NO2N	10/16/2013	Emily Clark	mg/L	2.91	0.04	0.0112
					TLI	SM2130B	TRB	10/11/2013	Kim Luck	NTU	0.238	0.1	0.014

TABLE 11

ARAR Monitoring Information for Groundwater Samples, Second Half 2013

PG&E Topock Compliance Monitoring Program

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-05S	OW-05S-030	Barry Collom	10/9/2013	3:12:00 PM	TLI	SM2540C	TDS	10/16/2013	Jenny Tankunakorn	mg/L	1820	50.0	1.76

NOTES:

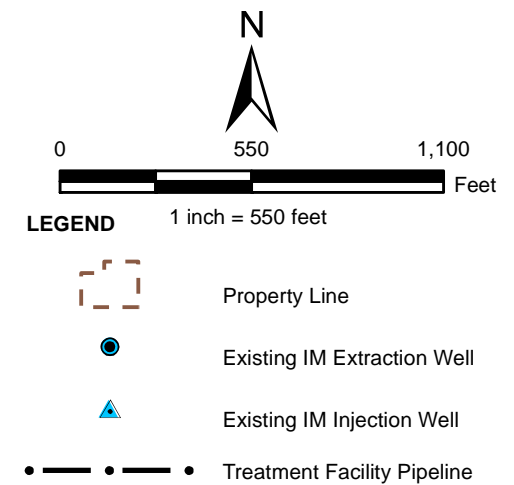
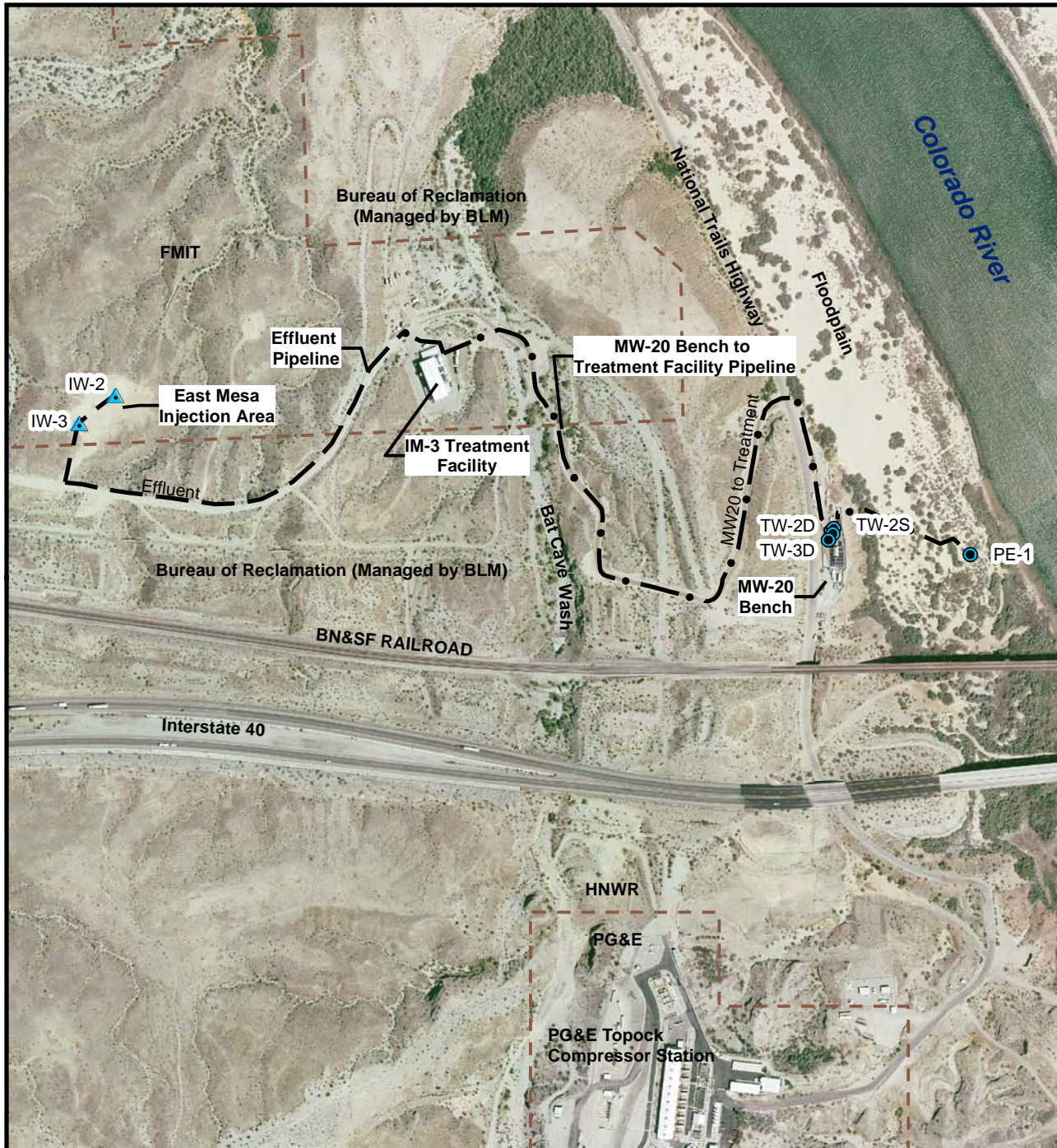
MDL method detection limit corrected for sample dilution
 RL reporting limit corrected for sample dilution
 ND parameter not detected at the listed reporting limit
 µmhos/cm micro-mhos per centimeter
 NTU Nephelometric Turbidity Unit
 mg/L milligrams per liter
 µg/L micrograms per liter
 J concentration estimated by laboratory or data validation

ARAR applicable or relevant and appropriate requirements

TLI Truesdail Laboratories, Inc.

CHMC Advanced Sciences, Corvallis, OR

ALKC	alkalinity, as carbonate	HGD	mercury, dissolved
ALKT	alkalinity, total as CaCO ₃	KD	potassium, dissolved
ALKB	alkalinity, bicarbonate as CaCO ₃	MGD	magnesium, dissolved
ALD	aluminum, dissolved	MND	manganese, dissolved
AGD	silver, dissolved	MOD	molybdenum, dissolved
ASD	arsenic, dissolved	NAD	sodium, dissolved
BD	boron, dissolved	NID	nickel, dissolved
BAD	barium, dissolved	NH ₃ N	ammonia (as Nitrogen)
BED	beryllium, dissolved	NO ₃ NO ₂ N	nitrate/nitrite (as Nitrogen)
CAD	calcium, dissolved	PBD	lead, dissolved
CDD	cadmium, dissolved	SBD	antimony, dissolved
CL	chloride	SC	specific conductance
COBD	cobalt, dissolved	SED	selenium, dissolved
CRTD	chromium, dissolved	SO ₄	sulfate
CR6	hexavalent chromium	TLD	thallium, dissolved
CUD	copper, dissolved	TDS	total dissolved solids
FE	iron	TRB	turbidity
FETD	iron, dissolved	VD	vanadium, dissolved
FL	fluoride	ZND	zinc, dissolved

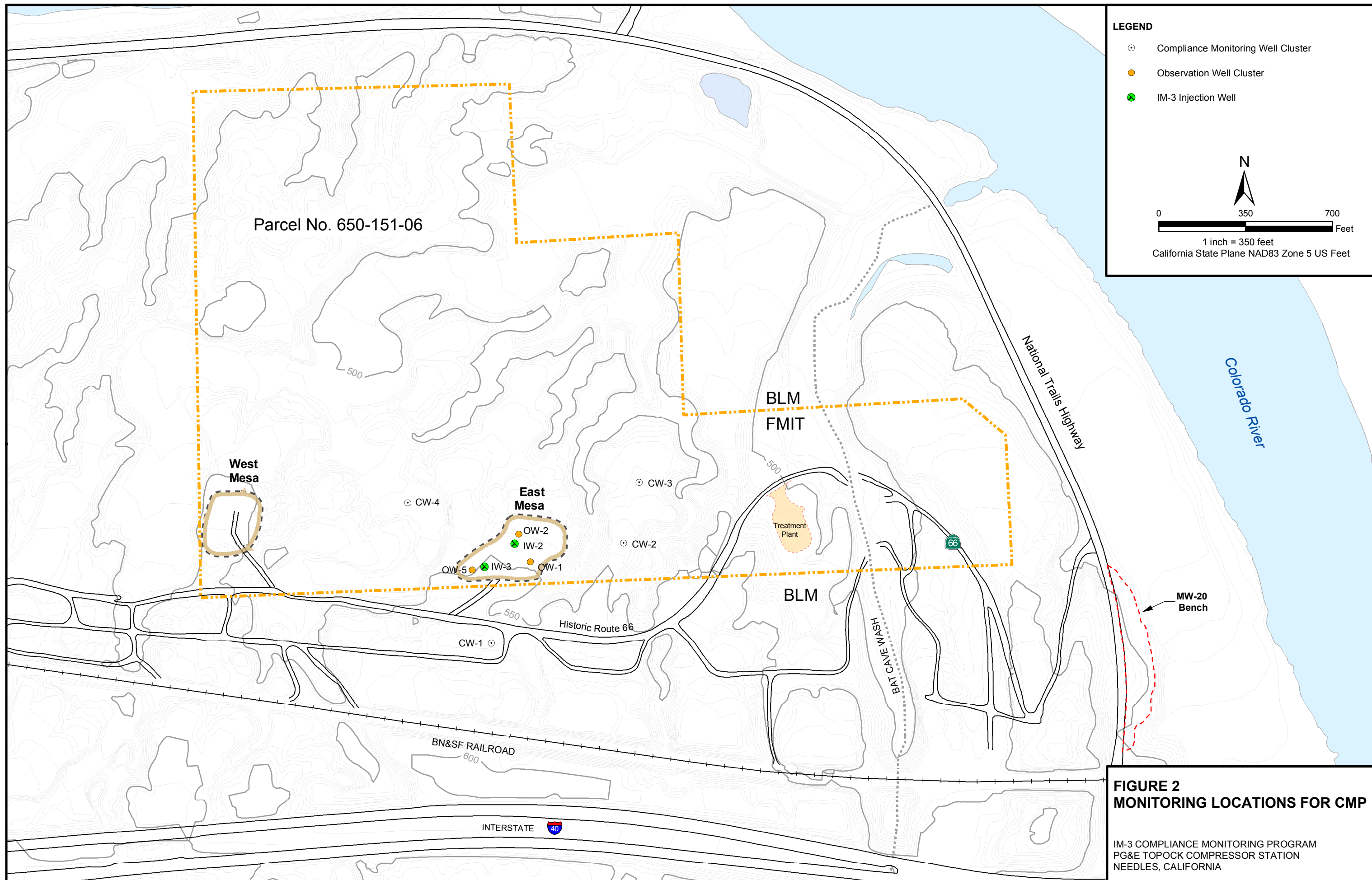


Notes: Location map shows Interim Measures No.3 (IM-3) facilities as of January 2006.
Aerial photography taken May 2005.

FIGURE 1 SITE LOCATION AND LAYOUT

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

CH2MHILL



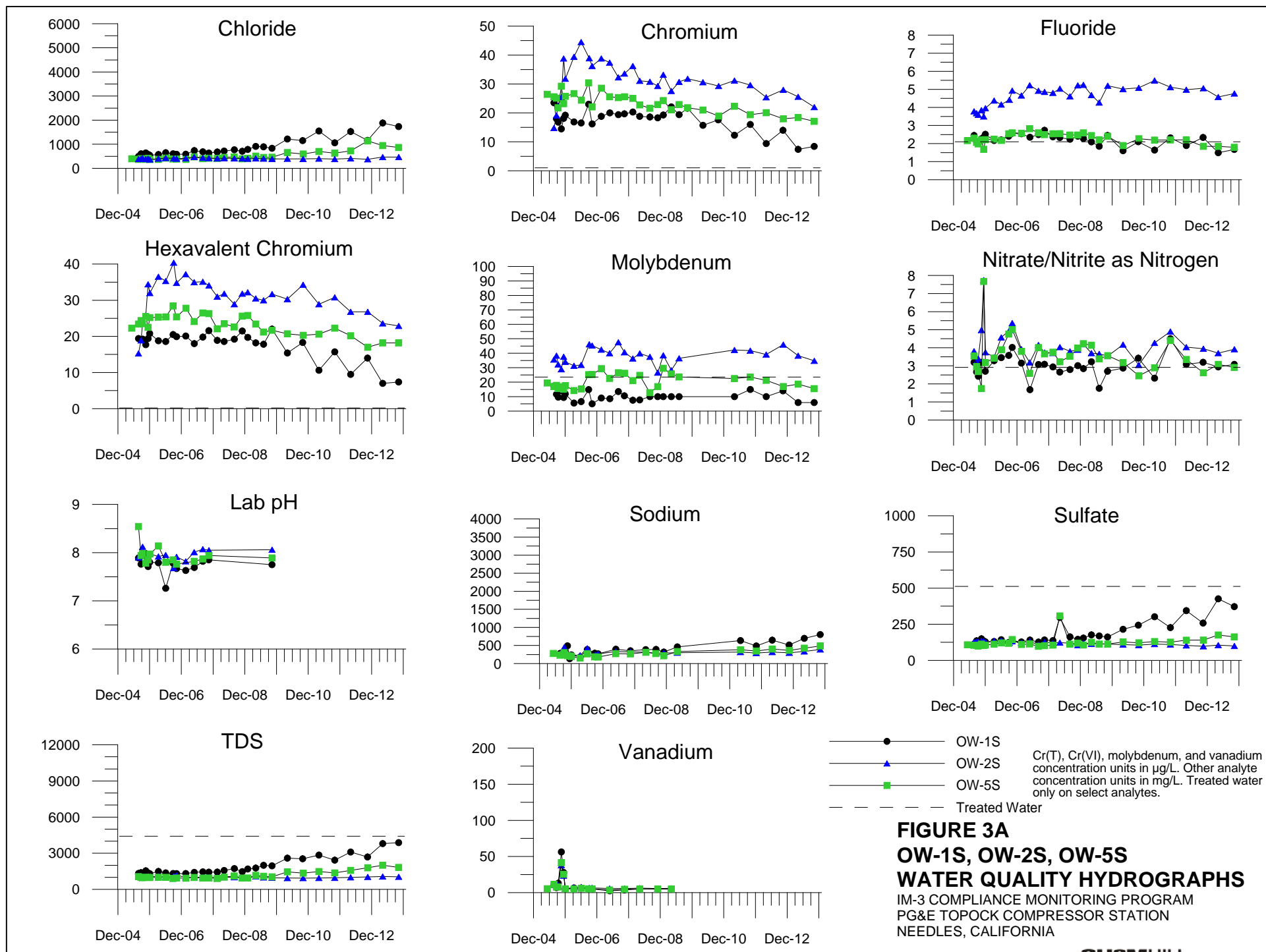


FIGURE 3A
OW-1S, OW-2S, OW-5S
WATER QUALITY HYDROGRAPHS
 IM-3 COMPLIANCE MONITORING PROGRAM
 PG&E TOPECO COMPRESSOR STATION
 NEEDLES, CALIFORNIA

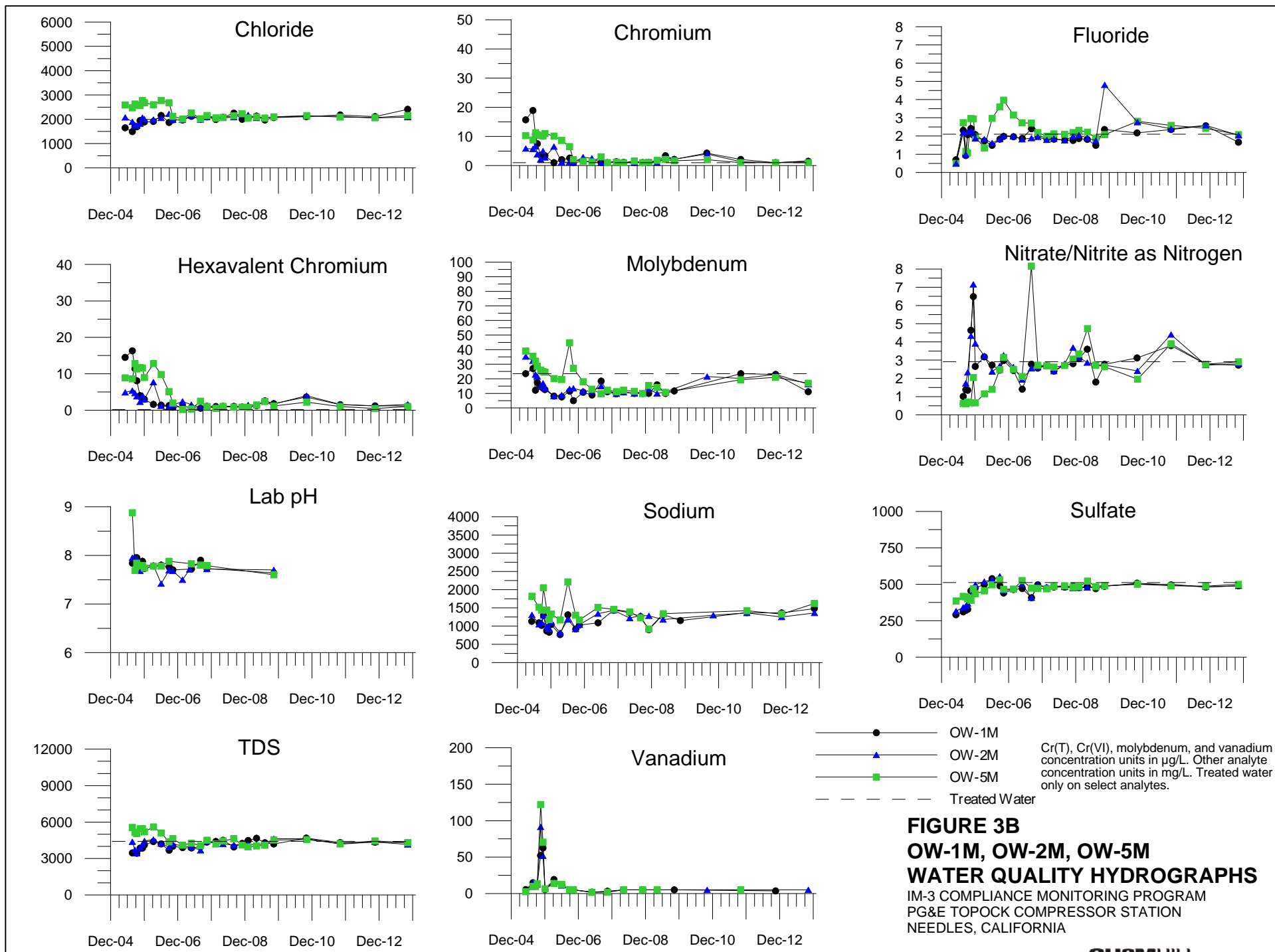
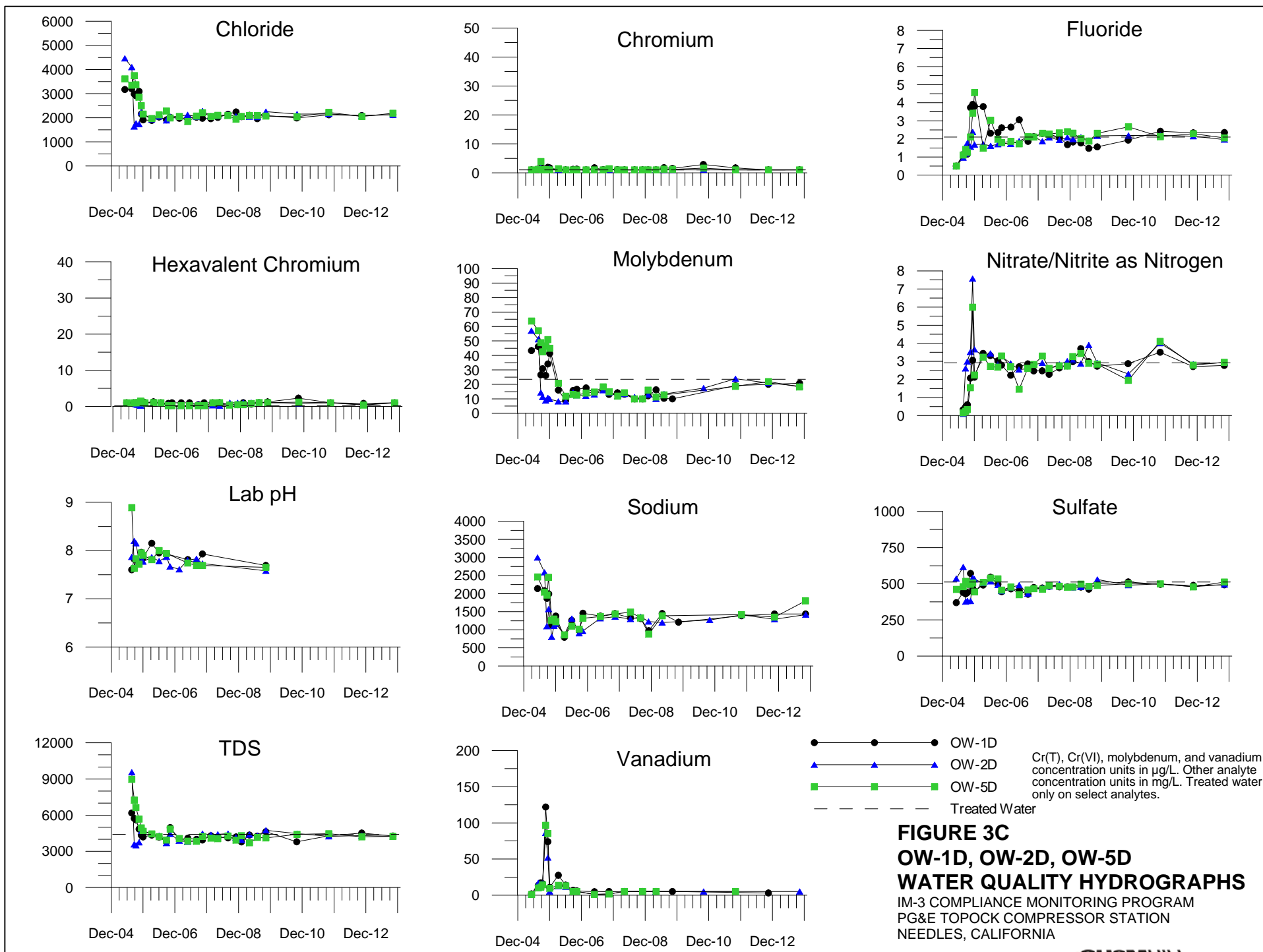
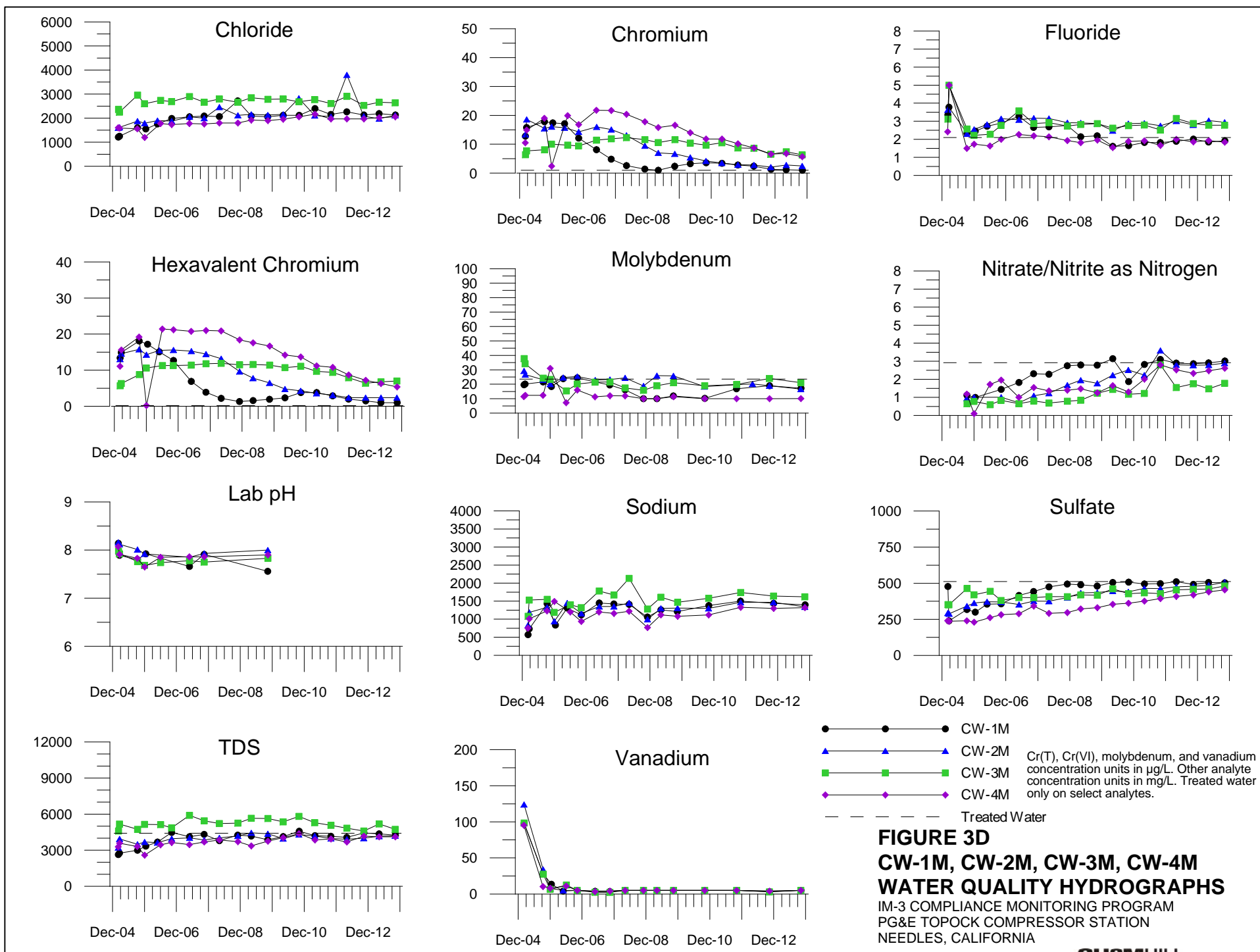
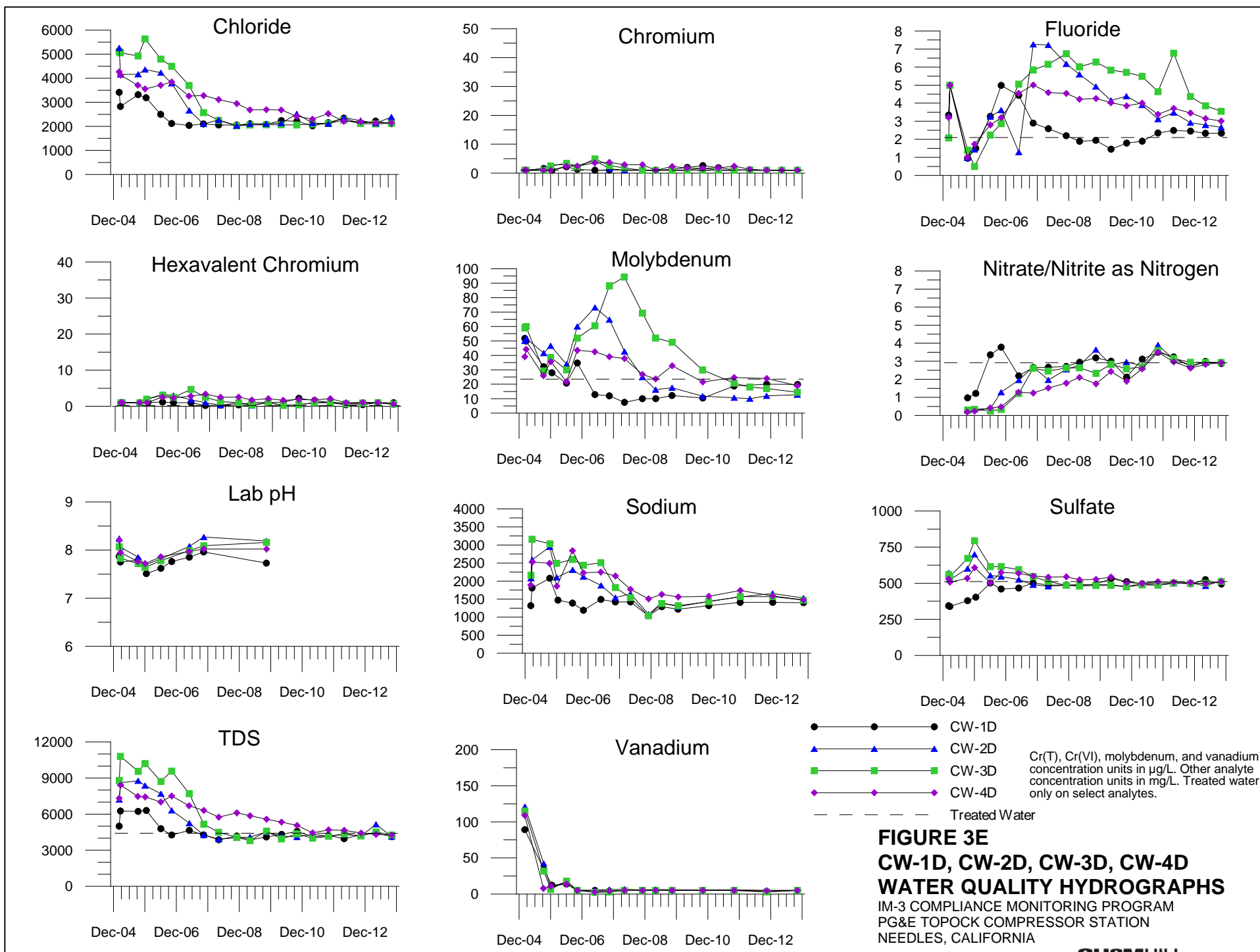
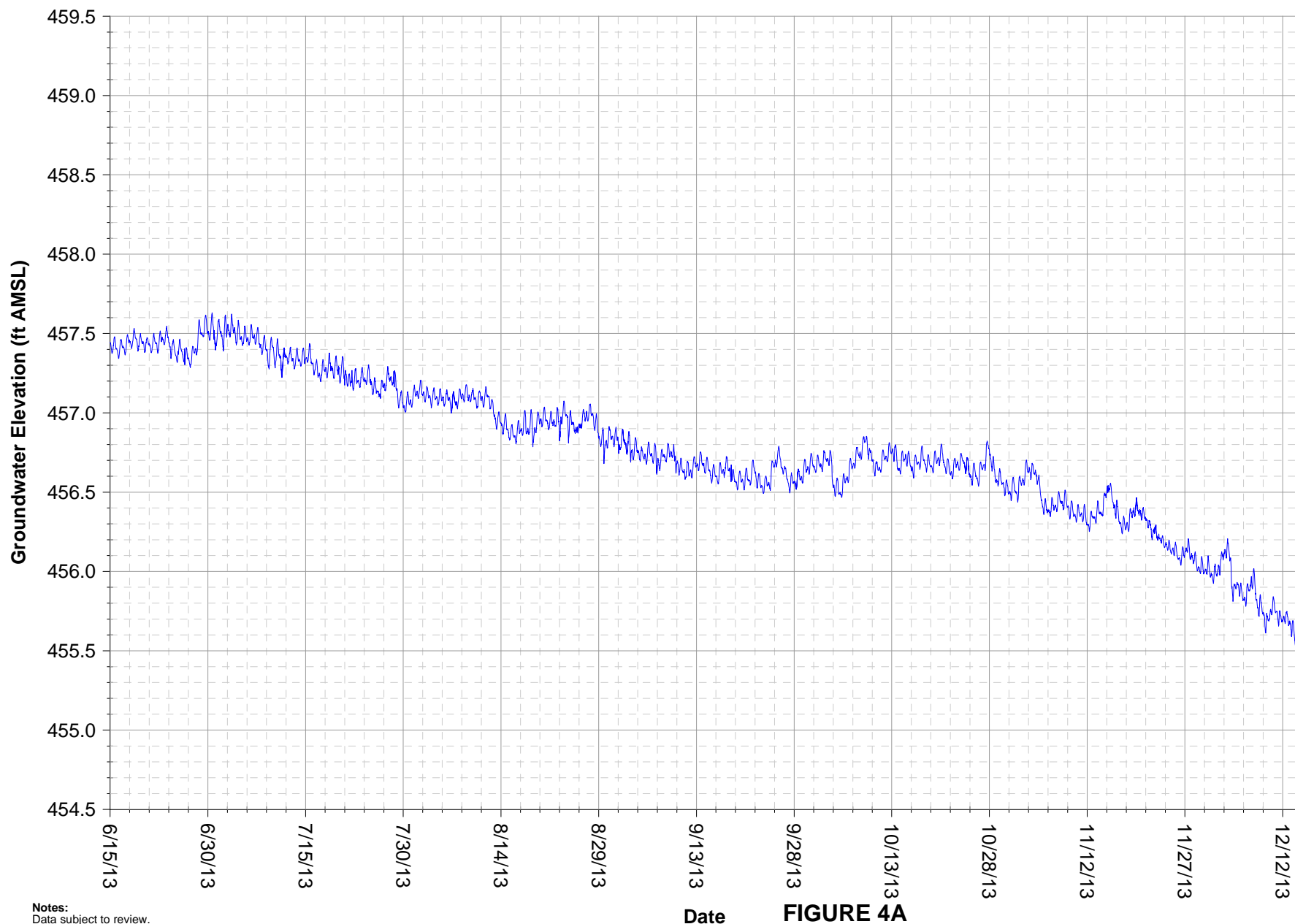


FIGURE 3B
OW-1M, OW-2M, OW-5M
WATER QUALITY HYDROGRAPHS
 IM-3 COMPLIANCE MONITORING PROGRAM
 PG&E TOPOCK COMPRESSOR STATION
 NEEDLES, CALIFORNIA



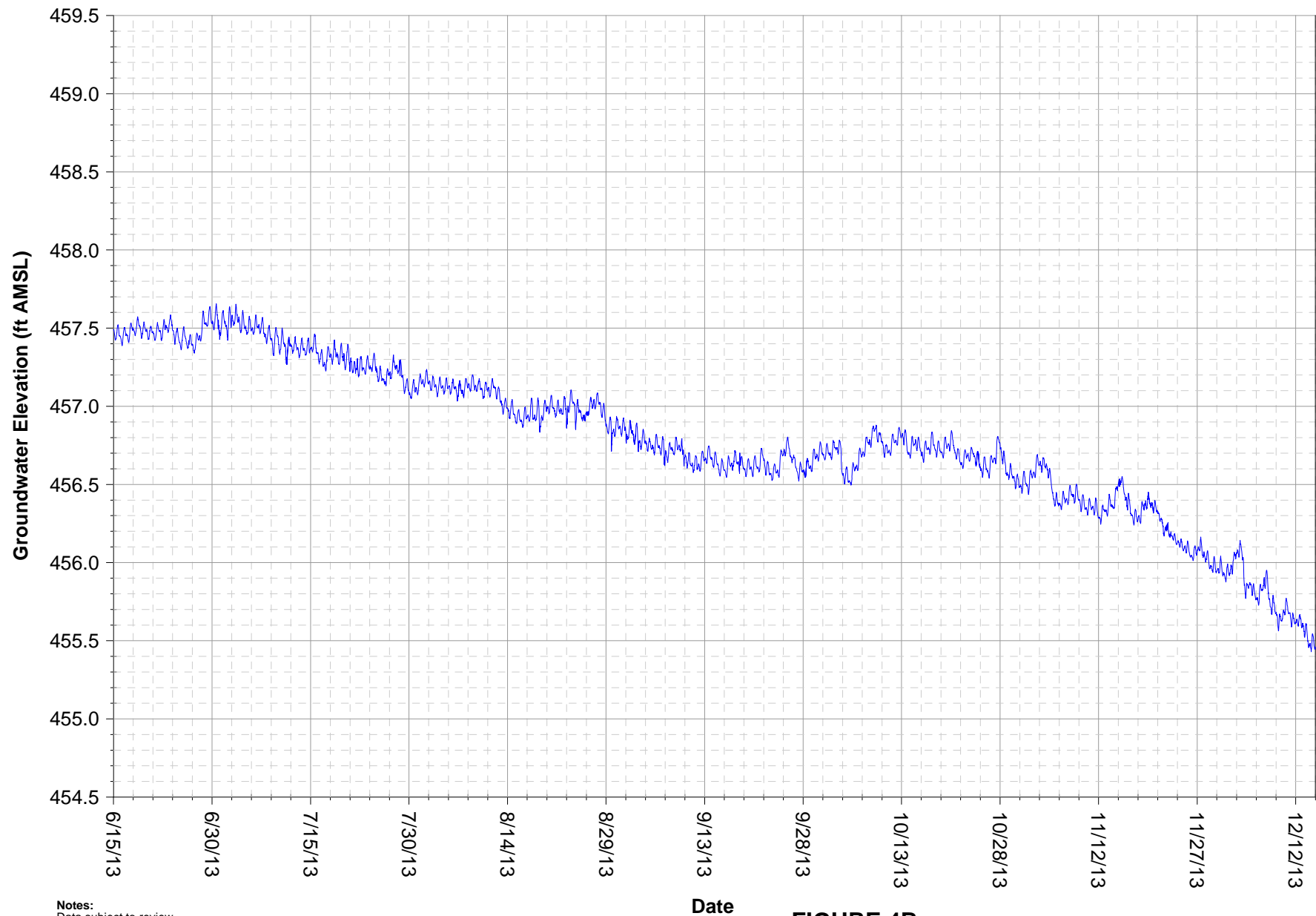






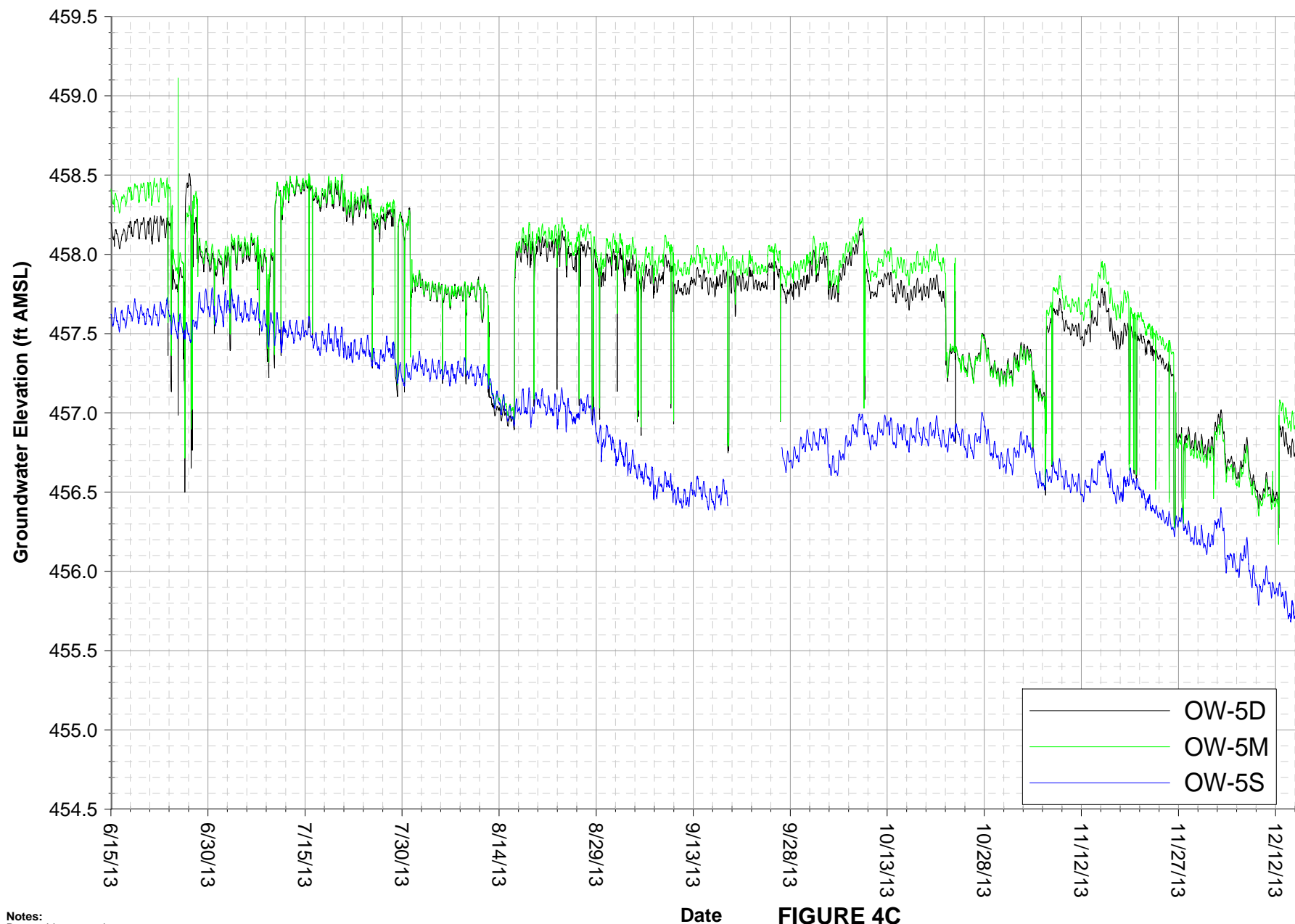
Notes:
Data subject to review.
Refer to Table 1 for injection well status.

FIGURE 4A
OW-1S GROUNDWATER ELEVATION HYDROGRAPH
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



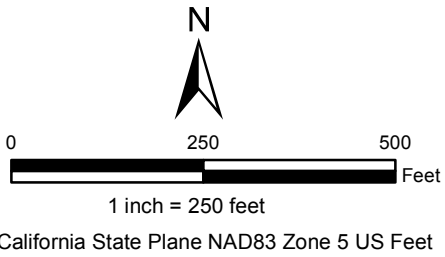
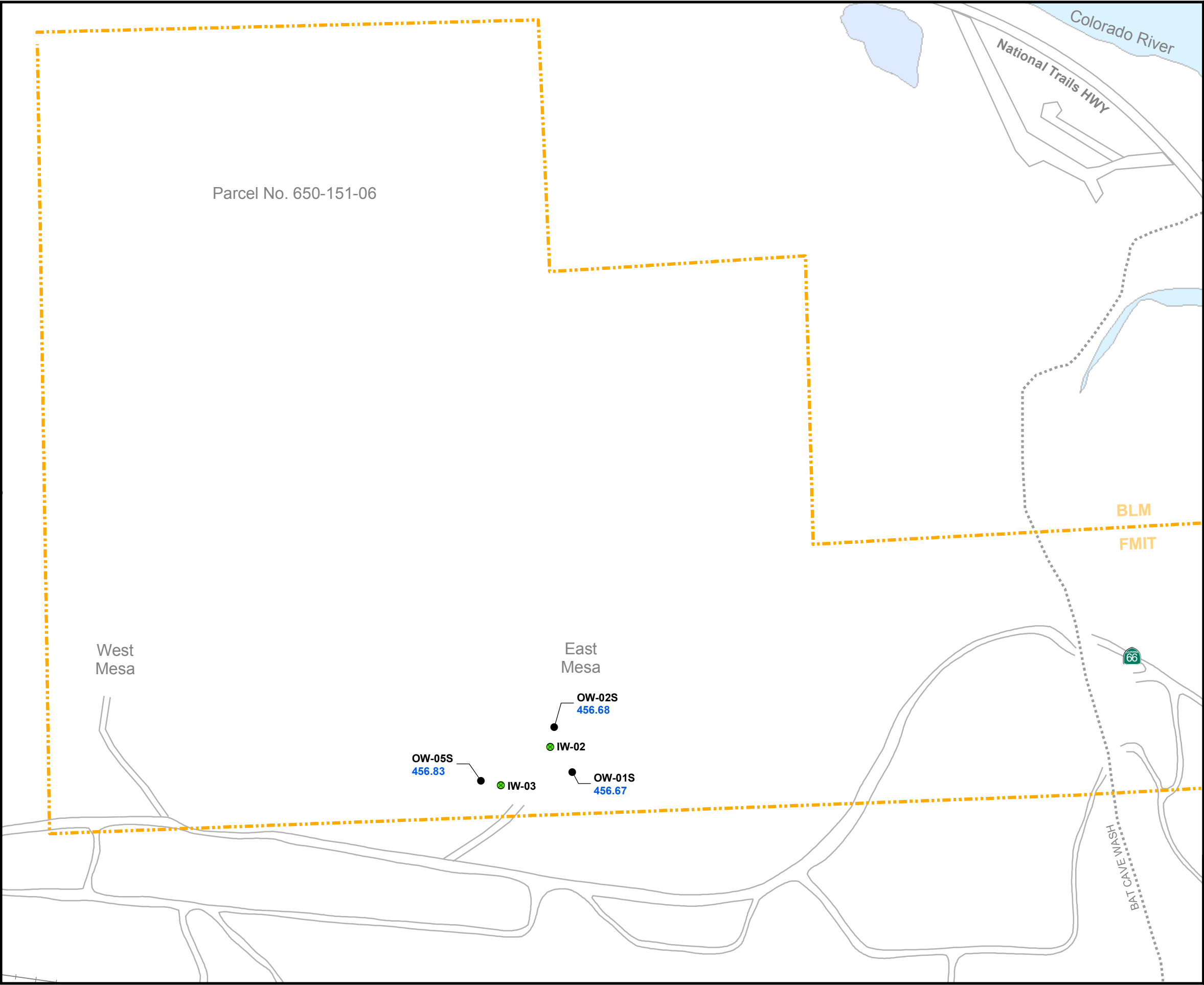
Notes:
Data subject to review.
Refer to Table 1 for injection well status.

FIGURE 4B
OW-2S GROUNDWATER ELEVATION HYDROGRAPH
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



Notes:
 Data subject to review.
 Refer to Table 1 for injection well status.
 OW-5S data unavailable from September 18, 2013 until September 26, 2013 due to transducer failure.

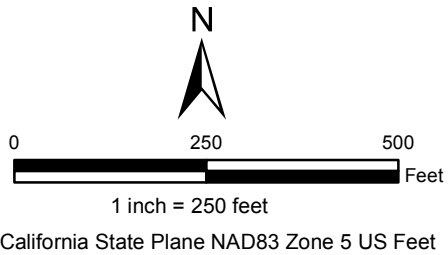
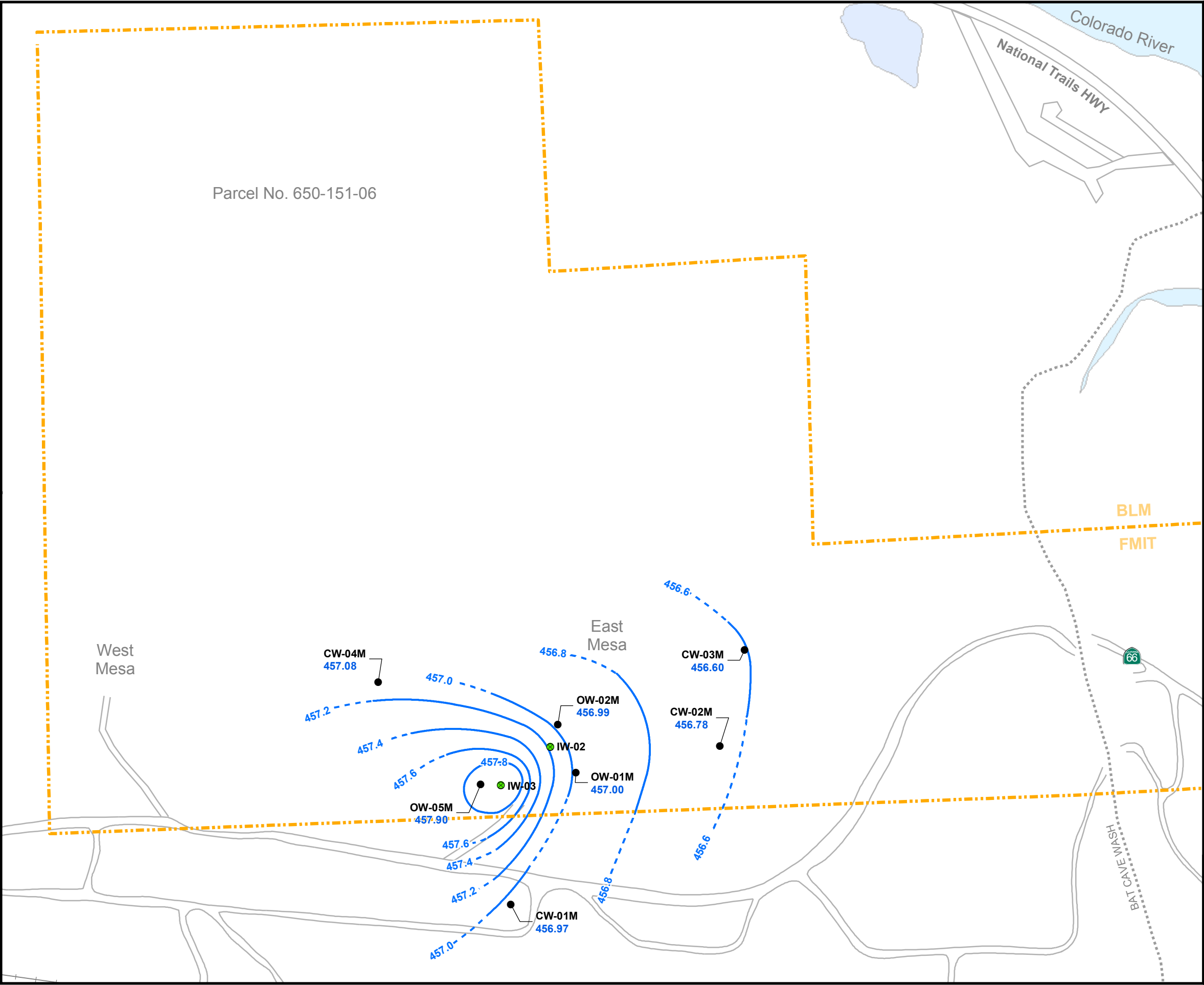
FIGURE 4C
OW-5 GROUNDWATER ELEVATION HYDROGRAPHS
 IM-3 COMPLIANCE MONITORING PROGRAM
 PG&E TOPOCK COMPRESSOR STATION
 NEEDLES, CALIFORNIA



- LEGEND**
- Groundwater Monitoring, Compliance, and Observation Well
 - IM-3 Injection Well
- Groundwater Elevations for Shallow Wells in IM-3 Injection Area**
- OW-05D** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
● **458.10**
 - Groundwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
Average monthly groundwater elevations are calculated with pressure transducer data measured at 30 minute intervals.

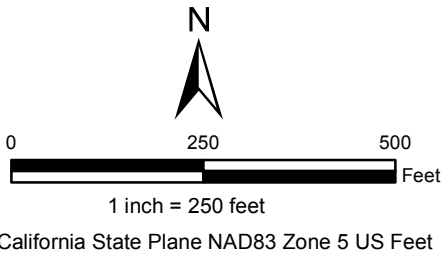
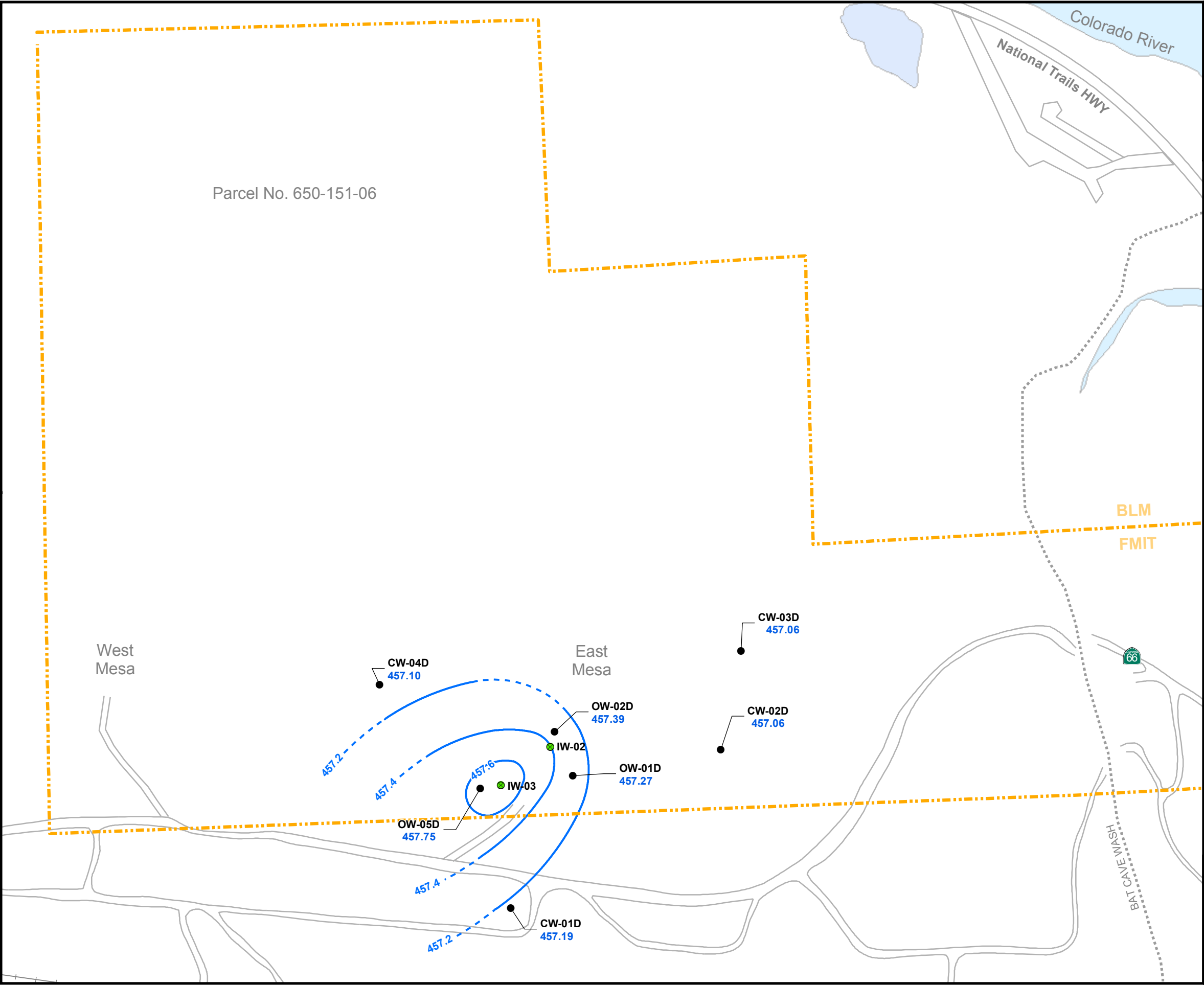
**FIGURE 5A
AVERAGE GROUNDWATER ELEVATION
CONTOURS FOR SHALLOW WELLS,
OCTOBER 21, 2013**
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



- LEGEND**
- Groundwater Monitoring, Compliance, and Observation Well
 - IM-3 Injection Well
- Groundwater Elevations for Mid-Depth Wells in IM-3 Injection Area**
- **OW-05D** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
 - **458.10**
- Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
Average monthly groundwater elevations are calculated with pressure transducer data measured at 30 minute intervals.

**FIGURE 5B
AVERAGE GROUNDWATER ELEVATION
CONTOURS FOR MID-DEPTH WELLS,
OCTOBER 21, 2013**
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



- LEGEND**
- Groundwater Monitoring, Compliance, and Observation Well
 - IM-3 Injection Well
- Groundwater Elevations for Deep Wells in IM-3 Injection Area**
- **OW-05D** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
● **458.10**
 - Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
Average monthly groundwater elevations are calculated with pressure transducer data measured at 30 minute intervals.

**FIGURE 5C
AVERAGE GROUNDWATER ELEVATION
CONTOURS FOR DEEP WELLS,
OCTOBER 21, 2013**
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Appendix A
Laboratory Reports, Second Half 2013

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 8, 2013

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2013-CMP-030, GROUNDWATER MONITORING
PROJECT, TLI NO.: 810321

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2013-CMP-030 groundwater-monitoring project. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data, and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody October 8, 2013, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Total Thallium by EPA 200.8 in batch 110613C was detected in the method blank just above the reporting limit. Because the sample results were all below the reporting limit and all other QA/QC were within acceptable limits, the data was accepted.

The straight run for the sample and associated matrix spike for samples CW-02D-030, CW-03D-030, and CW-04D-030 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits and the results from the straight run agreed with those of the 5x dilutions, the results from the straight runs were reported.

On November 5, 2013, Mr. Duffy provided an updated metals list via email.


Due to the discrepancy between the Total Dissolved Chromium (4.0 ug/L) and Hexavalent Chromium (2.4 ug/L) results for sample CW-02M-030, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were 2.5 ug/L and 2.4 ug/L, respectively. The original Total Dissolved Chromium digestate was re-analyzed for confirmation and yielded a result of 4.2 ug/L. After discussing the results with Mr. Duffy, the result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.


No other violations or non-conformance actions occurred for this data package.



If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Six (6) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 423575.MP.02.CM

Laboratory No.: 810321

Date: November 8, 2013

Collected: October 8, 2013

Received: October 8, 2013

Revision 1; December 9, 2013

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Maksim Gorbunov
SM 2540C	Total Dissolved Solids	Himani Vaishnav
SM 2320B	Total Alkalinity	Kim Luck
SM 2130B	Turbidity	Kim Luck
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Kim Luck / Maria Mangarova
EPA 200.7	Metals by ICP	Denise Chauv
SW 6010B	Metals by ICP	Denise Chauv
EPA 200.8	Metals by ICP/MS	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

TRUESDAIL LABORATORIES, INC.

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Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Laboratory No.: 810321

Date Received: October 8, 2013

Project Name: PG&E Topock Project

Project No.: 423575.MP.02.CM

P.O. No.: 423575.MP.02.CM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-001	CW-02D-030	E120.1	NONE	10/8/2013	11:59	EC	6680	umhos/cm	2.00
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Aluminum	ND	ug/L	20.0
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	BORON	964	ug/L	200
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Calcium	79200	ug/L	5000
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Iron	ND	ug/L	20.0
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Magnesium	4200	ug/L	1000
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Potassium	13700	ug/L	500
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Sodium	1530000	ug/L	100000
810321-001	CW-02D-030	E200.7	FLDFLT	10/8/2013	11:59	Zinc	ND	ug/L	20.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Antimony	ND	ug/L	2.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Arsenic	3.5	ug/L	0.50
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Barium	11.3	ug/L	5.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Beryllium	ND	ug/L	0.50
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Cadmium	ND	ug/L	1.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Chromium	ND	ug/L	1.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Cobalt	ND	ug/L	5.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Copper	ND	ug/L	5.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Lead	ND	ug/L	1.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Manganese	ND	ug/L	0.50
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Mercury	ND	ug/L	0.40
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Molybdenum	12.8	ug/L	2.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Nickel	3.1	ug/L	2.0

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Selenium	ND	ug/L	5.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Silver	ND	ug/L	5.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Thallium	ND	ug/L	1.0
810321-001	CW-02D-030	E200.8	FLDFLT	10/8/2013	11:59	Vanadium	5.3	ug/L	5.0
810321-001	CW-02D-030	E218.6	FLDFLT	10/8/2013	11:59	Chromium, Hexavalent	0.54	ug/L	0.20
810321-001	CW-02D-030	E300	NONE	10/8/2013	11:59	Chloride	2390	mg/L	50.0
810321-001	CW-02D-030	E300	NONE	10/8/2013	11:59	Fluoride	2.67	mg/L	0.500
810321-001	CW-02D-030	E300	NONE	10/8/2013	11:59	Sulfate	518	mg/L	50.0
810321-001	CW-02D-030	SM2130B	NONE	10/8/2013	11:59	Turbidity	0.130	NTU	0.100
810321-001	CW-02D-030	SM2320B	NONE	10/8/2013	11:59	Alkalinity	55.0	mg/L	5.00
810321-001	CW-02D-030	SM2320B	NONE	10/8/2013	11:59	Alkalinity, Bicarbonate (As	55.0	mg/L	5.00
810321-001	CW-02D-030	SM2320B	NONE	10/8/2013	11:59	Alkalinity, Carbonate (As C	ND	mg/L	5.00
810321-001	CW-02D-030	SM2540C	NONE	10/8/2013	11:59	Total Dissolved Solids	4140	mg/L	125
810321-001	CW-02D-030	SM4500NH3D	NONE	10/8/2013	11:59	Ammonia-N	ND	mg/L	0.500
810321-001	CW-02D-030	SW6010B	NONE	10/8/2013	11:59	Iron	ND	ug/L	20.0



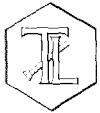
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-002	CW-02M-030	E120.1	NONE	10/8/2013	13:24	EC	6590	umhos/cm	2.00
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Aluminum	ND	ug/L	20.0
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	BORON	1120	ug/L	200
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Calcium	130000	ug/L	25000
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Iron	ND	ug/L	20.0
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Magnesium	10300	ug/L	1000
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Potassium	14600	ug/L	500
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Sodium	1340000	ug/L	100000
810321-002	CW-02M-030	E200.7	FLDFLT	10/8/2013	13:24	Zinc	ND	ug/L	20.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Antimony	ND	ug/L	2.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Arsenic	2.1	ug/L	0.50
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Barium	63.9	ug/L	5.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Beryllium	ND	ug/L	0.50
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Cadmium	ND	ug/L	1.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Chromium	2.5	ug/L	1.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Cobalt	ND	ug/L	5.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Copper	ND	ug/L	5.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Lead	ND	ug/L	1.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Manganese	ND	ug/L	0.50
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Mercury	ND	ug/L	0.40
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Molybdenum	16.6	ug/L	2.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Nickel	ND	ug/L	2.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Selenium	ND	ug/L	5.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Silver	ND	ug/L	5.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Thallium	ND	ug/L	1.0
810321-002	CW-02M-030	E200.8	FLDFLT	10/8/2013	13:24	Vanadium	ND	ug/L	5.0
810321-002	CW-02M-030	E218.6	FLDFLT	10/8/2013	13:24	Chromium, Hexavalent	2.4	ug/L	1.0
810321-002	CW-02M-030	E300	NONE	10/8/2013	13:24	Chloride	2120	mg/L	50.0
810321-002	CW-02M-030	E300	NONE	10/8/2013	13:24	Fluoride	2.95	mg/L	0.500
810321-002	CW-02M-030	E300	NONE	10/8/2013	13:24	Sulfate	507	mg/L	25.0
810321-002	CW-02M-030	SM2130B	NONE	10/8/2013	13:24	Turbidity	0.103	NTU	0.100
810321-002	CW-02M-030	SM2320B	NONE	10/8/2013	13:24	Alkalinity	54.0	mg/L	5.00
810321-002	CW-02M-030	SM2320B	NONE	10/8/2013	13:24	Alkalinity, Bicarbonate (As	54.0	mg/L	5.00
810321-002	CW-02M-030	SM2320B	NONE	10/8/2013	13:24	Alkalinity, Carbonate (As C	ND	mg/L	5.00
810321-002	CW-02M-030	SM2540C	NONE	10/8/2013	13:24	Total Dissolved Solids	4200	mg/L	125
810321-002	CW-02M-030	SM4500NH3D	NONE	10/8/2013	13:24	Ammonia-N	ND	mg/L	0.500
810321-002	CW-02M-030	SW6010B	NONE	10/8/2013	13:24	Iron	ND	ug/L	20.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-003	CW-03D-030	E120.1	NONE	10/8/2013	9:12	EC	6600	umhos/cm	2.00
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Aluminum	ND	ug/L	20.0
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	BORON	1010	ug/L	200
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Calcium	75000	ug/L	5000
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Iron	ND	ug/L	20.0
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Magnesium	5370	ug/L	1000
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Potassium	14000	ug/L	500
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Sodium	1470000	ug/L	100000
810321-003	CW-03D-030	E200.7	FLDFLT	10/8/2013	9:12	Zinc	ND	ug/L	20.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Antimony	ND	ug/L	2.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Arsenic	1.6	ug/L	0.50
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Barium	13.2	ug/L	5.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Beryllium	ND	ug/L	0.50
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Cadmium	ND	ug/L	1.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Chromium	ND	ug/L	1.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Cobalt	ND	ug/L	5.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Copper	ND	ug/L	5.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Lead	ND	ug/L	1.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Manganese	ND	ug/L	0.50
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Mercury	ND	ug/L	0.40
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Molybdenum	14.4	ug/L	2.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Nickel	ND	ug/L	2.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Selenium	ND	ug/L	5.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Silver	ND	ug/L	5.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Thallium	ND	ug/L	1.0
810321-003	CW-03D-030	E200.8	FLDFLT	10/8/2013	9:12	Vanadium	ND	ug/L	5.0
810321-003	CW-03D-030	E218.6	FLDFLT	10/8/2013	9:12	Chromium, Hexavalent	0.66	ug/L	0.20
810321-003	CW-03D-030	E300	NONE	10/8/2013	9:12	Chloride	2130	mg/L	50.0
810321-003	CW-03D-030	E300	NONE	10/8/2013	9:12	Fluoride	3.55	mg/L	0.500
810321-003	CW-03D-030	E300	NONE	10/8/2013	9:12	Sulfate	512	mg/L	25.0
810321-003	CW-03D-030	SM2130B	NONE	10/8/2013	9:12	Turbidity	ND	NTU	0.100
810321-003	CW-03D-030	SM2320B	NONE	10/8/2013	9:12	Alkalinity	58.0	mg/L	5.00
810321-003	CW-03D-030	SM2320B	NONE	10/8/2013	9:12	Alkalinity, Bicarbonate (As	58.0	mg/L	5.00
810321-003	CW-03D-030	SM2320B	NONE	10/8/2013	9:12	Alkalinity, Carbonate (As C	ND	mg/L	5.00
810321-003	CW-03D-030	SM2540C	NONE	10/8/2013	9:12	Total Dissolved Solids	4260	mg/L	125
810321-003	CW-03D-030	SM4500NH3D	NONE	10/8/2013	9:12	Ammonia-N	ND	mg/L	0.500
810321-003	CW-03D-030	SW6010B	NONE	10/8/2013	9:12	Iron	ND	ug/L	20.0

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-004	CW-03M-030	E120.1	NONE	10/8/2013	10:12	EC	7840	umhos/cm	2.00
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Aluminum	ND	ug/L	20.0
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	BORON	1070	ug/L	200
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Calcium	198000	ug/L	10000
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Iron	ND	ug/L	20.0
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Magnesium	15800	ug/L	1000
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Potassium	17300	ug/L	500
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Sodium	1620000	ug/L	100000
810321-004	CW-03M-030	E200.7	FLDFLT	10/8/2013	10:12	Zinc	ND	ug/L	20.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Antimony	ND	ug/L	2.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Arsenic	1.3	ug/L	0.50
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Barium	44.2	ug/L	5.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Beryllium	ND	ug/L	0.50
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Cadmium	ND	ug/L	1.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Chromium	6.3	ug/L	1.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Cobalt	ND	ug/L	5.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Copper	ND	ug/L	5.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Lead	ND	ug/L	1.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Manganese	ND	ug/L	0.50
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Mercury	ND	ug/L	0.40
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Molybdenum	21.1	ug/L	2.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Nickel	ND	ug/L	2.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Selenium	ND	ug/L	5.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Silver	ND	ug/L	5.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Thallium	ND	ug/L	1.0
810321-004	CW-03M-030	E200.8	FLDFLT	10/8/2013	10:12	Vanadium	ND	ug/L	5.0
810321-004	CW-03M-030	E218.6	FLDFLT	10/8/2013	10:12	Chromium, Hexavalent	7.0	ug/L	1.0
810321-004	CW-03M-030	E300	NONE	10/8/2013	10:12	Chloride	2640	mg/L	50.0
810321-004	CW-03M-030	E300	NONE	10/8/2013	10:12	Fluoride	2.78	mg/L	0.500
810321-004	CW-03M-030	E300	NONE	10/8/2013	10:12	Sulfate	481	mg/L	25.0
810321-004	CW-03M-030	SM2130B	NONE	10/8/2013	10:12	Turbidity	ND	NTU	0.100
810321-004	CW-03M-030	SM2320B	NONE	10/8/2013	10:12	Alkalinity	48.0	mg/L	5.00
810321-004	CW-03M-030	SM2320B	NONE	10/8/2013	10:12	Alkalinity, Bicarbonate (As	48.0	mg/L	5.00
810321-004	CW-03M-030	SM2320B	NONE	10/8/2013	10:12	Alkalinity, Carbonate (As C	ND	mg/L	5.00
810321-004	CW-03M-030	SM2540C	NONE	10/8/2013	10:12	Total Dissolved Solids	4740	mg/L	250
810321-004	CW-03M-030	SM4500NH3D	NONE	10/8/2013	10:12	Ammonia-N	ND	mg/L	0.500
810321-004	CW-03M-030	SW6010B	NONE	10/8/2013	10:12	Iron	ND	ug/L	20.0



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-005	CW-04D-030	E120.1	NONE	10/8/2013	15:02	EC	6710	umhos/cm	2.00
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Aluminum	ND	ug/L	20.0
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	BORON	1070	ug/L	200
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Calcium	116000	ug/L	5000
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Iron	ND	ug/L	20.0
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Magnesium	7570	ug/L	1000
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Potassium	14100	ug/L	500
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Sodium	1480000	ug/L	100000
810321-005	CW-04D-030	E200.7	FLDFLT	10/8/2013	15:02	Zinc	ND	ug/L	20.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Antimony	ND	ug/L	2.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Arsenic	3.6	ug/L	0.50
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Barium	16.2	ug/L	5.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Beryllium	ND	ug/L	0.50
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Cadmium	ND	ug/L	1.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Chromium	ND	ug/L	1.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Cobalt	ND	ug/L	5.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Copper	ND	ug/L	5.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Lead	ND	ug/L	1.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Manganese	ND	ug/L	0.50
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Mercury	ND	ug/L	0.40
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Molybdenum	19.0	ug/L	2.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Nickel	2.8	ug/L	2.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Selenium	ND	ug/L	5.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Silver	ND	ug/L	5.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Thallium	ND	ug/L	1.0
810321-005	CW-04D-030	E200.8	FLDFLT	10/8/2013	15:02	Vanadium	ND	ug/L	5.0
810321-005	CW-04D-030	E218.6	FLDFLT	10/8/2013	15:02	Chromium, Hexavalent	0.63	ug/L	0.20
810321-005	CW-04D-030	E300	NONE	10/8/2013	15:02	Chloride	2150	mg/L	50.0
810321-005	CW-04D-030	E300	NONE	10/8/2013	15:02	Fluoride	3.01	mg/L	0.500
810321-005	CW-04D-030	E300	NONE	10/8/2013	15:02	Sulfate	511	mg/L	25.0
810321-005	CW-04D-030	SM2130B	NONE	10/8/2013	15:02	Turbidity	0.110	NTU	0.100
810321-005	CW-04D-030	SM2320B	NONE	10/8/2013	15:02	Alkalinity	50.0	mg/L	5.00
810321-005	CW-04D-030	SM2320B	NONE	10/8/2013	15:02	Alkalinity, Bicarbonate (As	50.0	mg/L	5.00
810321-005	CW-04D-030	SM2320B	NONE	10/8/2013	15:02	Alkalinity, Carbonate (As C	ND	mg/L	5.00
810321-005	CW-04D-030	SM2540C	NONE	10/8/2013	15:02	Total Dissolved Solids	4260	mg/L	125
810321-005	CW-04D-030	SM4500NH3D	NONE	10/8/2013	15:02	Ammonia-N	ND	mg/L	0.500
810321-005	CW-04D-030	SW6010B	NONE	10/8/2013	15:02	Iron	ND	ug/L	20.0



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810321-006	OW-80-030	E218.6	FLDFLT	10/8/2013	15:23	Chromium, Hexavalent	ND	ug/L	0.20

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

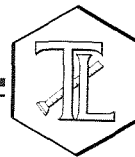
Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 423575.MP.02.CM

P.O. Number: 423575.MP.02.CM

Release Number:

Laboratory No. 810321

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Printed 11/8/2013

Samples Received on 10/8/2013 8:10:00 PM

Field ID	Lab ID	Collected	Matrix
CW-02D-030	810321-001	10/08/2013 11:59	Water
CW-02M-030	810321-002	10/08/2013 13:24	Water
CW-03D-030	810321-003	10/08/2013 09:12	Water
CW-03M-030	810321-004	10/08/2013 10:12	Water
CW-04D-030	810321-005	10/08/2013 15:02	Water
OW-80-030	810321-006	10/08/2013 15:23	Water

Anions By I.C. - EPA 300.0

Batch 10AN13F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Fluoride	mg/L	10/09/2013 13:27	5.00	0.104	0.500	2.67
Sulfate	mg/L	10/09/2013 15:28	100	3.07	50.0	518
810321-002 Fluoride	mg/L	10/09/2013 13:38	5.00	0.104	0.500	2.95
Sulfate	mg/L	10/09/2013 16:02	50.0	1.54	25.0	507
810321-003 Fluoride	mg/L	10/09/2013 14:13	5.00	0.104	0.500	3.55
Sulfate	mg/L	10/09/2013 16:14	50.0	1.54	25.0	512
810321-004 Fluoride	mg/L	10/09/2013 14:24	5.00	0.104	0.500	2.78
Sulfate	mg/L	10/09/2013 16:25	50.0	1.54	25.0	481
810321-005 Fluoride	mg/L	10/09/2013 14:58	5.00	0.104	0.500	3.01
Sulfate	mg/L	10/09/2013 16:36	50.0	1.54	25.0	511

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	0.757	0.765	1.05	0 - 20

Lab ID = 810304-001

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Duplicate

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	100	535	518	3.18	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.16	4.00	104	90 - 110
Sulfate	mg/L	1.00	20.2	20.0	101	90 - 110

Matrix Spike

Lab ID = 810304-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.72	2.76(2.00)	97.8	85 - 115

Matrix Spike

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	100	1030	1020(500)	102	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.15	4.00	104	90 - 110
Sulfate	mg/L	1.00	20.2	20.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.10	3.00	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.11	3.00	104	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.08	3.00	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.3	15.0	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Anions By I.C. - EPA 300.0

Batch 10AN13K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Chloride	mg/L	10/11/2013 15:43	500	17.4	50.0	2390
810321-002 Chloride	mg/L	10/11/2013 15:54	500	17.4	50.0	2120
810321-003 Chloride	mg/L	10/11/2013 16:05	500	17.4	50.0	2130
810321-004 Chloride	mg/L	10/11/2013 16:17	500	17.4	50.0	2640
810321-005 Chloride	mg/L	10/11/2013 16:28	500	17.4	50.0	2150

Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND

Duplicate

Lab ID = 810390-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	1.00	ND	0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.91	4.00	97.8	90 - 110

Matrix Spike

Lab ID = 810390-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	1.00	1.81	2.00(2.00)	90.4	85 - 115

Matrix Spike Duplicate

Lab ID = 810390-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	1.00	1.81	2.00(2.00)	90.3	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.98	4.00	99.4	90 - 110

MRCVS - Primary

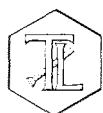
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.01	3.00	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.10	3.00	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.93	3.00	97.6	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
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Project Number: 423575.MP.02.CM
Printed 11/8/2013
Alkalinity by SM 2320B
Batch 10ALK13C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	55.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	55.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810321-002 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	54.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	54.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810321-003 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	58.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	58.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810321-004 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	48.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	48.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810321-005 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	50.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	50.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO ₃	mg/L	1.00	ND

Duplicate
Lab ID = 810321-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	50.0	50.0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	98.0	100	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	98.0	100	98.0	90 - 110

Matrix Spike
Lab ID = 810371-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	212	205(100)	107	75 - 125

Matrix Spike Duplicate
Lab ID = 810371-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	211	205(100)	106	75 - 125



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Specific Conductivity - EPA 120.1

Batch 10EC13E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Specific Conductivity	umhos/cm	10/11/2013	1.00	0.606	2.00	6680
810321-002 Specific Conductivity	umhos/cm	10/11/2013	1.00	0.606	2.00	6590
810321-003 Specific Conductivity	umhos/cm	10/11/2013	1.00	0.606	2.00	6600
810321-004 Specific Conductivity	umhos/cm	10/11/2013	1.00	0.606	2.00	7840
810321-005 Specific Conductivity	umhos/cm	10/11/2013	1.00	0.606	2.00	6710

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 810321-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	6880	6710	2.50	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	722	706	102	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	707	706	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1020	1000	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1010	1000	101	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Metals by EPA 6010B, Total

Batch 101813A-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Iron	ug/L	10/18/2013 16:56	1.00	3.00	20.0	ND
810321-002 Iron	ug/L	10/18/2013 17:21	1.00	3.00	20.0	ND
810321-003 Iron	ug/L	10/18/2013 17:28	1.00	3.00	20.0	ND
810321-004 Iron	ug/L	10/18/2013 17:34	1.00	3.00	20.0	ND
810321-005 Iron	ug/L	10/18/2013 17:41	1.00	3.00	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	0.200

Duplicate

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	19.2	12.8	40.0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2160	2000	108	85 - 115

Matrix Spike

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1920	2010(2000)	95.6	75 - 125

Matrix Spike Duplicate

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1940	2010(2000)	96.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5150	5000	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5250	5000	105	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5180	5000	104	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5210	5000	104	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Chrome VI by EPA 218.6

Batch 10CrH13F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Chromium, Hexavalent	ug/L	10/10/2013 08:43	1.00	0.00600	0.20	0.54
810321-003 Chromium, Hexavalent	ug/L	10/10/2013 09:04	1.00	0.00600	0.20	0.66
810321-005 Chromium, Hexavalent	ug/L	10/10/2013 09:25	1.00	0.00600	0.20	0.63
810321-006 Chromium, Hexavalent	ug/L	10/10/2013 09:35	1.00	0.00600	0.20	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 810350-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	19.0	19.1	0.340	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	99.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.2	90 - 110

Matrix Spike

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.58	1.54(1.00)	104	90 - 110

Matrix Spike

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.25	5.51(5.00)	95.0	90 - 110

Matrix Spike

Lab ID = 810321-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.30	7.45(5.00)	97.0	90 - 110

Matrix Spike

Lab ID = 810321-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.67	1.66(1.00)	100	90 - 110

Matrix Spike

Lab ID = 810321-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.50	5.69(5.00)	96.2	90 - 110



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Project Number: 423575.MP.02.CM

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Matrix Spike						Lab ID = 810321-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.4	16.6(10.0)	98.3	90 - 110
Matrix Spike						Lab ID = 810321-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	55.1	55.2(50.0)	99.7	90 - 110
Matrix Spike						Lab ID = 810321-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.62	1.63(1.00)	98.5	90 - 110
Matrix Spike						Lab ID = 810321-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.65	5.61(5.00)	101	90 - 110
Matrix Spike						Lab ID = 810321-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.992	1.00(1.00)	99.2	90 - 110
Matrix Spike						Lab ID = 810350-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.0	18.4(10.0)	95.9	90 - 110
Matrix Spike						Lab ID = 810350-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.48	9.54(5.00)	98.7	90 - 110
Matrix Spike						Lab ID = 810351-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.18	1.13(1.00)	105	90 - 110
Matrix Spike						Lab ID = 810351-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.88	5.14(5.00)	94.8	90 - 110
Matrix Spike						Lab ID = 810351-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.999	1.00(1.00)	99.9	90 - 110
Matrix Spike						Lab ID = 810351-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.60	1.58(1.00)	103	90 - 110
Matrix Spike						Lab ID = 810351-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.62	1.61(1.00)	101	90 - 110



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Project Number: 423575.MP.02.CM

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Chromium VI by EPA 218.6

Batch 10CrH13T

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-002 Chromium, Hexavalent	ug/L	10/19/2013 17:03	5.00	0.0300	1.0	2.4
810321-004 Chromium, Hexavalent	ug/L	10/19/2013 17:13	5.00	0.0300	1.0	7.0

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.6	18.2	3.25	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.184	0.200	92.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.13	7.35(5.00)	95.5	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	30.1	32.0(25.0)	92.4	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	28.8	30.4(25.0)	93.5	90 - 110

Matrix Spike

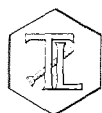
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.58	5.71(5.00)	97.4	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.98	6.19(5.00)	95.9	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.2	17.6(10.0)	95.8	90 - 110



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Project Number: 423575.MP.02.CM

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Total Dissolved Solids by SM 2540 C		Batch 10TDS13F				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Total Dissolved Solids	mg/L	10/09/2013	1.00	1.76	125	4140
810321-002 Total Dissolved Solids	mg/L	10/09/2013	1.00	1.76	125	4200
810321-003 Total Dissolved Solids	mg/L	10/09/2013	1.00	1.76	125	4260
810321-004 Total Dissolved Solids	mg/L	10/09/2013	1.00	1.76	250	4740
810321-005 Total Dissolved Solids	mg/L	10/09/2013	1.00	1.76	125	4260

Method Blank

Parameter	Unit	DF	Result			
Total Dissolved Solids	mg/L	1.00	ND			
Duplicate			Lab ID = 810353-001			
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	362	340	6.27	0 - 10
Duplicate			Lab ID = 810353-009			
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1300	1330	2.44	0 - 10
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	489	500	97.8	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Ammonia Nitrogen by SM4500-NH3D

Batch 10NH313C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Ammonia as N	mg/L	10/29/2013	1.00	0.0318	0.500	ND
810321-002 Ammonia as N	mg/L	10/29/2013	1.00	0.0318	0.500	ND
810321-003 Ammonia as N	mg/L	10/29/2013	1.00	0.0318	0.500	ND
810321-004 Ammonia as N	mg/L	10/29/2013	1.00	0.0318	0.500	ND
810321-005 Ammonia as N	mg/L	10/29/2013	1.00	0.0318	0.500	ND

Method Blank

Parameter	Unit	DF	Result
Ammonia as N	mg/L	1.00	ND

Duplicate

Lab ID = 810442-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	ND	0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.26	10.0	92.6	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.6	10.0	106	90 - 110

Matrix Spike

Lab ID = 810442-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.80	10.0(10.0)	98.0	75 - 125

Matrix Spike Duplicate

Lab ID = 810442-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	8.87	10.0(10.0)	88.7	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.94	6.00	99.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.39	6.00	106	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 17 of 45****Project Number: 423575.MP.02.CM****Printed 11/8/2013****Metals by EPA 200.8, Dissolved**

Batch 100913B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-001 Antimony	ug/L	10/09/2013 22:00	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/09/2013 22:00	2.00	0.100	0.50	3.5
Barium	ug/L	10/09/2013 22:00	2.00	0.594	5.0	11.3
Beryllium	ug/L	10/09/2013 22:00	2.00	0.0724	0.50	ND
Cadmium	ug/L	10/09/2013 22:00	2.00	0.0800	1.0	ND
Chromium	ug/L	10/09/2013 22:00	2.00	0.142	1.0	ND
Cobalt	ug/L	10/09/2013 22:00	2.00	0.0800	5.0	ND
Copper	ug/L	10/09/2013 22:00	2.00	0.380	5.0	ND
Lead	ug/L	10/09/2013 22:00	2.00	0.286	1.0	ND
Mercury	ug/L	10/09/2013 22:00	2.00	0.0800	0.40	ND
810321-002 Antimony	ug/L	10/09/2013 22:42	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/09/2013 22:42	2.00	0.100	0.50	2.1
Beryllium	ug/L	10/09/2013 22:42	2.00	0.0724	0.50	ND
Cadmium	ug/L	10/09/2013 22:42	2.00	0.0800	1.0	ND
Cobalt	ug/L	10/09/2013 22:42	2.00	0.0800	5.0	ND
Copper	ug/L	10/09/2013 22:42	2.00	0.380	5.0	ND
Lead	ug/L	10/09/2013 22:42	2.00	0.286	1.0	ND
Mercury	ug/L	10/09/2013 22:42	2.00	0.0800	0.40	ND
810321-003 Antimony	ug/L	10/09/2013 22:48	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/09/2013 22:48	2.00	0.100	0.50	1.6
Barium	ug/L	10/09/2013 22:48	2.00	0.594	5.0	13.2
Beryllium	ug/L	10/09/2013 22:48	2.00	0.0724	0.50	ND
Cadmium	ug/L	10/09/2013 22:48	2.00	0.0800	1.0	ND
Chromium	ug/L	10/09/2013 22:48	2.00	0.142	1.0	ND
Cobalt	ug/L	10/09/2013 22:48	2.00	0.0800	5.0	ND
Copper	ug/L	10/09/2013 22:48	2.00	0.380	5.0	ND
Lead	ug/L	10/09/2013 22:48	2.00	0.286	1.0	ND
Mercury	ug/L	10/09/2013 22:48	2.00	0.0800	0.40	ND
810321-004 Antimony	ug/L	10/09/2013 22:54	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/09/2013 22:54	2.00	0.100	0.50	1.3
Beryllium	ug/L	10/09/2013 22:54	2.00	0.0724	0.50	ND
Cadmium	ug/L	10/09/2013 22:54	2.00	0.0800	1.0	ND
Chromium	ug/L	10/09/2013 22:54	2.00	0.142	1.0	6.3
Cobalt	ug/L	10/09/2013 22:54	2.00	0.0800	5.0	ND



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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810321-004 Copper	ug/L	10/09/2013 22:54	2.00	0.380	5.0	ND
Lead	ug/L	10/09/2013 22:54	2.00	0.286	1.0	ND
Mercury	ug/L	10/09/2013 22:54	2.00	0.0800	0.40	ND
810321-005 Antimony	ug/L	10/09/2013 23:00	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/09/2013 23:00	2.00	0.100	0.50	3.6
Barium	ug/L	10/09/2013 23:00	2.00	0.594	5.0	16.2
Beryllium	ug/L	10/09/2013 23:00	2.00	0.0724	0.50	ND
Cadmium	ug/L	10/09/2013 23:00	2.00	0.0800	1.0	ND
Chromium	ug/L	10/09/2013 23:00	2.00	0.142	1.0	ND
Cobalt	ug/L	10/09/2013 23:00	2.00	0.0800	5.0	ND
Copper	ug/L	10/09/2013 23:00	2.00	0.380	5.0	ND
Lead	ug/L	10/09/2013 23:00	2.00	0.286	1.0	ND
Mercury	ug/L	10/09/2013 23:00	2.00	0.0800	0.40	ND

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Beryllium	ug/L	1.00	ND
Cadmium	ug/L	1.00	ND
Cobalt	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Mercury	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Lead	ug/L	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	2.00	3.44	3.51	1.96	0 - 20
Barium	ug/L	2.00	11.3	11.3	0.00885	0 - 20
Beryllium	ug/L	2.00	ND	0	0	0 - 20
Cadmium	ug/L	2.00	ND	0	0	0 - 20
Cobalt	ug/L	2.00	ND	0	0	0 - 20
Chromium	ug/L	2.00	ND	0	0	0 - 20
Mercury	ug/L	2.00	ND	0	0	0 - 20
Antimony	ug/L	2.00	ND	0	0	0 - 20
Copper	ug/L	2.00	ND	0	0	0 - 20
Lead	ug/L	2.00	ND	0	0	0 - 20

Lab ID = 810321-001

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.207	0.200	104	70 - 130
Barium	ug/L	1.00	0.818	1.00	81.8	70 - 130
Beryllium	ug/L	1.00	0.200	0.200	100	70 - 130
Cadmium	ug/L	1.00	0.187	0.200	93.5	70 - 130
Cobalt	ug/L	1.00	0.197	0.200	98.5	70 - 130
Chromium	ug/L	1.00	0.190	0.200	95.0	70 - 130
Mercury	ug/L	1.00	0.201	0.200	100	70 - 130
Antimony	ug/L	1.00	0.214	0.200	107	70 - 130
Copper	ug/L	1.00	2.24	2.00	112	70 - 130
Lead	ug/L	1.00	0.471	0.500	94.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	48.7	50.0	97.4	85 - 115
Barium	ug/L	1.00	49.0	50.0	98.0	85 - 115
Beryllium	ug/L	1.00	47.5	50.0	95.0	85 - 115
Cadmium	ug/L	1.00	48.4	50.0	96.8	85 - 115
Cobalt	ug/L	1.00	48.9	50.0	97.8	85 - 115
Chromium	ug/L	1.00	48.0	50.0	96.0	85 - 115
Mercury	ug/L	1.00	4.85	5.00	97.1	85 - 115
Antimony	ug/L	1.00	50.6	50.0	101	85 - 115
Copper	ug/L	1.00	48.9	50.0	97.8	85 - 115
Lead	ug/L	1.00	50.1	50.0	100	85 - 115

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	52.3	53.5(50.0)	97.6	75 - 125
Barium	ug/L	2.00	59.9	61.3(50.0)	97.2	75 - 125
Beryllium	ug/L	2.00	42.2	50.0(50.0)	84.4	75 - 125
Cadmium	ug/L	2.00	44.0	50.0(50.0)	88.1	75 - 125
Cobalt	ug/L	2.00	45.6	50.0(50.0)	91.3	75 - 125
Chromium	ug/L	2.00	46.8	50.0(50.0)	93.6	75 - 125
Mercury	ug/L	2.00	4.60	5.00(5.00)	92.0	75 - 125
Antimony	ug/L	2.00	49.8	50.0(50.0)	99.6	75 - 125
Copper	ug/L	2.00	44.1	50.0(50.0)	88.2	75 - 125
Lead	ug/L	2.00	46.4	50.0(50.0)	92.9	75 - 125

Lab ID = 810321-001



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

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Matrix Spike Duplicate

Lab ID = 810321-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	52.3	53.5(50.0)	97.6	75 - 125
Barium	ug/L	2.00	58.1	61.3(50.0)	93.6	75 - 125
Beryllium	ug/L	2.00	41.9	50.0(50.0)	83.8	75 - 125
Cadmium	ug/L	2.00	43.1	50.0(50.0)	86.2	75 - 125
Cobalt	ug/L	2.00	44.1	50.0(50.0)	88.2	75 - 125
Chromium	ug/L	2.00	46.6	50.0(50.0)	93.2	75 - 125
Mercury	ug/L	2.00	4.37	5.00(5.00)	87.4	75 - 125
Antimony	ug/L	2.00	49.1	50.0(50.0)	98.2	75 - 125
Copper	ug/L	2.00	44.0	50.0(50.0)	88.0	75 - 125
Lead	ug/L	2.00	45.0	50.0(50.0)	90.0	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.3	20.0	96.7	90 - 110
Barium	ug/L	1.00	19.4	20.0	96.9	90 - 110
Beryllium	ug/L	1.00	19.2	20.0	96.0	90 - 110
Cadmium	ug/L	1.00	19.4	20.0	97.0	90 - 110
Cobalt	ug/L	1.00	19.1	20.0	95.6	90 - 110
Chromium	ug/L	1.00	18.8	20.0	94.0	90 - 110
Mercury	ug/L	1.00	1.98	2.00	98.8	90 - 110
Antimony	ug/L	1.00	20.4	20.0	102	90 - 110
Copper	ug/L	1.00	19.2	20.0	96.2	90 - 110
Lead	ug/L	1.00	20.2	20.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.2	20.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.7	20.0	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	19.8	20.0	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	19.8	20.0	99.0	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Metals by EPA 200.8, Dissolved			Batch 101013A			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810321-002 Barium	ug/L	10/10/2013 14:21	2.00	0.594	5.0	63.9
810321-004 Barium	ug/L	10/10/2013 14:51	2.00	0.594	5.0	44.2
Method Blank						
Parameter	Unit	DF	Result			
Barium	ug/L	1.00	ND			
Duplicate					Lab ID = 810321-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	2.00	12.2	11.3	7.52	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	0.943	1.00	94.3	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	49.4	50.0	98.7	85 - 115
Matrix Spike					Lab ID = 810321-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	2.00	57.6	61.3(50.0)	92.5	75 - 125
Matrix Spike Duplicate					Lab ID = 810321-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	2.00	56.9	61.3(50.0)	91.1	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	20.4	20.0	102	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	19.5	20.0	97.4	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	18.8	20.0	93.9	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	19.2	20.0	96.1	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 27 of 45****Project Number: 423575.MP.02.CM****Printed 11/8/2013****MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	19.2	20.0	96.0	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	ND	0		

Serial Dilution**Lab ID = 810321-002**

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	10.0	65.4	63.9	2.33	0 - 10

**Total Dissolved Solids by SM 2540 C****Calculations**Batch: 10TDS13F
Date Analyzed: 10/9/13

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	79.5068	79.5065	79.5065	0.0000	No	-0.0003	-3.0	25.0	ND	1
810317-2	50	47.9464	48.0942	48.0941	0.0001	No	0.1477	2954.0	50.0	2954.0	1
810317-3	50	50.8424	50.9551	50.9551	0.0000	No	0.1127	2254.0	50.0	2254.0	1
810353-2	20	106.0545	106.1296	106.1297	-0.0001	No	0.0752	3760.0	125.0	3760.0	1
810353-3	100	110.2613	110.3022	110.3024	-0.0002	No	0.0411	411.0	25.0	411.0	1
810353-4	50	49.646	49.7404	49.74	0.0004	No	0.0940	1880.0	50.0	1880.0	1
810353-5	50	49.724	49.8747	49.8747	0.0000	No	0.1507	3014.0	50.0	3014.0	1
810353-6	50	50.9446	51.096	51.0963	-0.0003	No	0.1517	3034.0	50.0	3034.0	1
810353-7	50	51.8281	51.9432	51.943	0.0002	No	0.1149	2298.0	50.0	2298.0	1
810353-8	50	49.3899	49.4558	49.4560	-0.0002	No	0.0661	1322.0	50.0	1322.0	1
810353-9	50	47.9421	48.0084	48.0084	0.0000	No	0.0663	1326.0	50.0	1326.0	1
810353-9 DUP	50	78.9148	78.9797	78.9797	0.0000	No	0.0649	1298.0	50.0	1298.0	1
810353-10	50	51.9168	52.0016	52.0016	0.0000	No	0.0848	1696.0	50.0	1696.0	1
810353-11	50	50.7841	50.927	50.9271	-0.0001	No	0.1430	2860.0	50.0	2860.0	1
810353-12	50	51.8310	51.9375	51.9377	-0.0002	No	0.1067	2134.0	50.0	2134.0	1
810321-2	20	50.4985	50.5822	50.5824	-0.0002	No	0.0839	4195.0	125.0	4195.0	1
810321-3	20	49.1500	49.2353	49.2351	0.0002	No	0.0851	4255.0	125.0	4255.0	1
810321-4	10	77.9117	77.9594	77.9591	0.0003	No	0.0474	4740.0	250.0	4740.0	1
810321-5	20	80.5833	80.669	80.6686	0.0004	No	0.0853	4265.0	125.0	4265.0	1
810321-1	20	79.0669	79.1492	79.1496	-0.0004	No	0.0827	4135.0	125.0	4135.0	1
810353-1	100	104.2328	104.2669	104.2668	0.0001	No	0.0340	340.0	25.0	340.0	1
810353-1 DUP	100	78.7968	78.8331	78.833	0.0001	No	0.0362	362.0	25.0	362.0	1
LCS	100	79.4522	79.5011	79.5011	0.0000	No	0.0489	489.0	25.0	489.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

$$\left(\frac{A - B}{C} \right) \times 10^6$$

Where:

A = weight of dish + residue in grams.
B = weight of dish in grams.
C = mL of sample filtered.

RL = reporting limit.
ND = not detected (below the reporting limit)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	489	500	97.8%	90-110%	Yes
LCS2					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
809689	0.0439	0.0432	0.8%	5%	Yes
810353-1	0.0362	0.034	3.1%	5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{A - B}{C} \times 100$$

$$\text{where } C = \frac{A + B}{2}$$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Himane Veishnav

Analyst Printed Name

Analyst Signature

Maksim G.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS13F
Date Analyzed: 10/9/13

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
810317-2	3520	0.84	2288	1.29
810317-3	2680	0.84	1742	1.29
810353-2	4480	0.84	2912	1.29
810353-3	640	0.64	416	0.99
810353-4	2320	0.81	1508	1.25
810353-5	3590	0.84	2333.5	1.29
810353-6	3640	0.83	2366	1.28
810353-7	2780	0.83	1807	1.27
810353-8	1680	0.79	1092	1.21
810353-9	1710	0.78	1111.5	1.19
810353-9 DUP	1710	0.76	1111.5	1.17
810353-10	2130	0.80	1384.5	1.22
810353-11	3410	0.84	2216.5	1.29
810353-12	2620	0.81	1703	1.25
810321-2	6590	0.64	4283.5	0.98
810321-3	6600	0.64	4290	0.99
810321-4	7840	0.60	5096	0.93
810321-5	6710	0.64	4361.5	0.98
810321-1	6680	0.62	4342	0.95
810353-1	456	0.75	296.4	1.15
810353-1 DUP	456	0.79	296.4	1.22
LCS				

Signature

ML



Alkalinity by SM 2320B

Calculations

Analytical Batch: 10ALK13C
 Matrix: WATER
 Date of Analysis: 10/17/13

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO ₃	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO ₃	RL, ppm	Total Alkalinity Reported Value	HCO ₃ Conc. as CaCO ₃ (ppm)	CO ₃ Alkalinity as CaCO ₃ (ppm)	OH Alkalinity as CaCO ₃ (ppm)	Low Alkalinity as CaCO ₃ (<20ppm)
BLANK	7.01	50	0.02		0.0	0.00		0.0	5	ND	ND	ND	ND	
810280-1	8.03	50	0.02		0.0	5.25		105.0	5	105.0	105.0	ND	ND	
810371-17	8.05	50	0.02		0.0	3.55		71.0	5	71.0	71.0	ND	ND	
810371-21	8.17	50	0.02		0.0	5.25		105.0	5	105.0	105.0	ND	ND	
810321-1	7.96	50	0.02		0.0	2.75		55.0	5	55.0	55.0	ND	ND	
810321-2	7.82	50	0.02		0.0	2.70		54.0	5	54.0	54.0	ND	ND	
810321-3	8.01	50	0.02		0.0	2.90		58.0	5	58.0	58.0	ND	ND	
810321-4	7.75	50	0.02		0.0	2.40		48.0	5	48.0	48.0	ND	ND	
810321-5	7.87	50	0.02		0.0	2.50		50.0	5	50.0	50.0	ND	ND	
810355-7	7.61	50	0.02		0.0	6.90		138.0	5	138.0	138.0	ND	ND	
810355-8	7.75	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
810321-5-DUP	7.88	50	0.02		0.0	2.50		50.0	5	50.0	50.0	ND	ND	
LCS	10.30	50	0.02	2.2	43.0	4.90		98.0	5	98.0	12.0	86	ND	
LCSD	10.25	50	0.02	2.2	44.0	4.90		98.0	5	98.0	10.0	88	ND	
810356-11	7.74	50	0.02		0.0	6.25		125.0	5	125.0	125.0	ND	ND	
810356-12	7.71	50	0.02		0.0	6.80		136.0	5	136.0	136.0	ND	ND	
810442-1	7.87	50	0.02		0.0	9.50		190.0	5	190.0	190.0	ND	ND	
810442-2	6.82	50	0.02		0.0	12.60		252.0	5	252.0	252.0	ND	ND	
810442-3	7.94	50	0.02		0.0	9.25		185.0	5	185.0	185.0	ND	ND	
810473-1	6.96	50	0.02		0.0	19.30		386.0	5	386.0	386.0	ND	ND	
810473-3	6.83	50	0.02		0.0	17.51		350.2	5	350.2	350.2	ND	ND	
810473-4	6.96	50	0.02		0.0	12.75		255.0	5	255.0	255.0	ND	ND	
810371-21MS	9.53	50	0.02	2.3	45.0	10.60		212.0	5	212.0	122.0	90	ND	
810371-21MSD	9.54	50	0.02	2.2	44.0	10.55		211.0	5	211.0	123.0	88	ND	

Calculations as follows:

T or P =

$$\frac{A \times N \times 50000}{\text{mL sample}}$$

Where:

T = Total Alkalinity, mg CaCO₃/LP = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

$$\text{Low Alkalinity: as mg/L CaCO}_3 = \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$$

Where:

B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Acceptance Limit	QC Within Control?
LCS	98	100	98.0%	90-110	Yes
LCSD	98	100	98.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Acceptance Limit	QC Within Control?
810321-5	50	50	0.0%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
810372-21	105	1	100	100	212	205.00	107%	75-125	Yes	0.2%	≤20%	Yes
	105	1	100	100	211	205.00	106%		Yes			

KIM

Analyst Printed Name
1004136.XLS

Analyst Signature

Maksim Gorbunov

Reviewer Printed Name

Reviewer Signature

810321

CH2MHILL

CHAIN OF CUSTODY RECORD

10/8/2013 3:35:35 PM

Page 1 OF 1

Project Name PG&E Topock				Container:	250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	<div style="text-align: center;"> Rec'd 10/08/13 810321 -524- </div>	Number of Containers	COMMENTS	
Location Topock				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C				
Project Manager Jay Piper				Filtered:	Field	NA	Field	NA	NA	NA	NA	NA				
Sample Manager Shawn Duffy				Holding Time:	28	180	180	2	2	2	2	2				28
Project Number 423575.MP.02.CM Task Order Project 2013-CMP-030 Turnaround Time 10 Days Shipping Date: 10/8/2013 COC Number: 1					Cr6 (E218.6) Field Filtered	Metals (6010B) Total Fe	Metals (E200series) Field Filtered AlSbAsBaBeBCaCdCoCrCuFePb	Specific Conductance (E120.1)	Anions (E300.0) Cl, F, SO4	Turbidity (SM2130)	TDS (SM2540C)	Alkalinity (SM2320B)				Ammonia (SM4500NH3)
DATE	TIME	MATRIX														
1	CW-02D-030	10/8/2013	11:59	Water	X	X	X	X	X	X	X	X	X	5		
2	CW-02M-030	10/8/2013	13:24	Water	X	X	X	X	X	X	X	X	X	5		
3	CW-03D-030	10/8/2013	9:12	Water	X	X	X	X	X	X	X	X	X	5	PH=2	
4	CW-03M-030	10/8/2013	10:12	Water	X	X	X	X	X	X	X	X	X	5	Metals	
5	CW-04D-030	10/8/2013	15:02	Water	X	X	X	X	X	X	X	X	X	5		
6	OW-80-030	10/8/2013	15:23	Water	X									1		
TOTAL NUMBER OF CONTAINERS														26		

ALERT !!
Level III QC

Approved by	Signatures	Date/Time	Shipping Details
Sampled by	<i>[Signature]</i>	10-8-13	Method of Shipment: courier
Relinquished by	<i>[Signature]</i>	1540	On Ice: <input checked="" type="radio"/> yes / no
Received by	<i>[Signature]</i>	10-8-13	Airbill No:
Relinquished by	<i>[Signature]</i>	1540	Lab Name: Truesdail Laboratories, Inc.
Received by	<i>[Signature]</i>	10/8/13 2000	Lab Phone: (714) 730-6239
	<i>[Signature]</i>	10/8/13 2000	

ATTN:

Special Instructions:

Oct 7-9, 2013

Sample Custody

Report Copy to

Shawn Duffy
(530) 229-3303

Subject: RE: CMP COC Question
From: <Shawn.Duffy@CH2M.com>
Date: Mon, 4 Nov 2013 20:21:50 +0000
To: <seanc@truesdail.com>

Hi Sean,

The metals list should be:
Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl,
V, Zn, K, Na

Shawn

-----Original Message-----
From: Sean Condon [mailto:seanc@truesdail.com]
Sent: Sunday, November 03, 2013 12:15 PM
To: Duffy, Shawn/RDD
Subject: CMP COC Question

Hi Shawn,

It looks like there might be some metals missing from the metals lists on the two
CMP COCs (see attached).

Thank you,

Sean Condon
Project Manager
Truesdail Laboratories, Inc.
Phone: (714) 730-6239
Fax: (714) 730-6462

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/9/13	810317-4	7.0	2mL/100mL	9.5	8:40	TN
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
10/9/13	810318-1	9.5	N/A	N/A	N/A	TN
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
10/9/13	810320-1	9.5	N/A	N/A	N/A	TN
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
10/9/13	810321-1	9.5	N/A	N/A	N/A	TN
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
10/10/13	810350-1	9.5	N/A	N/A	N/A	NE
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
10/10/13	810351-1	7.0	2mL/100mL	9.5	8:30	NE
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓

Handwritten signature
10/16/13

144

152/13



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
810237-1-7	<1	<2	10/3/13	DC	NO	15:10		
810231-4	↓	↓	↓	↓	yes			
810232	↓	↓	↓	↓	↓			
810236-112	>1	↓	↓	↓	↓			
810239	<1	↓	↓	↓	↓			
810229	↓	↓	↓	↓	↓			
810252	>1	<2	10/4/13	DC	yes			
810206(1,3)	<1	<2	10/4/13	ES	yes			
206-2	<1	72	↓	↓	↓	10:00		pH <2
810227	<1	<2	↓	↓	↓			
810251(1-3)	↓	↓	↓	↓	↓			
810184	TTLC	↓	↓	↓	↓			solid
810185(1-2)	↓	↓	↓	↓	↓			↓ sludge
810205	↓	↓	↓	↓	↓			
810260-4	>1	<2	10/4/13	DC	yes			
810271-4	<1	<2	10/4/13	DC	yes			
810248	↓	↓	↓	↓	↓			
810255-3,4	↓	↓	↓	↓	↓			-4 <2 pH
810242-10-12	<1	72	↓	↓	NO	15:10		-3 digest as 206-2
810262-1-5	TTLC	↓	10/7/13	DC	yes			
810275-4	>1	<2	↓	↓	↓			
810279	<1	↓	↓	↓	↓			
810276-4	>1	↓	↓	↓	↓			
810280-4,5,6	<1	72	10/7/13	DC	NO	1:00		
810296	<1	<2	10/8/13	ES	yes			
810301-4	↓	↓	↓	↓	↓			
810310	↓	↓	↓	↓	↓			
810305	↓	↓	↓	↓	↓			
810306	↓	↓	↓	↓	↓			
810307	↓	↓	↓	↓	↓			
810308	↓	↓	↓	↓	↓			
810309	↓	↓	↓	↓	↓			
810245	↓	72	↓	↓	NO	5:30		
810304(1-4)	↓	↓	↓	↓	↓	↓		
810288(1-2)	>1	<2	10/8/13	ES	yes			
810317(1,4-7)	<1	72	10/9/13	ES	yes	10:00		Filtered then acidified
810318(1-6)	<1	<2	↓	↓	↓			
810319-1	<1	72	↓	↓	↓	10:00		
810320(1-5)	<1	<2	↓	↓	↓			
810321(1-5)	<1	<2	↓	↓	↓			T/D
810350(1-4)	<1	<2	10/10/13	ES	yes			
810352(1-2,4,12)	↓	↓	↓	↓	↓			
810353(1-15)	↓	↓	↓	↓	↓			

Notes:

1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.
2. All Total Recoverable Analytes must be pH adjusted and digested.
3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 110321

Date Delivered: 10/18 / 13 Time: 20:10 By: ☐ Mail ☐ Field Service ☒ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☒ No ☐ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☒ No ☐ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.5 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc..)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☒ Truesdail ☐ Client ☒ QC
12. Were samples pH checked? pH = see C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☐ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 8, 2013

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2013-CMP-030, GROUNDWATER MONITORING
PROJECT, TLI NO.: 810386

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2013-CMP-030 groundwater-monitoring project. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data, and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody October 11, 2013, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


On November 5, 2013, Mr. Duffy provided an updated metals list via email.


Total Thallium by EPA 200.8 in batch 110613C was detected in the method blank just above the reporting limit. Because the sample results were all below the reporting limit and all other QA/QC were within acceptable limits, the data was accepted.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Sixteen (16) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 423575.MP.02.CM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Laboratory No.: 810386

Date: November 8, 2013

Collected: October 9 - 10, 2013

Received: October 11, 2013

Revision 1; December 9, 2013

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Kim Luck
SM 2130B	Turbidity	Kim Luck
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Kim Luck / Maria Mangarova
EPA 200.7	Metals by ICP	Denise Chauv
SW 6010B	Metals by ICP	Denise Chauv
EPA 200.8	Metals by ICP/MS	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

TRUESDAIL LABORATORIES, INC.

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(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Laboratory No.: 810386
Date Received: October 11, 2013

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.CM
P.O. No.: 423575.MP.02.CM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-001	CW-04M-030	E120.1	NONE	10/9/2013	8:10	EC	6360	umhos/cm	2.00
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Aluminum	ND	ug/L	20.0
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	BORON	857	ug/L	200
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Calcium	177000	ug/L	10000
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Iron	ND	ug/L	20.0
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Magnesium	14500	ug/L	1000
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Potassium	15600	ug/L	500
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Sodium	1300000	ug/L	100000
810386-001	CW-04M-030	E200.7	FLDFLT	10/9/2013	8:10	Zinc	ND	ug/L	20.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Antimony	ND	ug/L	2.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Arsenic	2.2	ug/L	0.50
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Barium	87.1	ug/L	5.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Beryllium	ND	ug/L	0.50
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Cadmium	ND	ug/L	1.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Chromium	5.6	ug/L	1.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Cobalt	ND	ug/L	5.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Copper	ND	ug/L	5.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Lead	ND	ug/L	1.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Manganese	ND	ug/L	0.50
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Mercury	ND	ug/L	0.40
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Molybdenum	10.1	ug/L	2.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Nickel	ND	ug/L	2.0

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This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Selenium	ND	ug/L	5.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Silver	ND	ug/L	5.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Thallium	ND	ug/L	1.0
810386-001	CW-04M-030	E200.8	FLDFLT	10/9/2013	8:10	Vanadium	ND	ug/L	5.0
810386-001	CW-04M-030	E218.6	FLDFLT	10/9/2013	8:10	Chromium, Hexavalent	5.4	ug/L	1.0
810386-001	CW-04M-030	E300	NONE	10/9/2013	8:10	Chloride	2060	mg/L	50.0
810386-001	CW-04M-030	E300	NONE	10/9/2013	8:10	Fluoride	1.84	mg/L	0.500
810386-001	CW-04M-030	E300	NONE	10/9/2013	8:10	Sulfate	454	mg/L	25.0
810386-001	CW-04M-030	SM2130B	NONE	10/9/2013	8:10	Turbidity	ND	NTU	0.100
810386-001	CW-04M-030	SM2320B	NONE	10/9/2013	8:10	Alkalinity	54.0	mg/L	5.00
810386-001	CW-04M-030	SM2320B	NONE	10/9/2013	8:10	Alkalinity, Bicarbonate (As CaCO3)	54.0	mg/L	5.00
810386-001	CW-04M-030	SM2320B	NONE	10/9/2013	8:10	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
810386-001	CW-04M-030	SM2540C	NONE	10/9/2013	8:10	Total Dissolved Solids	4100	mg/L	125
810386-001	CW-04M-030	SM4500NH3D	NONE	10/9/2013	8:10	Ammonia-N	ND	mg/L	0.500
810386-001	CW-04M-030	SW6010B	NONE	10/9/2013	8:10	Iron	ND	ug/L	20.0
810386-002	OW-01D-030	E120.1	NONE	10/9/2013	10:14	EC	6470	umhos/cm	2.00
810386-002	OW-01D-030	E200.7	FLDFLT	10/9/2013	10:14	Sodium	1440000	ug/L	100000
810386-002	OW-01D-030	E200.8	FLDFLT	10/9/2013	10:14	Chromium	ND	ug/L	1.0
810386-002	OW-01D-030	E200.8	FLDFLT	10/9/2013	10:14	Molybdenum	20.7	ug/L	2.0
810386-002	OW-01D-030	E218.6	FLDFLT	10/9/2013	10:14	Chromium, Hexavalent	ND	ug/L	1.0
810386-002	OW-01D-030	E300	NONE	10/9/2013	10:14	Chloride	2130	mg/L	50.0
810386-002	OW-01D-030	E300	NONE	10/9/2013	10:14	Fluoride	2.35	mg/L	0.500
810386-002	OW-01D-030	E300	NONE	10/9/2013	10:14	Sulfate	493	mg/L	25.0
810386-002	OW-01D-030	SM2130B	NONE	10/9/2013	10:14	Turbidity	0.415	NTU	0.100
810386-002	OW-01D-030	SM2540C	NONE	10/9/2013	10:14	Total Dissolved Solids	4270	mg/L	125
810386-003	OW-01M-030	E120.1	NONE	10/9/2013	10:42	EC	6530	umhos/cm	2.00
810386-003	OW-01M-030	E200.7	FLDFLT	10/9/2013	10:42	Sodium	1480000	ug/L	100000
810386-003	OW-01M-030	E200.8	FLDFLT	10/9/2013	10:42	Chromium	1.5	ug/L	1.0
810386-003	OW-01M-030	E200.8	FLDFLT	10/9/2013	10:42	Molybdenum	11.1	ug/L	2.0
810386-003	OW-01M-030	E218.6	FLDFLT	10/9/2013	10:42	Chromium, Hexavalent	1.2	ug/L	1.0
810386-003	OW-01M-030	E300	NONE	10/9/2013	10:42	Chloride	2410	mg/L	50.0
810386-003	OW-01M-030	E300	NONE	10/9/2013	10:42	Fluoride	1.66	mg/L	0.500
810386-003	OW-01M-030	E300	NONE	10/9/2013	10:42	Sulfate	489	mg/L	25.0
810386-003	OW-01M-030	SM2130B	NONE	10/9/2013	10:42	Turbidity	ND	NTU	0.100
810386-003	OW-01M-030	SM2540C	NONE	10/9/2013	10:42	Total Dissolved Solids	4320	mg/L	125



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-004	OW-01S-030	E120.1	NONE	10/9/2013	11:35	EC	5190	umhos/cm	2.00
810386-004	OW-01S-030	E200.7	FLDFLT	10/9/2013	11:35	Sodium	801000	ug/L	100000
810386-004	OW-01S-030	E200.8	FLDFLT	10/9/2013	11:35	Chromium	8.4	ug/L	1.0
810386-004	OW-01S-030	E200.8	FLDFLT	10/9/2013	11:35	Molybdenum	5.9	ug/L	2.0
810386-004	OW-01S-030	E218.6	FLDFLT	10/9/2013	11:35	Chromium, Hexavalent	7.4	ug/L	1.0
810386-004	OW-01S-030	E300	NONE	10/9/2013	11:35	Chloride	1730	mg/L	50.0
810386-004	OW-01S-030	E300	NONE	10/9/2013	11:35	Fluoride	1.67	mg/L	0.500
810386-004	OW-01S-030	E300	NONE	10/9/2013	11:35	Sulfate	372	mg/L	25.0
810386-004	OW-01S-030	SM2130B	NONE	10/9/2013	11:35	Turbidity	0.212	NTU	0.100
810386-004	OW-01S-030	SM2540C	NONE	10/9/2013	11:35	Total Dissolved Solids	3870	mg/L	125
810386-005	OW-05D-030	E120.1	NONE	10/9/2013	13:56	EC	6710	umhos/cm	2.00
810386-005	OW-05D-030	E200.7	FLDFLT	10/9/2013	13:56	Sodium	1800000	ug/L	100000
810386-005	OW-05D-030	E200.8	FLDFLT	10/9/2013	13:56	Chromium	ND	ug/L	1.0
810386-005	OW-05D-030	E200.8	FLDFLT	10/9/2013	13:56	Molybdenum	18.2	ug/L	2.0
810386-005	OW-05D-030	E218.6	FLDFLT	10/9/2013	13:56	Chromium, Hexavalent	ND	ug/L	1.0
810386-005	OW-05D-030	E300	NONE	10/9/2013	13:56	Chloride	2190	mg/L	50.0
810386-005	OW-05D-030	E300	NONE	10/9/2013	13:56	Fluoride	2.06	mg/L	0.500
810386-005	OW-05D-030	E300	NONE	10/9/2013	13:56	Sulfate	512	mg/L	25.0
810386-005	OW-05D-030	SM2130B	NONE	10/9/2013	13:56	Turbidity	0.138	NTU	0.100
810386-005	OW-05D-030	SM2540C	NONE	10/9/2013	13:56	Total Dissolved Solids	4240	mg/L	125
810386-006	OW-05M-030	E120.1	NONE	10/9/2013	14:44	EC	6650	umhos/cm	2.00
810386-006	OW-05M-030	E200.7	FLDFLT	10/9/2013	14:44	Sodium	1620000	ug/L	100000
810386-006	OW-05M-030	E200.8	FLDFLT	10/9/2013	14:44	Chromium	ND	ug/L	1.0
810386-006	OW-05M-030	E200.8	FLDFLT	10/9/2013	14:44	Molybdenum	17.0	ug/L	2.0
810386-006	OW-05M-030	E218.6	FLDFLT	10/9/2013	14:44	Chromium, Hexavalent	ND	ug/L	1.0
810386-006	OW-05M-030	E300	NONE	10/9/2013	14:44	Chloride	2150	mg/L	50.0
810386-006	OW-05M-030	E300	NONE	10/9/2013	14:44	Fluoride	2.08	mg/L	0.500
810386-006	OW-05M-030	E300	NONE	10/9/2013	14:44	Sulfate	500	mg/L	25.0
810386-006	OW-05M-030	SM2130B	NONE	10/9/2013	14:44	Turbidity	ND	NTU	0.100
810386-006	OW-05M-030	SM2540C	NONE	10/9/2013	14:44	Total Dissolved Solids	4300	mg/L	125



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-007	OW-05S-030	E120.1	NONE	10/9/2013	15:12	EC	2880	umhos/cm	2.00
810386-007	OW-05S-030	E200.7	FLDFLT	10/9/2013	15:12	Sodium	486000	ug/L	100000
810386-007	OW-05S-030	E200.8	FLDFLT	10/9/2013	15:12	Chromium	17.1	ug/L	1.0
810386-007	OW-05S-030	E200.8	FLDFLT	10/9/2013	15:12	Molybdenum	15.5	ug/L	2.0
810386-007	OW-05S-030	E218.6	FLDFLT	10/9/2013	15:12	Chromium, Hexavalent	18.2	ug/L	0.20
810386-007	OW-05S-030	E300	NONE	10/9/2013	15:12	Chloride	865	mg/L	50.0
810386-007	OW-05S-030	E300	NONE	10/9/2013	15:12	Fluoride	1.80	mg/L	0.500
810386-007	OW-05S-030	E300	NONE	10/9/2013	15:12	Sulfate	163	mg/L	25.0
810386-007	OW-05S-030	SM2130B	NONE	10/9/2013	15:12	Turbidity	0.238	NTU	0.100
810386-007	OW-05S-030	SM2540C	NONE	10/9/2013	15:12	Total Dissolved Solids	1820	mg/L	50.0
810386-008	OW-70-030	E120.1	NONE	10/9/2013	10:00	EC	6260	umhos/cm	2.00
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Aluminum	ND	ug/L	20.0
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	BORON	854	ug/L	200
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Calcium	173000	ug/L	10000
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Iron	ND	ug/L	20.0
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Magnesium	14800	ug/L	1000
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Potassium	15900	ug/L	500
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Sodium	1320000	ug/L	100000
810386-008	OW-70-030	E200.7	FLDFLT	10/9/2013	10:00	Zinc	ND	ug/L	20.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Antimony	ND	ug/L	2.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Arsenic	2.2	ug/L	0.50
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Barium	90.4	ug/L	5.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Beryllium	ND	ug/L	0.50
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Cadmium	ND	ug/L	1.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Chromium	5.7	ug/L	1.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Cobalt	ND	ug/L	5.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Copper	ND	ug/L	5.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Lead	ND	ug/L	1.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Manganese	ND	ug/L	0.50
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Mercury	ND	ug/L	0.40
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Molybdenum	9.6	ug/L	2.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Nickel	ND	ug/L	2.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Selenium	ND	ug/L	5.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Silver	ND	ug/L	5.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Thallium	ND	ug/L	1.0
810386-008	OW-70-030	E200.8	FLDFLT	10/9/2013	10:00	Vanadium	ND	ug/L	5.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-008	OW-70-030	E218.6	FLDFLT	10/9/2013	10:00	Chromium, Hexavalent	5.4	ug/L	1.0
810386-008	OW-70-030	E300	NONE	10/9/2013	10:00	Chloride	2060	mg/L	50.0
810386-008	OW-70-030	E300	NONE	10/9/2013	10:00	Fluoride	1.77	mg/L	0.500
810386-008	OW-70-030	E300	NONE	10/9/2013	10:00	Sulfate	454	mg/L	25.0
810386-008	OW-70-030	SM2130B	NONE	10/9/2013	10:00	Turbidity	ND	NTU	0.100
810386-008	OW-70-030	SM2320B	NONE	10/9/2013	10:00	Alkalinity	50.0	mg/L	5.0
810386-008	OW-70-030	SM2320B	NONE	10/9/2013	10:00	Alkalinity, Bicarbonate (As CaCO3)	50.0	mg/L	5.00
810386-008	OW-70-030	SM2320B	NONE	10/9/2013	10:00	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
810386-008	OW-70-030	SM2540C	NONE	10/9/2013	10:00	Total Dissolved Solids	4120	mg/L	125
810386-008	OW-70-030	SM4500NH3D	NONE	10/9/2013	10:00	Ammonia-N	ND	mg/L	0.500
810386-008	OW-70-030	SW6010B	NONE	10/9/2013	10:00	Iron	77.5	ug/L	20.0
810386-009	CW-01D-030	E120.1	NONE	10/10/2013	8:25	EC	6460	umhos/cm	2.00
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Aluminum	ND	ug/L	20.0
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	BORON	900	ug/L	200
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Calcium	164000	ug/L	10000
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Iron	ND	ug/L	20.0
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Magnesium	16300	ug/L	10000
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Potassium	13900	ug/L	5000
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Sodium	1400000	ug/L	500000
810386-009	CW-01D-030	E200.7	FLDFLT	10/10/2013	8:25	Zinc	ND	ug/L	20.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Antimony	ND	ug/L	2.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Arsenic	1.3	ug/L	0.50
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Barium	21.6	ug/L	5.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Beryllium	ND	ug/L	0.50
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Cadmium	ND	ug/L	1.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Chromium	ND	ug/L	1.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Cobalt	ND	ug/L	5.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Copper	ND	ug/L	5.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Lead	ND	ug/L	1.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Manganese	ND	ug/L	0.50
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Mercury	ND	ug/L	0.40
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Molybdenum	19.9	ug/L	2.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Nickel	ND	ug/L	2.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Selenium	ND	ug/L	5.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Silver	ND	ug/L	5.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Thallium	ND	ug/L	1.0
810386-009	CW-01D-030	E200.8	FLDFLT	10/10/2013	8:25	Vanadium	ND	ug/L	5.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-009	CW-01D-030	E218.6	FLDFLT	10/10/2013	8:25	Chromium, Hexavalent	ND	ug/L	1.0
810386-009	CW-01D-030	E300	NONE	10/10/2013	8:25	Chloride	2110	mg/L	50.0
810386-009	CW-01D-030	E300	NONE	10/10/2013	8:25	Fluoride	2.34	mg/L	0.500
810386-009	CW-01D-030	E300	NONE	10/10/2013	8:25	Sulfate	494	mg/L	25.0
810386-009	CW-01D-030	SM2130B	NONE	10/10/2013	8:25	Turbidity	ND	NTU	0.100
810386-009	CW-01D-030	SM2320B	NONE	10/10/2013	8:25	Alkalinity	47.0	mg/L	5.00
810386-009	CW-01D-030	SM2320B	NONE	10/10/2013	8:25	Alkalinity, Bicarbonate (As CaCO3)	47.0	mg/L	5.00
810386-009	CW-01D-030	SM2320B	NONE	10/10/2013	8:25	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
810386-009	CW-01D-030	SM2540C	NONE	10/10/2013	8:25	Total Dissolved Solids	4130	mg/L	125
810386-009	CW-01D-030	SM4500NH3D	NONE	10/10/2013	8:25	Ammonia-N	ND	mg/L	0.500
810386-009	CW-01D-030	SW6010B	NONE	10/10/2013	8:25	Iron	ND	ug/L	20.0
810386-010	CW-01M-030	E120.1	NONE	10/10/2013	8:58	EC	6660	umhos/cm	2.00
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Aluminum	ND	ug/L	20.0
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	BORON	912	ug/L	200
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Calcium	175000	ug/L	10000
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Iron	ND	ug/L	20.0
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Magnesium	14600	ug/L	1000
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Potassium	15500	ug/L	500
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Sodium	1400000	ug/L	100000
810386-010	CW-01M-030	E200.7	FLDFLT	10/10/2013	8:58	Zinc	ND	ug/L	20.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Antimony	ND	ug/L	2.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Arsenic	1.6	ug/L	0.50
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Barium	84.0	ug/L	5.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Beryllium	ND	ug/L	0.50
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Cadmium	ND	ug/L	1.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Chromium	ND	ug/L	1.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Cobalt	ND	ug/L	5.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Copper	ND	ug/L	5.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Lead	ND	ug/L	1.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Manganese	ND	ug/L	0.50
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Mercury	ND	ug/L	0.40
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Molybdenum	17.2	ug/L	2.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Nickel	ND	ug/L	2.00
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Selenium	ND	ug/L	5.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Silver	ND	ug/L	5.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Thallium	ND	ug/L	1.0
810386-010	CW-01M-030	E200.8	FLDFLT	10/10/2013	8:58	Vanadium	ND	ug/L	5.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-010	CW-01M-030	E218.6	FLDFLT	10/10/2013	8:58	Chromium, Hexavalent	ND	ug/L	1.0
810386-010	CW-01M-030	E300	NONE	10/10/2013	8:58	Chloride	2130	mg/L	50.0
810386-010	CW-01M-030	E300	NONE	10/10/2013	8:58	Fluoride	1.92	mg/L	0.500
810386-010	CW-01M-030	E300	NONE	10/10/2013	8:58	Sulfate	503	mg/L	25.0
810386-010	CW-01M-030	SM2130B	NONE	10/10/2013	8:58	Turbidity	ND	NTU	0.100
810386-010	CW-01M-030	SM2320B	NONE	10/10/2013	8:58	Alkalinity	50.0	mg/L	5.00
810386-010	CW-01M-030	SM2320B	NONE	10/10/2013	8:58	Alkalinity, Bicarbonate (As CaCO ₃)	50.0	mg/L	5.00
810386-010	CW-01M-030	SM2320B	NONE	10/10/2013	8:58	Alkalinity, Carbonate (As CaCO ₃)	ND	mg/L	5.00
810386-010	CW-01M-030	SM2540C	NONE	10/10/2013	8:58	Total Dissolved Solids	4250	mg/L	125
810386-010	CW-01M-030	SM4500NH3D	NONE	10/10/2013	8:58	Ammonia-N	ND	mg/L	0.500
810386-010	CW-01M-030	SW6010B	NONE	10/10/2013	8:58	Iron	ND	ug/L	20.0
810386-011	OW-02D-030	E120.1	NONE	10/10/2013	10:36	EC	6570	umhos/cm	2.00
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Aluminum	ND	ug/L	20.0
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	BORON	917	ug/L	200
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Calcium	119000	ug/L	10000
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Iron	ND	ug/L	20.0
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Magnesium	28200	ug/L	2000
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Potassium	17500	ug/L	500
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Sodium	1420000	ug/L	100000
810386-011	OW-02D-030	E200.7	FLDFLT	10/10/2013	10:36	Zinc	ND	ug/L	20.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Antimony	ND	ug/L	2.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Arsenic	3.5	ug/L	0.50
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Barium	15.8	ug/L	5.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Beryllium	ND	ug/L	0.50
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Cadmium	ND	ug/L	1.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Chromium	ND	ug/L	1.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Cobalt	ND	ug/L	5.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Copper	ND	ug/L	5.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Lead	ND	ug/L	1.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Manganese	ND	ug/L	0.50
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Mercury	ND	ug/L	0.40
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Molybdenum	18.7	ug/L	2.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Nickel	ND	ug/L	2.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Selenium	ND	ug/L	5.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Silver	ND	ug/L	5.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Thallium	ND	ug/L	1.0
810386-011	OW-02D-030	E200.8	FLDFLT	10/10/2013	10:36	Vanadium	ND	ug/L	5.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-011	OW-02D-030	E218.6	FLDFLT	10/10/2013	10:36	Chromium, Hexavalent	ND	ug/L	1.0
810386-011	OW-02D-030	E300	NONE	10/10/2013	10:36	Chloride	2120	mg/L	50.0
810386-011	OW-02D-030	E300	NONE	10/10/2013	10:36	Fluoride	1.96	mg/L	0.500
810386-011	OW-02D-030	E300	NONE	10/10/2013	10:36	Sulfate	494	mg/L	25.0
810386-011	OW-02D-030	SM2130B	NONE	10/10/2013	10:36	Turbidity	ND	NTU	0.100
810386-011	OW-02D-030	SM2320B	NONE	10/10/2013	10:36	Alkalinity	30.0	mg/L	5.00
810386-011	OW-02D-030	SM2320B	NONE	10/10/2013	10:36	Alkalinity, Bicarbonate (As CaCO3)	30.0	mg/L	5.00
810386-011	OW-02D-030	SM2320B	NONE	10/10/2013	10:36	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
810386-011	OW-02D-030	SM2540C	NONE	10/10/2013	10:36	Total Dissolved Solids	4240	mg/L	125
810386-011	OW-02D-030	SM4500NH3D	NONE	10/10/2013	10:36	Ammonia-N	ND	mg/L	0.500
810386-011	OW-02D-030	SW6010B	NONE	10/10/2013	10:36	Iron	ND	ug/L	20.0
810386-012	OW-02M-030	E120.1	NONE	10/10/2013	11:13	EC	6450	umhos/cm	2.00
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Aluminum	ND	ug/L	20.0
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	BORON	992	ug/L	200
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Calcium	134000	ug/L	10000
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Iron	ND	ug/L	20.0
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Magnesium	22800	ug/L	2000
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Potassium	16600	ug/L	500
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Sodium	1360000	ug/L	100000
810386-012	OW-02M-030	E200.7	FLDFLT	10/10/2013	11:13	Zinc	ND	ug/L	20.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Antimony	ND	ug/L	2.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Arsenic	1.6	ug/L	0.50
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Barium	41.0	ug/L	5.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Beryllium	ND	ug/L	0.50
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Cadmium	ND	ug/L	1.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Chromium	1.6	ug/L	1.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Cobalt	ND	ug/L	5.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Copper	ND	ug/L	5.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Lead	ND	ug/L	1.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Manganese	ND	ug/L	0.50
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Mercury	ND	ug/L	0.40
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Molybdenum	16.3	ug/L	2.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Nickel	ND	ug/L	2.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Selenium	ND	ug/L	5.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Silver	ND	ug/L	5.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Thallium	ND	ug/L	1.0
810386-012	OW-02M-030	E200.8	FLDFLT	10/10/2013	11:13	Vanadium	ND	ug/L	5.0

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810386-012	OW-02M-030	E218.6	FLDFLT	10/10/2013	11:13	Chromium, Hexavalent	1.6	ug/L	1.0
810386-012	OW-02M-030	E300	NONE	10/10/2013	11:13	Chloride	2090	mg/L	50.0
810386-012	OW-02M-030	E300	NONE	10/10/2013	11:13	Fluoride	2.04	mg/L	0.500
810386-012	OW-02M-030	E300	NONE	10/10/2013	11:13	Sulfate	490	mg/L	25.0
810386-012	OW-02M-030	SM2130B	NONE	10/10/2013	11:13	Turbidity	ND	NTU	0.100
810386-012	OW-02M-030	SM2320B	NONE	10/10/2013	11:13	Alkalinity	76.0	mg/L	5.00
810386-012	OW-02M-030	SM2320B	NONE	10/10/2013	11:13	Alkalinity, Bicarbonate (As CaCO3)	76.0	mg/L	5.00
810386-012	OW-02M-030	SM2320B	NONE	10/10/2013	11:13	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
810386-012	OW-02M-030	SM2540C	NONE	10/10/2013	11:13	Total Dissolved Solids	4160	mg/L	125
810386-012	OW-02M-030	SM4500NH3D	NONE	10/10/2013	11:13	Ammonia-N	ND	mg/L	0.500
810386-012	OW-02M-030	SW6010B	NONE	10/10/2013	11:13	Iron	ND	ug/L	20.0
810386-013	OW-02S-030	E120.1	NONE	10/10/2013	12:04	EC	1760	umhos/cm	2.00
810386-013	OW-02S-030	E200.7	FLDFLT	10/10/2013	12:04	Sodium	391000	ug/L	100000
810386-013	OW-02S-030	E200.8	FLDFLT	10/10/2013	12:04	Chromium	22.0	ug/L	1.0
810386-013	OW-02S-030	E200.8	FLDFLT	10/10/2013	12:04	Molybdenum	34.7	ug/L	2.0
810386-013	OW-02S-030	E218.6	FLDFLT	10/10/2013	12:04	Chromium, Hexavalent	22.9	ug/L	0.20
810386-013	OW-02S-030	E300	NONE	10/10/2013	12:04	Chloride	468	mg/L	10.0
810386-013	OW-02S-030	E300	NONE	10/10/2013	12:04	Fluoride	4.74	mg/L	0.500
810386-013	OW-02S-030	E300	NONE	10/10/2013	12:04	Sulfate	99.8	mg/L	25.0
810386-013	OW-02S-030	SM2130B	NONE	10/10/2013	12:04	Turbidity	2.10	NTU	0.100
810386-013	OW-02S-030	SM2540C	NONE	10/10/2013	12:04	Total Dissolved Solids	1040	mg/L	50.0
810386-014	OW-71-030	E120.1	NONE	10/10/2013	7:00	EC	1740	umhos/cm	2.00
810386-014	OW-71-030	E200.7	FLDFLT	10/10/2013	7:00	Sodium	375000	ug/L	100000
810386-014	OW-71-030	E200.8	FLDFLT	10/10/2013	7:00	Chromium	21.7	ug/L	1.0
810386-014	OW-71-030	E200.8	FLDFLT	10/10/2013	7:00	Molybdenum	34.6	ug/L	2.0
810386-014	OW-71-030	E218.6	FLDFLT	10/10/2013	7:00	Chromium, Hexavalent	22.8	ug/L	0.20
810386-014	OW-71-030	E300	NONE	10/10/2013	7:00	Chloride	469	mg/L	10.0
810386-014	OW-71-030	E300	NONE	10/10/2013	7:00	Fluoride	4.77	mg/L	0.500
810386-014	OW-71-030	E300	NONE	10/10/2013	7:00	Sulfate	93.7	mg/L	50.0
810386-014	OW-71-030	SM2130B	NONE	10/10/2013	7:00	Turbidity	2.25	NTU	0.100
810386-014	OW-71-030	SM2540C	NONE	10/10/2013	7:00	Total Dissolved Solids	1030	mg/L	50.0



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
810386-015	OW-81-030	E218.6	FLDFLT	10/10/2013	7:23	Chromium, Hexavalent	ND	ug/L	0.20
810386-016	OW-82-030	E218.6	FLDFLT	10/10/2013	12:40	Chromium, Hexavalent	ND	ug/L	0.20

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 423575.MP.02.CM

P.O. Number: 423575.MP.02.CM

Release Number:

Laboratory No. 810386

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Printed 11/8/2013

Samples Received on 10/11/2013

Field ID	Lab ID	Collected	Matrix
CW-04M-030	810386-001	10/09/2013 08:10	Water
OW-01D-030	810386-002	10/09/2013 10:14	Water
OW-01M-030	810386-003	10/09/2013 10:42	Water
OW-01S-030	810386-004	10/09/2013 11:35	Water
OW-05D-030	810386-005	10/09/2013 13:56	Water
OW-05M-030	810386-006	10/09/2013 14:44	Water
OW-05S-030	810386-007	10/09/2013 15:12	Water
OW-70-030	810386-008	10/09/2013 10:00	Water
CW-01D-030	810386-009	10/10/2013 08:25	Water
CW-01M-030	810386-010	10/10/2013 08:58	Water
OW-02D-030	810386-011	10/10/2013 10:36	Water
OW-02M-030	810386-012	10/10/2013 11:13	Water
OW-02S-030	810386-013	10/10/2013 12:04	Water
OW-71-030	810386-014	10/10/2013 07:00	Water
OW-81-030	810386-015	10/10/2013 07:23	Water
OW-82-030	810386-016	10/10/2013 12:40	Water

Anions By I.C. - EPA 300.0

Batch 10AN130

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Chloride	mg/L	10/15/2013 18:04	500	17.4	50.0	2060
Sulfate	mg/L	10/15/2013 22:04	50.0	1.54	25.0	454
810386-002 Chloride	mg/L	10/15/2013 18:16	500	17.4	50.0	2130
Sulfate	mg/L	10/15/2013 22:15	50.0	1.54	25.0	493
810386-003 Chloride	mg/L	10/15/2013 18:27	500	17.4	50.0	2410
Sulfate	mg/L	10/15/2013 22:27	50.0	1.54	25.0	489
810386-004 Chloride	mg/L	10/15/2013 19:01	500	17.4	50.0	1730
Sulfate	mg/L	10/15/2013 22:38	50.0	1.54	25.0	372
810386-005 Chloride	mg/L	10/15/2013 19:13	500	17.4	50.0	2190
Sulfate	mg/L	10/15/2013 22:49	50.0	1.54	25.0	512

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

810386-006 Chloride	mg/L	10/15/2013 19:24	500	17.4	50.0	2150
Sulfate	mg/L	10/15/2013 23:01	50.0	1.54	25.0	500
810386-007 Chloride	mg/L	10/15/2013 19:35	500	17.4	50.0	865
Sulfate	mg/L	10/15/2013 23:35	50.0	1.54	25.0	163
810386-008 Chloride	mg/L	10/15/2013 19:47	500	17.4	50.0	2060
Sulfate	mg/L	10/15/2013 23:46	50.0	1.54	25.0	454
810386-009 Chloride	mg/L	10/15/2013 19:58	500	17.4	50.0	2110
Sulfate	mg/L	10/15/2013 23:58	50.0	1.54	25.0	494
810386-010 Chloride	mg/L	10/15/2013 20:10	500	17.4	50.0	2130
Sulfate	mg/L	10/16/2013 00:09	50.0	1.54	25.0	503
810386-011 Chloride	mg/L	10/15/2013 20:21	500	17.4	50.0	2120
Sulfate	mg/L	10/16/2013 00:21	50.0	1.54	25.0	494
810386-012 Chloride	mg/L	10/15/2013 20:32	500	17.4	50.0	2090
Sulfate	mg/L	10/16/2013 00:32	50.0	1.54	25.0	490
810386-013 Sulfate	mg/L	10/15/2013 20:44	50.0	1.54	25.0	99.8
810386-014 Chloride	mg/L	10/15/2013 21:18	100	3.49	10.0	469
Sulfate	mg/L	10/15/2013 21:18	100	3.07	50.0	93.7

Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	1.00	ND	0.208	0	0 - 20
Sulfate	mg/L	1.00	ND	0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.97	4.00	99.4	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	99.9	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.18	2.21(2.00)	98.8	85 - 115
Sulfate	mg/L	1.00	1.90	2.00(2.00)	94.8	85 - 115



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Anions By I.C. - EPA 300.0

Batch 10AN13M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Fluoride	mg/L	10/14/2013 21:02	5.00	0.104	0.500	1.84
810386-002 Fluoride	mg/L	10/14/2013 21:14	5.00	0.104	0.500	2.35
810386-003 Fluoride	mg/L	10/14/2013 21:25	5.00	0.104	0.500	1.66
810386-004 Fluoride	mg/L	10/14/2013 21:37	5.00	0.104	0.500	1.67
810386-005 Fluoride	mg/L	10/14/2013 21:48	5.00	0.104	0.500	2.06
810386-006 Fluoride	mg/L	10/14/2013 22:22	5.00	0.104	0.500	2.08
810386-007 Fluoride	mg/L	10/14/2013 22:34	5.00	0.104	0.500	1.80
810386-008 Fluoride	mg/L	10/14/2013 22:45	5.00	0.104	0.500	1.77
810386-009 Fluoride	mg/L	10/14/2013 22:57	5.00	0.104	0.500	2.34
810386-010 Fluoride	mg/L	10/14/2013 23:08	5.00	0.104	0.500	1.92
810386-011 Fluoride	mg/L	10/14/2013 23:19	5.00	0.104	0.500	1.96
810386-012 Fluoride	mg/L	10/14/2013 23:31	5.00	0.104	0.500	2.04
810386-013 Fluoride	mg/L	10/14/2013 23:42	5.00	0.104	0.500	4.74
810386-014 Fluoride	mg/L	10/14/2013 23:54	5.00	0.104	0.500	4.77

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	ND	0.256	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.04	4.00	101	90 - 110

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.29	2.26(2.00)	102	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.15	4.00	104	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.07	3.00	102	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Anions By I.C. - EPA 300.0

Batch 10AN13P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-013 Chloride	mg/L	10/16/2013 15:04	100	3.49	10.0	468

Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND

Duplicate

Lab ID = 810328-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	1.00	ND	0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.99	4.00	99.8	90 - 110

Matrix Spike

Lab ID = 810328-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	1.00	1.78	2.00(2.00)	88.9	85 - 115

Matrix Spike Duplicate

Lab ID = 810328-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	1.00	1.79	2.00(2.00)	89.5	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.98	4.00	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.00	3.00	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.18	3.00	106	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.08	3.00	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.2	90 - 110



Client: E2 Consulting Engineers, Inc.

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Alkalinity by SM 2320B		Batch 10ALK13D				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	54.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	54.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810386-008 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	50.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	50.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810386-009 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	47.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	47.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810386-010 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	50.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	50.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810386-011 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	30.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	30.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND
810386-012 Alkalinity as CaCO ₃	mg/L	10/17/2013	1.00	1.68	5.00	76.0
Bicarbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	76.0
Carbonate (Calculated)	mg/L	10/17/2013	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO ₃	mg/L	1.00	ND

Duplicate

Lab ID = 810386-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	50.0	50.0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	98.0	100	98.0	90 - 110

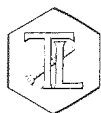
Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	99.0	100	99.0	90 - 110

Matrix Spike

Lab ID = 810386-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	175	176(100)	99.0	75 - 125

*Report Continued***Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 9 of 59****Project Number: 423575.MP.02.CM****Printed 11/8/2013****Matrix Spike Duplicate****Lab ID = 810386-012**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	176	176(100)	100	75 - 125



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Printed 11/8/2013

Specific Conductivity - EPA 120.1

Batch 10EC13H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6360
810386-002 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6470
810386-003 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6530
810386-004 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	5190
810386-005 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6710
810386-006 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6650
810386-007 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	2880
810386-008 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6260
810386-009 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6460
810386-010 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6660
810386-011 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6570
810386-012 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	6450
810386-013 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	1760
810386-014 Specific Conductivity	umhos/cm	10/17/2013	1.00	0.606	2.00	1740

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 810386-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	6670	6660	0.150	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	684	706	96.9	90 - 110

MRCCS - Secondary

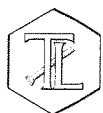
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	686	706	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	913	1000	91.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	913	1000	91.3	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
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Printed 1/7/2014
Revised

Metals by EPA 6010B, Total		Batch 101713B				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Iron	ug/L	10/17/2013 17:08	1.00	3.00	20.0	ND
810386-008 Iron	ug/L	10/17/2013 17:55	1.00	3.00	20.0	77.5
810386-009 Iron	ug/L	10/17/2013 18:02	1.00	3.00	20.0	ND
810386-010 Iron	ug/L	10/17/2013 18:08	1.00	3.00	20.0	ND
810386-011 Iron	ug/L	10/17/2013 18:15	1.00	3.00	20.0	ND
810386-012 Iron	ug/L	10/17/2013 18:22	1.00	3.00	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate
Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	57.2	50.0	114	85 - 115

Matrix Spike
Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	48.8	50.0(50.0)	97.6	75 - 125

Matrix Spike Duplicate
Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	44.7	50.0(50.0)	89.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5050	5000	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5020	5000	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4970	5000	99.5	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2220	2000	111	80 - 120



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Chrome VI by EPA 218.6

Batch 10CrH13T

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Chromium, Hexavalent	ug/L	10/19/2013 11:30	5.00	0.0300	1.0	5.4
810386-002 Chromium, Hexavalent	ug/L	10/19/2013 11:40	5.00	0.0300	1.0	ND
810386-003 Chromium, Hexavalent	ug/L	10/19/2013 11:51	5.00	0.0300	1.0	1.2
810386-004 Chromium, Hexavalent	ug/L	10/19/2013 12:01	5.00	0.0300	1.0	7.4
810386-005 Chromium, Hexavalent	ug/L	10/19/2013 12:11	5.00	0.0300	1.0	ND
810386-006 Chromium, Hexavalent	ug/L	10/19/2013 12:22	5.00	0.0300	1.0	ND
810386-007 Chromium, Hexavalent	ug/L	10/19/2013 07:03	1.00	0.00600	0.20	18.2
810386-008 Chromium, Hexavalent	ug/L	10/19/2013 12:32	5.00	0.0300	1.0	5.4
810386-009 Chromium, Hexavalent	ug/L	10/19/2013 12:43	5.00	0.0300	1.0	ND
810386-010 Chromium, Hexavalent	ug/L	10/19/2013 12:53	5.00	0.0300	1.0	ND
810386-011 Chromium, Hexavalent	ug/L	10/19/2013 13:03	5.00	0.0300	1.0	ND
810386-012 Chromium, Hexavalent	ug/L	10/19/2013 13:35	5.00	0.0300	1.0	1.6
810386-015 Chromium, Hexavalent	ug/L	10/19/2013 08:47	1.00	0.00600	0.20	ND
810386-016 Chromium, Hexavalent	ug/L	10/19/2013 08:58	1.00	0.00600	0.20	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 810386-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.6	18.2	3.25	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.184	0.200	92.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	90 - 110

Matrix Spike

Lab ID = 810321-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.13	7.35(5.00)	95.5	90 - 110

Matrix Spike

Lab ID = 810321-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	30.1	32.0(25.0)	92.4	90 - 110



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Matrix Spike						Lab ID = 810386-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	28.8	30.4(25.0)	93.5	90 - 110
Matrix Spike						Lab ID = 810386-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.58	5.71(5.00)	97.4	90 - 110
Matrix Spike						Lab ID = 810386-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.98	6.19(5.00)	95.9	90 - 110
Matrix Spike						Lab ID = 810386-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.2	17.6(10.0)	95.8	90 - 110
Matrix Spike						Lab ID = 810386-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	31.1	32.4(25.0)	94.9	90 - 110
Matrix Spike						Lab ID = 810386-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.19	5.37(5.00)	96.4	90 - 110
Matrix Spike						Lab ID = 810386-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.26	5.50(5.00)	95.1	90 - 110
Matrix Spike						Lab ID = 810386-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	36.2	38.2(20.0)	90.3	90 - 110
Matrix Spike						Lab ID = 810386-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	29.2	30.4(25.0)	95.4	90 - 110
Matrix Spike						Lab ID = 810386-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.25	5.43(5.00)	96.5	90 - 110
Matrix Spike						Lab ID = 810386-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.50	5.71(5.00)	95.7	90 - 110
Matrix Spike						Lab ID = 810386-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.08	5.36(5.00)	94.4	90 - 110

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Lab ID = 810386-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	6.43	6.58(5.00)	97.0	90 - 110

Matrix Spike

Lab ID = 810386-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.00(1.00)	101	90 - 110

Matrix Spike

Lab ID = 810386-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.00(1.00)	101	90 - 110

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.91	10.0	99.1	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.85	10.0	98.5	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.87	10.0	98.7	95 - 105

MRCVS - Primary

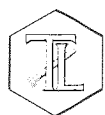
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.80	10.0	98.0	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.76	10.0	97.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102	95 - 105



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Chrome VI by EPA 218.6

Batch 10CrH13V

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-013 Chromium, Hexavalent	ug/L	10/21/2013 11:57	1.00	0.00600	0.20	22.9
810386-014 Chromium, Hexavalent	ug/L	10/21/2013 12:08	1.00	0.00600	0.20	22.8

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 810437-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	48.6	49.3	1.34	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.180	0.200	90.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.81	5.00	96.2	90 - 110

Matrix Spike

Lab ID = 810386-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	46.4	47.9(25.0)	94.0	90 - 110

Matrix Spike

Lab ID = 810386-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	46.3	47.8(25.0)	94.0	90 - 110

Matrix Spike

Lab ID = 810415-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.83	6.74(5.00)	102	90 - 110

Matrix Spike

Lab ID = 810415-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.75	6.69(5.00)	101	90 - 110

Matrix Spike

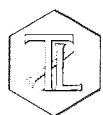
Lab ID = 810415-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.35	1.33(1.00)	102	90 - 110

Matrix Spike

Lab ID = 810415-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.09	7.03(5.00)	101	90 - 110



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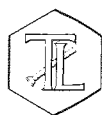
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Total Dissolved Solids by SM 2540 C			Batch 10TDS13I			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4100
810386-002 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4270
810386-003 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4320
810386-004 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	3870
810386-005 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4240
810386-006 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4300
810386-007 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	50.0	1820
810386-008 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4120
810386-009 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4130
810386-010 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4250
810386-011 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4240
810386-012 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	125	4160
810386-013 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	50.0	1040
810386-014 Total Dissolved Solids	mg/L	10/16/2013	1.00	1.76	50.0	1030
Method Blank						
Parameter	Unit	DF	Result			
Total Dissolved Solids	mg/L	1.00	ND			
Duplicate					Lab ID = 810342-002	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	510	503	1.38	0 - 10
Duplicate					Lab ID = 810386-006	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4130	4300	4.03	0 - 10
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	498	500	99.6	90 - 110



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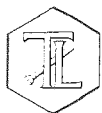
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Ammonia Nitrogen by SM4500-NH3D			Batch 10NH313B			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Ammonia as N	mg/L	10/22/2013	1.00	0.0318	0.500	ND
810386-008 Ammonia as N	mg/L	10/22/2013	1.00	0.0318	0.500	ND
810386-009 Ammonia as N	mg/L	10/22/2013	1.00	0.0318	0.500	ND
810386-010 Ammonia as N	mg/L	10/22/2013	1.00	0.0318	0.500	ND
810386-011 Ammonia as N	mg/L	10/22/2013	1.00	0.0318	0.500	ND
810386-012 Ammonia as N	mg/L	10/22/2013	1.00	0.0318	0.500	ND
Method Blank						
Parameter	Unit	DF	Result			
Ammonia as N	mg/L	1.00	ND			
Duplicate					Lab ID = 810386-012	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	ND	0	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.87	10.0	98.7	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.7	10.0	107	90 - 110
Matrix Spike					Lab ID = 810386-012	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	8.30	10.0(10.0)	83.0	75 - 125
Matrix Spike Duplicate					Lab ID = 810386-012	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.18	10.0(10.0)	91.8	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.07	6.00	101	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.54	6.00	109	90 - 110



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Metals by EPA 200.8, Dissolved		Batch 101813B				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Antimony	ug/L	10/18/2013 20:31	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/18/2013 20:31	2.00	0.100	0.50	2.2
Barium	ug/L	10/18/2013 20:31	2.00	0.594	5.0	87.1
Cadmium	ug/L	10/18/2013 20:31	2.00	0.0800	1.0	ND
Chromium	ug/L	10/18/2013 20:31	2.00	0.142	1.0	5.6
Cobalt	ug/L	10/18/2013 20:31	2.00	0.0800	5.0	ND
Lead	ug/L	10/18/2013 20:31	2.00	0.286	1.0	ND
810386-002 Chromium	ug/L	10/18/2013 21:19	2.00	0.142	1.0	ND
Molybdenum	ug/L	10/18/2013 21:19	2.00	0.100	2.0	20.7
810386-003 Chromium	ug/L	10/18/2013 21:25	2.00	0.142	1.0	1.5
Molybdenum	ug/L	10/18/2013 21:25	2.00	0.100	2.0	11.1
810386-004 Molybdenum	ug/L	10/18/2013 21:31	2.00	0.100	2.0	5.9
810386-005 Molybdenum	ug/L	10/18/2013 21:37	2.00	0.100	2.0	18.2
810386-006 Chromium	ug/L	10/18/2013 21:43	2.00	0.142	1.0	ND
Molybdenum	ug/L	10/18/2013 21:43	2.00	0.100	2.0	17.0
810386-007 Chromium	ug/L	10/18/2013 21:49	2.00	0.142	1.0	17.1
Molybdenum	ug/L	10/18/2013 21:49	2.00	0.100	2.0	15.5
810386-008 Antimony	ug/L	10/18/2013 21:56	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/18/2013 21:56	2.00	0.100	0.50	2.2
Barium	ug/L	10/18/2013 21:56	2.00	0.594	5.0	90.4
Cadmium	ug/L	10/18/2013 21:56	2.00	0.0800	1.0	ND
Chromium	ug/L	10/18/2013 21:56	2.00	0.142	1.0	5.7
Cobalt	ug/L	10/18/2013 21:56	2.00	0.0800	5.0	ND
Lead	ug/L	10/18/2013 21:56	2.00	0.286	1.0	ND
810386-009 Antimony	ug/L	10/18/2013 22:02	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/18/2013 22:02	2.00	0.100	0.50	1.3
Barium	ug/L	10/18/2013 22:02	2.00	0.594	5.0	21.6
Cadmium	ug/L	10/18/2013 22:02	2.00	0.0800	1.0	ND
Chromium	ug/L	10/18/2013 22:02	2.00	0.142	1.0	ND
Cobalt	ug/L	10/18/2013 22:02	2.00	0.0800	5.0	ND
Lead	ug/L	10/18/2013 22:02	2.00	0.286	1.0	ND
810386-010 Antimony	ug/L	10/18/2013 22:08	2.00	0.0700	2.0	ND
Barium	ug/L	10/18/2013 22:08	2.00	0.594	5.0	84.0
Cadmium	ug/L	10/18/2013 22:08	2.00	0.0800	1.0	ND

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



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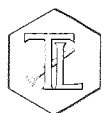
Project Number: 423575.MP.02.CM

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810386-010 Cobalt	ug/L	10/18/2013 22:08	2.00	0.0800	5.0	ND
Lead	ug/L	10/18/2013 22:08	2.00	0.286	1.0	ND
810386-011 Antimony	ug/L	10/18/2013 22:32	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/18/2013 22:32	2.00	0.100	0.50	3.5
Barium	ug/L	10/18/2013 22:32	2.00	0.594	5.0	15.8
Cadmium	ug/L	10/18/2013 22:32	2.00	0.0800	1.0	ND
Chromium	ug/L	10/18/2013 22:32	2.00	0.142	1.0	ND
Cobalt	ug/L	10/18/2013 22:32	2.00	0.0800	5.0	ND
Lead	ug/L	10/18/2013 22:32	2.00	0.286	1.0	ND
810386-012 Antimony	ug/L	10/18/2013 22:38	2.00	0.0700	2.0	ND
Arsenic	ug/L	10/18/2013 22:38	2.00	0.100	0.50	1.6
Barium	ug/L	10/18/2013 22:38	2.00	0.594	5.0	41.0
Cadmium	ug/L	10/18/2013 22:38	2.00	0.0800	1.0	ND
Chromium	ug/L	10/18/2013 22:38	2.00	0.142	1.0	1.6
Cobalt	ug/L	10/18/2013 22:38	2.00	0.0800	5.0	ND
Lead	ug/L	10/18/2013 22:38	2.00	0.286	1.0	ND
810386-013 Chromium	ug/L	10/18/2013 22:44	2.00	0.142	1.0	22.0
810386-014 Chromium	ug/L	10/18/2013 22:50	2.00	0.142	1.0	21.7

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Cadmium	ug/L	1.00	ND
Cobalt	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 23 of 59****Project Number: 423575.MP.02.CM****Printed 11/8/2013****Duplicate**

Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	2.00	2.36	2.26	4.29	0 - 20
Barium	ug/L	2.00	85.5	87.1	1.81	0 - 20
Cadmium	ug/L	2.00	ND	0	0	0 - 20
Cobalt	ug/L	2.00	ND	0	0	0 - 20
Chromium	ug/L	2.00	5.88	5.59	4.97	0 - 20
Antimony	ug/L	2.00	ND	0	0	0 - 20
Lead	ug/L	2.00	ND	0	0	0 - 20
Molybdenum	ug/L	2.00	8.28	8.32	0.446	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.218	0.200	109	70 - 130
Barium	ug/L	1.00	0.849	1.00	84.9	70 - 130
Cadmium	ug/L	1.00	0.178	0.200	89.0	70 - 130
Cobalt	ug/L	1.00	0.170	0.200	85.0	70 - 130
Chromium	ug/L	1.00	0.164	0.200	82.0	70 - 130
Antimony	ug/L	1.00	0.181	0.200	90.5	70 - 130
Lead	ug/L	1.00	0.440	0.500	88.0	70 - 130
Molybdenum	ug/L	1.00	0.177	0.200	88.5	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.6	50.0	103	85 - 115
Barium	ug/L	1.00	50.3	50.0	100	85 - 115
Cadmium	ug/L	1.00	48.9	50.0	97.8	85 - 115
Cobalt	ug/L	1.00	49.2	50.0	98.3	85 - 115
Chromium	ug/L	1.00	50.8	50.0	102	85 - 115
Antimony	ug/L	1.00	49.6	50.0	99.2	85 - 115
Lead	ug/L	1.00	50.7	50.0	101	85 - 115
Molybdenum	ug/L	1.00	49.0	50.0	97.9	85 - 115



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Matrix Spike

Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	53.2	52.3(50.0)	102	75 - 125
Barium	ug/L	2.00	145	137(50.0)	116	75 - 125
Cadmium	ug/L	2.00	44.4	50.0(50.0)	88.8	75 - 125
Cobalt	ug/L	2.00	45.2	50.0(50.0)	90.4	75 - 125
Chromium	ug/L	2.00	54.3	55.6(50.0)	97.4	75 - 125
Antimony	ug/L	2.00	48.5	50.0(50.0)	97.1	75 - 125
Lead	ug/L	2.00	45.2	50.0(50.0)	90.4	75 - 125
Molybdenum	ug/L	2.00	57.1	58.3(50.0)	97.5	75 - 125

Matrix Spike Duplicate

Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	52.2	52.3(50.0)	100.	75 - 125
Barium	ug/L	2.00	145	137(50.0)	116	75 - 125
Cadmium	ug/L	2.00	44.7	50.0(50.0)	89.4	75 - 125
Cobalt	ug/L	2.00	46.4	50.0(50.0)	92.7	75 - 125
Chromium	ug/L	2.00	53.2	55.6(50.0)	95.3	75 - 125
Antimony	ug/L	2.00	49.8	50.0(50.0)	99.7	75 - 125
Lead	ug/L	2.00	46.3	50.0(50.0)	92.7	75 - 125
Molybdenum	ug/L	2.00	58.0	58.3(50.0)	99.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.7	20.0	98.6	90 - 110
Barium	ug/L	1.00	18.9	20.0	94.3	90 - 110
Cadmium	ug/L	1.00	18.8	20.0	93.8	90 - 110
Cobalt	ug/L	1.00	18.6	20.0	92.8	90 - 110
Chromium	ug/L	1.00	19.2	20.0	96.3	90 - 110
Antimony	ug/L	1.00	19.3	20.0	96.4	90 - 110
Lead	ug/L	1.00	19.3	20.0	96.5	90 - 110
Molybdenum	ug/L	1.00	18.7	20.0	93.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.0	20.0	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.6	20.0	98.0	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 29 of 59****Project Number: 423575.MP.02.CM****Printed 11/8/2013****Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	18.8	20.0	94.2	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	19.0	20.0	95.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	18.9	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	19.2	0		
Chromium	ug/L	1.00	19.9	20.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	19.8	20.0	98.8	80 - 120
Antimony	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0		

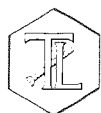
Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0		

Serial Dilution

Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	10.0	90.5	87.1	3.81	0 - 10



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Metals by EPA 200.8, Dissolved

Batch 102113A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Beryllium	ug/L	10/21/2013 15:17	2.00	0.0720	0.50	ND
Copper	ug/L	10/21/2013 15:17	2.00	0.380	5.0	ND
Mercury	ug/L	10/21/2013 15:17	1.00	0.0400	0.40	ND
810386-004 Chromium	ug/L	10/21/2013 15:53	2.00	0.142	1.0	8.4
810386-005 Chromium	ug/L	10/21/2013 16:00	2.00	0.142	1.0	ND
810386-008 Beryllium	ug/L	10/21/2013 16:06	2.00	0.0720	0.50	ND
Copper	ug/L	10/21/2013 16:06	2.00	0.380	5.0	ND
Mercury	ug/L	10/21/2013 16:06	2.00	0.0800	0.40	ND
810386-009 Beryllium	ug/L	10/21/2013 16:12	2.00	0.0720	0.50	ND
Copper	ug/L	10/21/2013 16:12	2.00	0.380	5.0	ND
Mercury	ug/L	10/21/2013 16:12	2.00	0.0800	0.40	ND
810386-010 Arsenic	ug/L	10/21/2013 16:18	2.00	0.100	0.50	1.6
Beryllium	ug/L	10/21/2013 16:18	2.00	0.0720	0.50	ND
Chromium	ug/L	10/21/2013 16:18	2.00	0.142	1.0	ND
Copper	ug/L	10/21/2013 16:18	2.00	0.380	5.0	ND
Mercury	ug/L	10/21/2013 16:18	2.00	0.0800	0.40	ND
810386-011 Beryllium	ug/L	10/21/2013 16:24	2.00	0.0720	0.50	ND
Copper	ug/L	10/21/2013 16:24	2.00	0.380	5.0	ND
Mercury	ug/L	10/21/2013 16:24	2.00	0.0800	0.40	ND
810386-012 Beryllium	ug/L	10/21/2013 16:30	2.00	0.0720	0.50	ND
Copper	ug/L	10/21/2013 16:30	2.00	0.380	5.0	ND
Mercury	ug/L	10/21/2013 16:30	2.00	0.0800	0.40	ND
810386-013 Molybdenum	ug/L	10/21/2013 16:36	2.00	0.100	2.0	34.7
810386-014 Molybdenum	ug/L	10/21/2013 16:48	2.00	0.100	2.0	34.6

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Beryllium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Mercury	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND


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Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	2.00	2.16	2.28	5.22	0 - 20
Beryllium	ug/L	2.00	ND	0	0	0 - 20
Chromium	ug/L	2.00	5.51	5.67	2.84	0 - 20
Mercury	ug/L	2.00	ND	0	0	0 - 20
Copper	ug/L	2.00	ND	0	0	0 - 20
Molybdenum	ug/L	2.00	8.69	8.94	2.84	0 - 20

Low Level Calibration Verification

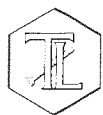
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.213	0.200	106	70 - 130
Beryllium	ug/L	1.00	0.178	0.200	89.0	70 - 130
Chromium	ug/L	1.00	0.204	0.200	102	70 - 130
Mercury	ug/L	1.00	0.233	0.200	116	70 - 130
Copper	ug/L	1.00	1.23	1.00	123	70 - 130
Molybdenum	ug/L	1.00	0.205	0.200	102	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	52.3	50.0	105	85 - 115
Beryllium	ug/L	1.00	50.3	50.0	101	85 - 115
Chromium	ug/L	1.00	53.0	50.0	106	85 - 115
Mercury	ug/L	1.00	5.43	5.00	108	85 - 115
Copper	ug/L	1.00	54.0	50.0	108	85 - 115
Molybdenum	ug/L	1.00	52.3	50.0	105	85 - 115

Matrix Spike
Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	52.8	52.3(50.0)	101	75 - 125
Beryllium	ug/L	2.00	42.5	50.0(50.0)	85.0	75 - 125
Chromium	ug/L	2.00	55.6	55.7(50.0)	99.9	75 - 125
Mercury	ug/L	2.00	4.89	5.00(5.00)	97.7	75 - 125
Copper	ug/L	2.00	46.6	50.0(50.0)	93.2	75 - 125
Molybdenum	ug/L	2.00	58.8	58.9(50.0)	99.8	75 - 125



Client: E2 Consulting Engineers, Inc.

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Project Number: 423575.MP.02.CM

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Matrix Spike Duplicate

Lab ID = 810386-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	52.0	52.3(50.0)	99.4	75 - 125
Beryllium	ug/L	2.00	40.9	50.0(50.0)	81.8	75 - 125
Chromium	ug/L	2.00	55.0	55.7(50.0)	98.7	75 - 125
Mercury	ug/L	2.00	4.70	5.00(5.00)	93.9	75 - 125
Copper	ug/L	2.00	46.2	50.0(50.0)	92.3	75 - 125
Molybdenum	ug/L	2.00	56.5	58.9(50.0)	95.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.0	20.0	100	90 - 110
Beryllium	ug/L	1.00	19.8	20.0	99.2	90 - 110
Chromium	ug/L	1.00	19.9	20.0	99.5	90 - 110
Mercury	ug/L	1.00	2.08	2.00	104	90 - 110
Copper	ug/L	1.00	19.8	20.0	99.2	90 - 110
Molybdenum	ug/L	1.00	19.6	20.0	97.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.0	20.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.4	20.0	97.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	18.7	20.0	93.5	90 - 110

MRCVS - Primary

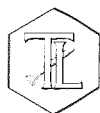
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	18.7	20.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.5	20.0	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	19.5	20.0	97.4	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 36 of 59****Project Number: 423575.MP.02.CM****Printed 11/8/2013****Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	ND	0		
Chromium	ug/L	1.00	20.2	20.0	101	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	20.0	20.0	100	80 - 120
Mercury	ug/L	1.00	1.94	2.00	97.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	2.09	2.00	105	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	20.3	20.0	101	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	20.0	20.0	99.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0		

Serial Dilution**Lab ID = 810386-013**

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Molybdenum	ug/L	10.0	37.8	34.7	8.70	0 - 10



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Metals by EPA 200.8, Dissolved		Batch 110613C				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Manganese	ug/L	11/07/2013 05:17	1.00	0.0600	0.50	ND
Molybdenum	ug/L	11/07/2013 05:17	1.00	0.0500	2.0	10.1
Nickel	ug/L	11/07/2013 05:17	1.00	0.240	2.0	ND
Selenium	ug/L	11/07/2013 05:17	1.00	0.212	5.0	ND
Silver	ug/L	11/07/2013 05:17	1.00	0.0290	5.0	ND
Thallium	ug/L	11/07/2013 05:17	1.00	0.0300	1.0	ND
Vanadium	ug/L	11/07/2013 05:17	1.00	0.0700	5.0	ND
810386-008 Manganese	ug/L	11/07/2013 05:23	1.00	0.0600	0.50	ND
Molybdenum	ug/L	11/07/2013 05:23	1.00	0.0500	2.0	9.6
Nickel	ug/L	11/07/2013 05:23	1.00	0.240	2.0	ND
Selenium	ug/L	11/07/2013 05:23	1.00	0.212	5.0	ND
Silver	ug/L	11/07/2013 05:23	1.00	0.0290	5.0	ND
Thallium	ug/L	11/07/2013 05:23	1.00	0.0300	1.0	ND
Vanadium	ug/L	11/07/2013 05:23	1.00	0.0700	5.0	ND
810386-009 Manganese	ug/L	11/07/2013 06:05	1.00	0.0600	0.50	ND
Molybdenum	ug/L	11/07/2013 06:05	1.00	0.0500	2.0	19.9
Nickel	ug/L	11/07/2013 06:05	1.00	0.240	2.0	ND
Selenium	ug/L	11/07/2013 06:05	1.00	0.212	5.0	ND
Silver	ug/L	11/07/2013 06:05	1.00	0.0290	5.0	ND
Thallium	ug/L	11/07/2013 06:05	1.00	0.0300	1.0	ND
Vanadium	ug/L	11/07/2013 06:05	1.00	0.0700	5.0	ND
810386-010 Manganese	ug/L	11/07/2013 06:11	1.00	0.0600	0.50	ND
Molybdenum	ug/L	11/07/2013 06:11	1.00	0.0500	2.0	17.2
Nickel	ug/L	11/07/2013 06:11	1.00	0.240	2.0	ND
Selenium	ug/L	11/07/2013 06:11	1.00	0.212	5.0	ND
Silver	ug/L	11/07/2013 06:11	1.00	0.0290	5.0	ND
Thallium	ug/L	11/07/2013 06:11	1.00	0.0300	1.0	ND
Vanadium	ug/L	11/07/2013 06:11	1.00	0.0700	5.0	ND
810386-011 Manganese	ug/L	11/07/2013 06:17	1.00	0.0600	0.50	ND
Molybdenum	ug/L	11/07/2013 06:17	1.00	0.0500	2.0	18.7
Nickel	ug/L	11/07/2013 06:17	1.00	0.240	2.0	ND
Selenium	ug/L	11/07/2013 06:17	1.00	0.212	5.0	ND
Silver	ug/L	11/07/2013 06:17	1.00	0.0290	5.0	ND
Thallium	ug/L	11/07/2013 06:17	1.00	0.0300	1.0	ND

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



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Project Name: PG&E Topock Project

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810386-011 Vanadium	ug/L	11/07/2013 06:17	1.00	0.0700	5.0	ND
810386-012 Manganese	ug/L	11/07/2013 06:23	1.00	0.0600	0.50	ND
Molybdenum	ug/L	11/07/2013 06:23	1.00	0.0500	2.0	16.3
Nickel	ug/L	11/07/2013 06:23	1.00	0.240	2.0	ND
Selenium	ug/L	11/07/2013 06:23	1.00	0.212	5.0	ND
Silver	ug/L	11/07/2013 06:23	1.00	0.0290	5.0	ND
Thallium	ug/L	11/07/2013 06:23	1.00	0.0300	1.0	ND
Vanadium	ug/L	11/07/2013 06:23	1.00	0.0700	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Nickel	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Silver	ug/L	1.00	ND
Thallium	ug/L	1.00	1.51
Vanadium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 810386-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nickel	ug/L	1.00	ND	0	0	0 - 20
Selenium	ug/L	1.00	2.60	0	0	0 - 20
Silver	ug/L	1.00	ND	0	0	0 - 20
Thallium	ug/L	1.00	ND	0	0	0 - 20
Vanadium	ug/L	1.00	4.12	0	0	0 - 20
Manganese	ug/L	1.00	ND	0	0	0 - 20
Molybdenum	ug/L	1.00	9.33	9.57	2.54	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	1.18	1.00	118	70 - 130
Selenium	ug/L	1.00	0.647	0.500	129	70 - 130
Silver	ug/L	1.00	0.592	0.500	118	70 - 130
Thallium	ug/L	1.00	0.226	0.200	113	70 - 130
Vanadium	ug/L	1.00	0.232	0.200	116	70 - 130
Manganese	ug/L	1.00	0.405	0.500	81.0	70 - 130
Molybdenum	ug/L	1.00	0.224	0.200	112	70 - 130

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 39 of 59****Project Number: 423575.MP.02.CM****Printed 11/8/2013****Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	50.4	50.0	101	85 - 115
Selenium	ug/L	1.00	47.4	50.0	94.8	85 - 115
Silver	ug/L	1.00	51.1	50.0	102	85 - 115
Thallium	ug/L	1.00	47.0	50.0	94.0	85 - 115
Vanadium	ug/L	1.00	49.6	50.0	99.2	85 - 115
Manganese	ug/L	1.00	49.6	50.0	99.2	85 - 115
Molybdenum	ug/L	1.00	51.6	50.0	103	85 - 115

Matrix Spike

Lab ID = 810386-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	1.00	46.9	50.0(50.0)	93.8	75 - 125
Selenium	ug/L	1.00	49.9	50.0(50.0)	99.9	75 - 125
Silver	ug/L	1.00	43.9	50.0(50.0)	87.9	75 - 125
Thallium	ug/L	1.00	43.2	50.0(50.0)	86.3	75 - 125
Vanadium	ug/L	1.00	56.6	50.0(50.0)	113	75 - 125
Manganese	ug/L	1.00	49.3	50.0(50.0)	98.7	75 - 125
Molybdenum	ug/L	1.00	60.4	59.6(50.0)	102	75 - 125

Matrix Spike Duplicate

Lab ID = 810386-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	1.00	46.5	50.0(50.0)	92.9	75 - 125
Selenium	ug/L	1.00	49.3	50.0(50.0)	98.7	75 - 125
Silver	ug/L	1.00	44.0	50.0(50.0)	88.0	75 - 125
Thallium	ug/L	1.00	44.8	50.0(50.0)	89.7	75 - 125
Vanadium	ug/L	1.00	56.2	50.0(50.0)	112	75 - 125
Manganese	ug/L	1.00	49.1	50.0(50.0)	98.2	75 - 125
Molybdenum	ug/L	1.00	60.3	59.6(50.0)	102	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	19.7	20.0	98.6	90 - 110
Selenium	ug/L	1.00	20.0	20.0	100	90 - 110
Silver	ug/L	1.00	19.2	20.0	96.1	90 - 110
Thallium	ug/L	1.00	19.8	20.0	99.1	90 - 110
Vanadium	ug/L	1.00	19.6	20.0	97.8	90 - 110
Manganese	ug/L	1.00	19.6	20.0	98.2	90 - 110
Molybdenum	ug/L	1.00	20.5	20.0	102	90 - 110



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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Metals by 200.7, Dissolved

Batch 102113A-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Aluminum	ug/L	10/21/2013 14:29	1.00	7.20	20.0	ND
810386-008 Aluminum	ug/L	10/21/2013 14:35	1.00	7.20	20.0	ND
810386-009 Aluminum	ug/L	10/21/2013 15:15	1.00	7.20	20.0	ND
810386-010 Aluminum	ug/L	10/21/2013 15:21	1.00	7.20	20.0	ND
810386-011 Aluminum	ug/L	10/21/2013 15:28	1.00	7.20	20.0	ND
810386-012 Aluminum	ug/L	10/21/2013 15:34	1.00	7.20	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND

Duplicate

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	1.00	ND	0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2160	2000	108	85 - 115

Matrix Spike

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1990	2000(2000)	99.6	75 - 125

Matrix Spike Duplicate

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1920	2000(2000)	95.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5200	5000	104	95 - 105

MRCVS - Primary

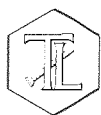
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4780	5000	95.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5170	5000	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5180	5000	104	90 - 110



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Project Number: 423575.MP.02.CM

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Metals by 200.7, Dissolved

Batch 102113A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-002 Sodium	ug/L	10/21/2013 12:32	200	12000	100000	1440000
810386-003 Sodium	ug/L	10/21/2013 12:39	200	12000	100000	1480000
810386-004 Sodium	ug/L	10/21/2013 12:45	200	12000	100000	801000
810386-005 Sodium	ug/L	10/21/2013 12:52	200	12000	100000	1800000
810386-006 Sodium	ug/L	10/21/2013 12:59	200	12000	100000	1620000
810386-007 Sodium	ug/L	10/21/2013 13:05	200	12000	100000	486000
810386-013 Sodium	ug/L	10/21/2013 13:12	200	12000	100000	391000
810386-014 Sodium	ug/L	10/21/2013 13:19	200	12000	100000	375000

Method Blank

Parameter	Unit	DF	Result
Sodium	ug/L	1.00	ND

Duplicate

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sodium	ug/L	20.0	75000	75100	0.186	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	2300	2000	115	85 - 115

Matrix Spike

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sodium	ug/L	20.0	124000	115000(40000)	122	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	5090	5000	102	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	5370	5000	107	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	4740	5000	94.7	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sodium	ug/L	1.00	2180	2000	109	80 - 120



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Project Number: 423575.MP.02.CM

Printed 11/8/2013

Metals by 200.7, Dissolved

Batch 101913A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Calcium	ug/L	10/19/2013 15:18	20.0	340	10000	177000
810386-008 Calcium	ug/L	10/19/2013 15:25	20.0	340	10000	173000
810386-009 Calcium	ug/L	10/19/2013 15:32	20.0	340	10000	164000
810386-010 Calcium	ug/L	10/19/2013 15:39	20.0	340	10000	175000
810386-011 Calcium	ug/L	10/19/2013 15:45	20.0	340	10000	119000
810386-012 Calcium	ug/L	10/19/2013 15:52	20.0	340	10000	134000

Method Blank

Parameter	Unit	DF	Result
Calcium	ug/L	1.00	ND

Duplicate

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Calcium	ug/L	20.0	53900	53600	0.595	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	2000	2000	100	85 - 115

Matrix Spike

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Calcium	ug/L	20.0	93000	93600(40000)	98.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	5110	5000	102	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4610	5000	92.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4650	5000	93.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4670	5000	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	ug/L	1.00	4980	5000	99.6	90 - 110



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Project Number: 423575.MP.02.CM

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Metals by 200.7, Dissolved

Batch 101813A-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Boron	ug/L	10/18/2013 19:39	1.00	4.10	200	857
Iron	ug/L	10/18/2013 19:39	1.00	3.00	20.0	ND
810386-008 Boron	ug/L	10/18/2013 19:45	1.00	4.10	200	854
Iron	ug/L	10/18/2013 19:45	1.00	3.00	20.0	ND
810386-009 Boron	ug/L	10/18/2013 19:52	1.00	4.10	200	900
Iron	ug/L	10/18/2013 19:52	1.00	3.00	20.0	ND
810386-010 Boron	ug/L	10/18/2013 19:58	1.00	4.10	200	912
Iron	ug/L	10/18/2013 19:58	1.00	3.00	20.0	ND
810386-011 Boron	ug/L	10/18/2013 20:04	1.00	4.10	200	917
Iron	ug/L	10/18/2013 20:04	1.00	3.00	20.0	ND
810386-012 Boron	ug/L	10/18/2013 20:11	1.00	4.10	200	992
Iron	ug/L	10/18/2013 20:11	1.00	3.00	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Boron	ug/L	1.00	ND

Duplicate

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	28.1	32.5	14.5	0 - 20
Boron	ug/L	1.00	211	207	1.82	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2270	2000	114	85 - 115
Boron	ug/L	1.00	2010	2000	100	85 - 115

Matrix Spike

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	2230	2030(2000)	110	75 - 125
Boron	ug/L	1.00	2350	2210(2000)	107	75 - 125

Matrix Spike Duplicate

Lab ID = 810355-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	2180	2030(2000)	108	75 - 125
Boron	ug/L	1.00	2290	2210(2000)	104	75 - 125



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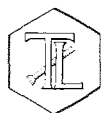
Project Number: 423575.MP.02.CM

Printed 11/8/2013

Metals by 200.7, Dissolved		Batch 110713A-Th2				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Magnesium	ug/L	11/07/2013 17:02	1.00	468	1000	14500
Potassium	ug/L	11/07/2013 17:02	1.00	95.2	500	15600
Sodium	ug/L	11/07/2013 14:35	200	12000	100000	1300000
Zinc	ug/L	11/07/2013 17:02	1.00	5.10	20.0	ND
810386-008 Magnesium	ug/L	11/07/2013 17:08	1.00	468	1000	14800
Potassium	ug/L	11/07/2013 17:08	1.00	95.2	500	15900
Sodium	ug/L	11/07/2013 14:41	200	12000	100000	1320000
Zinc	ug/L	11/07/2013 17:08	1.00	5.10	20.0	ND
810386-009 Magnesium	ug/L	11/07/2013 13:46	10.0	4680	10000	16300
Potassium	ug/L	11/07/2013 13:46	10.0	952	5000	13900
Sodium	ug/L	11/07/2013 14:10	1000	59800	500000	1400000
Zinc	ug/L	11/07/2013 16:37	1.00	5.10	20.0	ND
810386-010 Magnesium	ug/L	11/07/2013 17:15	1.00	468	1000	14600
Potassium	ug/L	11/07/2013 17:15	1.00	95.2	500	15500
Sodium	ug/L	11/07/2013 15:04	200	12000	100000	1400000
Zinc	ug/L	11/07/2013 17:15	1.00	5.10	20.0	ND
810386-011 Magnesium	ug/L	11/07/2013 17:50	2.00	936	2000	28200
Potassium	ug/L	11/07/2013 17:37	1.00	95.2	500	17500
Sodium	ug/L	11/07/2013 15:10	200	12000	100000	1420000
Zinc	ug/L	11/07/2013 17:37	1.00	5.10	20.0	ND
810386-012 Magnesium	ug/L	11/07/2013 17:56	2.00	936	2000	22800
Potassium	ug/L	11/07/2013 17:43	1.00	95.2	500	16600
Sodium	ug/L	11/07/2013 15:16	200	12000	100000	1360000
Zinc	ug/L	11/07/2013 17:43	1.00	5.10	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Zinc	ug/L	1.00	ND
Potassium	ug/L	1.00	ND
Sodium	ug/L	1.00	ND
Magnesium	ug/L	1.00	ND



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Duplicate

Lab ID = 810386-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Zinc	ug/L	1.00	ND	0	0	0 - 20
Potassium	ug/L	10.0	13600	13900	2.40	0 - 20
Sodium	ug/L	1000	1360000	1400000	2.97	0 - 20
Magnesium	ug/L	10.0	17600	16300	7.90	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	2150	2000	108	85 - 115
Potassium	ug/L	1.00	2090	2000	105	85 - 115
Sodium	ug/L	1.00	2020	2000	101	85 - 115
Magnesium	ug/L	1.00	2030	2000	102	85 - 115

Matrix Spike

Lab ID = 810386-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	2220	2000(2000)	111	75 - 125
Potassium	ug/L	10.0	32800	33900(20000)	94.4	75 - 125
Sodium	ug/L	1000	3340000	3400000(200000)	97.2	75 - 125
Magnesium	ug/L	10.0	35300	36300(20000)	95.0	75 - 125

Matrix Spike Duplicate

Lab ID = 810386-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	2220	2000(2000)	111	75 - 125

MRCVS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5180	5000	104	95 - 105
Potassium	ug/L	1.00	4800	5000	96.0	95 - 105
Sodium	ug/L	1.00	4840	5000	96.8	95 - 105
Magnesium	ug/L	1.00	5060	5000	101	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5210	5000	104	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5080	5000	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5120	5000	102	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



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Turbidity by SM 2130 B		Batch 10TUC13K				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
810386-001 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-002 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	0.415
810386-003 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-004 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	0.212
810386-005 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	0.138
810386-006 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-007 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	0.238
810386-008 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-009 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-010 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-011 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-012 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	ND
810386-013 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	2.10
810386-014 Turbidity	NTU	10/11/2013	1.00	0.0140	0.100	2.25

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 810386-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.408	0.415	1.70	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.36	8.00	92.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.54	8.00	94.2	90 - 110



TRUESDAIL LABORATORIES, INC.

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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

 Batch: 10TDS131
 Date Analyzed: 10/16/13

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	67.4976	67.4979	67.4978	0.0001	No	0.0002	2.0	25.0	ND	1
810335-1	100	77.9876	78.0347	78.0345	0.0002	No	0.0469	469.0	25.0	469.0	1
810335-2	100	69.4842	69.5176	69.5172	0.0004	No	0.0330	330.0	25.0	330.0	1
810335-3	100	74.0442	74.0911	74.0911	0.0000	No	0.0469	469.0	25.0	469.0	1
810335-4	100	73.8232	73.8653	73.8653	0.0000	No	0.0421	421.0	25.0	421.0	1
810386-1	20	47.7599	47.842	47.842	0.0000	No	0.0821	4105.0	125.0	4105.0	1
810386-2	20	46.9746	47.0602	47.0600	0.0002	No	0.0854	4270.0	125.0	4270.0	1
810386-3	20	72.6337	72.72	72.72	0.0000	No	0.0863	4315.0	125.0	4315.0	1
810386-4	20	49.8117	49.8891	49.8891	0.0000	No	0.0774	3870.0	125.0	3870.0	1
810386-5	20	51.4885	51.5732	51.5732	0.0000	No	0.0847	4235.0	125.0	4235.0	1
810386-6	20	68.3691	68.455	68.455	0.0000	No	0.0859	4295.0	125.0	4295.0	1
810386-6D	20	50.6353	50.7179	50.7179	0.0000	No	0.0826	4130.0	125.0	4130.0	1
LCS	100	67.9747	68.0245	68.0245	0.0000	No	0.0498	498.0	25.0	498.0	1
810386-7	50	78.3938	78.4847	78.4846	0.0001	No	0.0908	1816.0	50.0	1816.0	1
810386-8	20	74.4607	74.543	74.543	0.0000	No	0.0823	4115.0	125.0	4115.0	1
810386-9	20	51.0438	51.1268	51.1264	0.0004	No	0.0826	4130.0	125.0	4130.0	1
810386-10	20	47.4291	47.5141	47.5141	0.0000	No	0.0850	4250.0	125.0	4250.0	1
810386-11	20	49.1752	49.2599	49.2599	0.0000	No	0.0847	4235.0	125.0	4235.0	1
810386-12	20	79.0614	79.145	79.1446	0.0004	No	0.0832	4160.0	125.0	4160.0	1
810386-13	50	77.9079	77.9598	77.9598	0.0000	No	0.0519	1038.0	50.0	1038.0	1
810386-14	50	79.5038	79.5558	79.5554	0.0004	No	0.0516	1032.0	50.0	1032.0	1
810342-1	100	79.4495	79.5002	79.5002	0.0000	No	0.0507	507.0	25.0	507.0	1
810342-2	100	77.4910	77.5413	77.5413	0.0000	No	0.0503	503.0	25.0	503.0	1
810342-2D	100	80.5818	80.6328	80.6328	0.0000	No	0.0510	510.0	25.0	510.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

$$\left(\frac{A-B}{C} \right) \times 10^6$$

Where:

A = weight of dish + residue in grams.
 B = weight of dish in grams.
 C = mL of sample filtered.

RL = reporting limit.
 ND = not detected (below the reporting limit)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	498	500	99.6%	90-110%	Yes
LCS2					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
810386-6	0.0859	0.0826	2.0%	≤5%	Yes
810342-1	0.0503	0.051	0.7%	5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B|}{C} \times 100$$

$$\text{where } C = \frac{A+B}{2}$$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Maksim G.

Reviewer Printed Name

Reviewer Signature

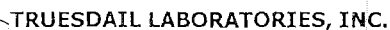
Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS131
Date Analyzed: 10/16/13

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
810335-1	740	0.63	481	0.98
810335-2	550	0.60	357.5	0.92
810335-3	750	0.63	487.5	0.96
810335-4	740	0.57	481	0.88
810386-1	6360	0.65	4134	0.99
810386-2	6470	0.66	4205.5	1.02
810386-3	6530	0.66	4244.5	1.02
810386-4	5190	0.75	3373.5	1.15
810386-5	6710	0.63	4361.5	0.97
810386-6	6650	0.65	4322.5	0.99
810386-6D	6650	0.62	4322.5	0.96
LCS				
810386-7	2880	0.63	1872	0.97
810386-8	6260	0.66	4069	1.01
810386-9	6460	0.64	4199	0.98
810386-10	6660	0.64	4329	0.98
810386-11	6570	0.64	4270.5	0.99
810386-12	6450	0.64	4192.5	0.99
810386-13	1760	0.59	1144	0.91
810386-14	1740	0.59	1131	0.91
810342-1	929	0.55	603.85	0.84
810342-2	922	0.55	599.3	0.84
810342-2D	922	0.55	599.3	0.85

Handwritten signature



Calculations

Date of Analysis: 10/17/13

Calculations as follows:

T or P =

$$\text{Low Alkalinity: as mg/L CaCO}_3 = \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$$

Where:

Where:

B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard

/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Blank Summary

T = Total Alkalinity, mg CaCO₃/L

T = Total Alkalinity, mg CaCO₃/L

P = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

Laboratory Control Sample (LCS/LCSD) Summary

Duplicate Determination Difference Summary

Duplicate Determination Difference Summary

Sample Matrix Spike (MS/MSD) Summary

KIM

Analyst Printed Name
022213C x/s

Analyst Signature

Maksim G.

Reviewer Printed Name _____

Reviewer Signature _____

Rec'd 10/10/13

S 810386

CH2MHILL

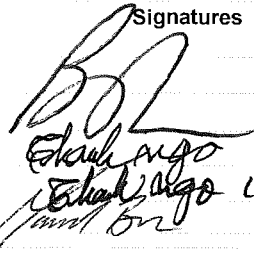
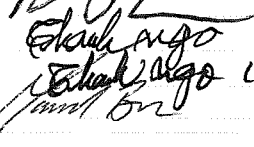
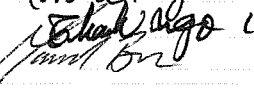
CHAIN OF CUSTODY RECORD

810386

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Page 1 OF 2

Project Name PG&E Topock Location Topock Project Manager Jay Piper Sample Manager Shawn Duffy Project Number 423575.MP.02.CM Task Order Project 2013-CMP-030 Turnaround Time 10 Days Shipping Date: 10/10/2013 COC Number: 3				Container: 250 ml Poly (NH4)2S O4/NH4O H, 4°C	500 ml Poly HNO3, 4°C	500 ml Poly HNO3, 4°C	500 ml Poly HNO3, 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly H2SO4, pH<2, 4°C	<div style="border: 2px solid black; padding: 10px; text-align: center;"> ALERT !! Level III QC </div> <p>For Sample Conditions See Form Attached</p>	Number of Containers	COMMENTS
Preservatives:	Filtered: Field	Holding Time: 28	Field	Field	NA	Field	NA	NA	NA	NA	NA					
Matrix:	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (E200.7-E200.8) Field Filtered Cr,Mo,Na	Metals (60108) Total Fe	Metals (E200series) Field Filtered ASbAsBaBeBCaCdCoCrCuFePb	Specific Conductance (E120.1)	Anions (E300.0) Cl, F, SO4	Turbidity (SM2130)	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)			
1	CW-04M-030	10/9/2013	8:10	Water	X		X	X	X	X	X	X	X		5	
2	OW-01D-030	10/9/2013	10:14	Water	X	X		X	X	X	X				3	
3	OW-01M-030	10/9/2013	10:42	Water	X	X		X	X	X	X				3	
4	OW-01S-030	10/9/2013	11:35	Water	X	X		X	X	X	X				3	
5	OW-05D-030	10/9/2013	13:56	Water	X	X		X	X	X	X				3	
6	OW-05M-030	10/9/2013	14:44	Water	X	X		X	X	X	X				3	PH=2
7	OW-05S-030	10/9/2013	15:12	Water	X	X		X	X	X	X				3	Metals
8	OW-70-030	10/9/2013	10:00	Water	X		X	X	X	X	X	X	X		5	
9	CW-01D-030	10/10/2013	8:25	Water	X		X	X	X	X	X	X	X		5	
10	CW-01M-030	10/10/2013	8:58	Water	X		X	X	X	X	X	X	X		5	
11	OW-02D-030	10/10/2013	10:36	Water	X		X	X	X	X	X	X	X		5	
12	OW-02M-030	10/10/2013	11:13	Water	X		X	X	X	X	X	X	X		5	
13	OW-02S-030	10/10/2013	12:04	Water	X	X		X	X	X	X				3	
14	OW-71-030	10/10/2013	7:00	Water	X	X		X	X	X	X				3	

Approved by Sampled by Relinquished by Received by Relinquished by Received by	Signatures   	Date/Time 10-10-13 1645 10-10-13 1930 10-11-13 0000 10/11/13 0000	Shipping Details Method of Shipment: courier On Ice: yes / no Airbill No: Lab Name: Truesdail Laboratories, Inc. Lab Phone: (714) 730-6239
---	--	---	---

ATTN:

Sample Custody

Special Instructions:

Oct 7-9, 2013

Report Copy to

 Shawn Duffy
 (530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

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Page 2 OF 2

Project Name PG&E Topock		Container:	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly		Number of Containers	COMMENTS
Location Topock		Preservatives:	(NH4)2S O4/NH4O H, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C			
Project Manager Jay Piper		Filtered:	Field	Field	NA	Field	NA	NA	NA	NA	NA			
Sample Manager Shawn Duffy		Holding Time:	28	180	180	180	2	2	2	2	2			
Project Number 423575.MP.02.CM			Cr6 (E218.6) Field Filtered	Metals (E200.7-E200.8) Field Filtered Cr,Mn,Na	Metals (6010B) Total Fe	Metals (E200series) Field Filtered AlSbAsBaBeBCaCdCoCrCuFePb	Specific Conductance (E120.1)	Anions (E300.0) Cl, F, SO4	Turbidity (SM2130)	TDS (SM2540C)	Alkalinity (SM12320B)			
Task Order														
Project 2013-CMP-030														
Turnaround Time 10 Days														
Shipping Date: 10/10/2013														
COC Number: 3														
DATE	TIME	MATRIX												
OW-81-030	10/10/2013 7:23	Water	X										1	
OW-82-030	10/10/2013 12:40	Water	X										1	
TOTAL NUMBER OF CONTAINERS												56		

Approved by

Sampled by

Relinquished by

Received by

Relinquished by

Received by

Signatures

Date/Time

Shipping Details

Method of Shipment: courier

On Ice: yes / no

Airbill No:

Lab Name: Truesdail Laboratories, Inc.

Lab Phone: (714) 73C 6239

ATTN:

Sample Custody

Special Instructions:

Oct 7-9, 2013

Report Copy to

Shawn Duffy
(530) 229-3303

Subject: RE: CMP COC Question
From: <Shawn.Duffy@CH2M.com>
Date: Mon, 4 Nov 2013 20:21:50 +0000
To: <seanc@truesdail.com>

Hi Sean,

The metals list should be:

Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl,
V, Zn, K, Na

Shawn

-----Original Message-----

From: Sean Condon [<mailto:seanc@truesdail.com>]
Sent: Sunday, November 03, 2013 12:15 PM
To: Duffy, Shawn/RDD
Subject: CMP COC Question

Hi Shawn,

It looks like there might be some metals missing from the metals lists on the two
CMP COCs (see attached).

Thank you,

Sean Condon
Project Manager
Truesdail Laboratories, Inc.
Phone: (714) 730-6239
Fax: (714) 730-6462

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
8/11/13	810385-9	9.5	N/A	N/A	N/A	TM
	-10					
↓	↓ -11	↓	↓	↓	↓	↓
8/11/13	810386-1	9.5	N/A	N/A	N/A	TM
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
	-15					
↓	↓ -16	↓	↓	↓	↓	↓
NE 10/11/13	810412-1	9.5 N/A NE	N/A	N/A	N/A	NE
10/11/13	-2					
	-3					
	-4					
	-5					
	-6					
	↓ -7					
	810413-1					
	-2					
	-3					
	-4					
↓	↓ -5	↓	↓	↓	↓	↓

10/22/13

18/11/13



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
810354(1-8)	<1	<2	10/10/13	ES	YES			
810345-10-712	<1	>2	10/10/13	PC	NO	16:45		
810322	<1	>2	↓	↓	↓	↓		
810342-112	>1	<2	↓	↓	yes			
810324	<1	<2	↓	↓	↓			
810355(1-15)	<1	<2	10/11/13	ES	yes			
810356(1-12)	↓	↓	↓	↓	↓			
810365(1-3)	↓	↓	↓	↓	↓			
810382(1-6)	↓	↓	↓	↓	↓			
810378-4	<1	<2	10/11/13	PC	yes			
810374	>1	<2	↓	↓	↓			
810373-1-3	>1	<2	↓	↓	↓			
810370-1-3	>1	<2	↓	↓	↓			
810375	>1	<2	↓	↓	↓			
810368-1-3	<1	>2	↓	↓	NO	16:00		
810371-17,24	<1	>2	↓	↓	↓	↓		
810391	>1	<2	↓	↓	yes			
810367	<1	<2	↓	↓	↓			
810380(1,3-10)	<1	<2	10/14/13	ES	yes			
810414(1-4,6)	↓	↓	↓	↓	↓			
810407(1-2)	>1	<2	10/14/13	ES	yes			
810419	↓	↓	↓	↓	↓			
810420	↓	↓	↓	↓	↓			
810421(1-4)	↓	↓	↓	↓	↓			
810424(1-2)	↓	↓	↓	↓	↓			
810427	<1	↓	↓	↓	↓			
810438-1-4	<1	<2	10/15/13	PC	yes			
810439-1-73	↓	↓	↓	↓	↓			
810384(1-2,4-11)	<1	<2	10/15/13	ES	yes			
810385(1-10)	↓	↓	↓	↓	↓			
810386(1-14)	↓	↓	↓	↓	↓			
810403-2-5,10,15,18	↓	↓	↓	↓	↓			
810471(1-6)	<1	<2	10/16/13	ES	yes			
810448-1,2,4	<1	>2	10/16/13	PC	NO	16:10		
810447-1-74	<1	>2	↓	↓	↓	↓		
810478	<1	<2	↓	↓	yes			
810453	<1	<2	↓	↓	↓			
810412(1,3-7)	<1	<2	10/17/13	ES	yes			
810413(2-6)	↓	↓	↓	↓	↓			
810415(1-7)	↓	↓	↓	↓	↓			
810416(1-3,7)	↓	↓	↓	↓	↓			
810417(1-4,6)	↓	↓	↓	↓	↓			
810436(1-3)	↓	↓	↓	↓	↓			
810437(1-3)	↓	↓	↓	↓	↓			

Notes:

1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.
2. All Total Recoverable Analytes must be pH adjusted and digested.
3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 810386

Date Delivered: 10 / 11 / 13 Time: 12:00 pm By: ☐ Mail ☐ Field Service ☒ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☒ No ☐ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☒ No ☐ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.5 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☒ Truesdail ☐ Client ☒ Yes ☐ No ☐ N/A
12. Were samples pH checked? pH = see C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: Juda



CH2MHILL

Applied Sciences Laboratory

ANALYTICAL REPORT

For:

PGE Topock - 2013-CMP-030

ASL Report #: M2999

Project ID: 423575.MP.02.CM

Attn: Jay Piper

cc:

Data Center/RDD

Authorized and Released By:

Kathy McKinley

Laboratory Project Manager

Kathy McKinley

(541) 758-0235 ext.23144

October 28, 2013

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.



Accredited in accordance with NELAP:
Oregon (100022)
Arizona (0771)
Louisiana (05031)

ASL Report #: M2999

Sample Receipt Comments

We certify that the test results meet all NELAP requirements.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
M299901	CW-02D-030	10/08/13 11:59	10/15/13
M299902	CW-02M-030	10/08/13 13:24	10/15/13
M299903	CW-03D-030	10/08/13 09:12	10/15/13
M299904	CW-03M-030	10/08/13 10:12	10/15/13
M299905	CW-04D-030	10/08/13 15:02	10/15/13
M299906	CW-04M-030	10/09/13 08:10	10/15/13
M299907	OW-01D-030	10/09/13 10:14	10/15/13
M299908	OW-01M-030	10/09/13 10:42	10/15/13
M299909	OW-01S-030	10/09/13 11:35	10/15/13
M299910	OW-05D-030	10/09/13 13:56	10/15/13
M299911	OW-05M-030	10/09/13 14:44	10/15/13
M299912	OW-05S-030	10/09/13 15:12	10/15/13
M299913	OW-70-030	10/09/13 10:00	10/15/13
M299914	CW-01D-030	10/10/13 08:25	10/15/13
M299915	CW-01M-030	10/10/13 08:58	10/15/13
M299916	OW-02D-030	10/10/13 10:36	10/15/13
M299917	OW-02M-030	10/10/13 11:13	10/15/13
M299918	OW-02S-030	10/10/13 12:04	10/15/13
M299919	OW-71-030	10/10/13 07:00	10/15/13

CASE NARRATIVE GENERAL CHEMISTRY ANALYSIS

Lab Name: CH2M HILL ASL

ASL SDG#: M2999

Project: PGE Topock

Project #: 423575.MP.02.CM

With the exceptions noted as flags, footnotes, or detailed in the section below; standard operating procedures were followed in the analysis of the samples and no problems were encountered or anomalies observed.

All laboratory quality control samples were within established control limits, with any exceptions noted below, or in the associated QC summary forms.

Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. For diluted samples, the reporting limits are adjusted for the dilution required.

Calculations are performed before rounding to minimize errors in calculated values.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the section below, or in the sample receipt documentation.

Method(s):
E353.2

Date Received: 10/15/13

Date Received: 10/15/13

[illegible]

CW-03M-030

Lab Name: CH2M HILL ASL

Lab Sample ID: M299904

Date Received: 10/15/13

[illegible]

CW-04D-030

Lab Name: CH2M HILL ASL

Lab Sample ID: M299905

[illegible]

Date Received: 10/15/13

[illegible]

Date Received: 10/15/13

[illegible]

Date Received: 10/15/13

[illegible]

OW-01S-030

Lab Name: CH2M HILL ASL

Lab Sample ID: M299909

[illegible]

OW-05D-030

Lab Name: CH2M HILL ASL

Lab Sample ID: M299910

Date Received: 10/15/13

[illegible]

CW-01M-030

Lab Name: CH2M HILL ASL

Lab Sample ID: M299915

[illegible]

Date Received: 10/15/13

[illegible]

OW-02S-030

Lab Name: CH2M HILL ASL

Lab Sample ID: M299918

[illegible]

WB14-101613

Lab Name: CH2M HILL ASL

Lab Sample ID: WB14-101613

[illegible]

WB15-101613

Lab Name: CH2M HILL ASL

Lab Sample ID: WB15-101613

Date Received: / /

[illegible]

WB17-101613

Lab Name: CH2M HILL ASL

Lab Sample ID: WB17-101613

Date Received: / /

[illegible]

Concentration Units: MG/L

[illegible]

Comments:

Concentration Units: MG/L

[illegible]

Comments:

48°C TRK # 7969 0372 4602

m2999
Page 56 of 60

CH2MHILL

CHAIN OF CUSTODY RECORD

10/10/2013 4:07:09 PM

Page 1 OF 2

Project Name PG&E Topock			Container:	125 ml Poly																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Number of Containers

COMMENTS

Approved by

Sampled by

Relinquished by

Received by

Relinquished by

Received by

Date/Time

Shipping Details

Method of Shipment

On Ice: yes / no

Airbill No:

Lab Name:

Lab Phone:

ATTN:

Special Instructions:

Sample Receipt

Report Copy to

CH2MHILL

CHAIN OF CUSTODY RECORD

10/10/2013 4:07:09 PM

Page 2 OF 2

Project Name PG&E Topock Location Topock Project Manager Jay Piper Sample Manager Shawn Duffy Project Number 423575.MP.02.CM Task Order Project 2013-CMP-030 Turnaround Time 10 Days Shipping Date: 10/14/2013 COC Number: 2				Containers: 125 ml Poly Preservatives: H2SO4, pH<2, 4°C Filtered: NA Holding Time: 28	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS																													
<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>MATRIX</th> <th></th> </tr> </thead> <tbody> <tr> <td>CW-01M-030</td> <td>10/10/2013</td> <td>8:58</td> <td>Water</td> </tr> <tr> <td>OW-02D-030</td> <td>10/10/2013</td> <td>10:36</td> <td>Water</td> </tr> <tr> <td>OW-02M-030</td> <td>10/10/2013</td> <td>11:13</td> <td>Water</td> </tr> <tr> <td>OW-02S-030</td> <td>10/10/2013</td> <td>12:04</td> <td>Water</td> </tr> <tr> <td>OW-71-030</td> <td>10/10/2013</td> <td>7:00</td> <td>Water</td> </tr> <tr> <td colspan="4" style="text-align: right;">TOTAL NUMBER OF CONTAINERS</td> </tr> </tbody> </table>				DATE					TIME	MATRIX		CW-01M-030	10/10/2013	8:58	Water	OW-02D-030	10/10/2013	10:36	Water	OW-02M-030	10/10/2013	11:13	Water	OW-02S-030	10/10/2013	12:04	Water	OW-71-030	10/10/2013	7:00	Water	TOTAL NUMBER OF CONTAINERS				1	15
DATE	TIME	MATRIX																																			
CW-01M-030	10/10/2013	8:58	Water																																		
OW-02D-030	10/10/2013	10:36	Water																																		
OW-02M-030	10/10/2013	11:13	Water																																		
OW-02S-030	10/10/2013	12:04	Water																																		
OW-71-030	10/10/2013	7:00	Water																																		
TOTAL NUMBER OF CONTAINERS																																					
				1	16																																
				1	17																																
				1	18																																
				1	19																																
				19																																	

Approved by
 Sampled by
 Relinquished by
 Received by
 Relinquished by
 Received by

Signatures
 Date/Time
 10-14-13
 0830

Shipping Details
 Method of Shipment:
 On Ice: yes / no
 Airbill No:
 Lab Name:
 Lab Phone:

Special Instructions
 ATTN:
 Sample Custody
 Report Copy to



SDG ID: _____ Date Received: 10/15/13
 Client/Project: Pig & Tapack Checked By: CT
 Packing Material: Ice Blue Ice Box Bubble Wrap HD (circle all that apply) Checked By: CC
 Shipping ID: _____ -- or -- On File COC HD USPS (circle one)

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Were custody seals intact and on the outside of the cooler?		X	
Radiological Screening for DoD	✓		
Temp OK? (<6C) Therm ID TH173 Exp. 11/13 4-8 °C		X	
Was a Chain of Custody (CoC) Provided?		X	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did sample labels agree with COC? No, document in SRER		X	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		X	
Were the sample containers in good condition (broken or leaking)?		X	
Was enough sample volume provided for analysis? No, document in SRER		X	
Containers supplied by ASL?		X	

Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
All VOCs free of air bubbles? No, document on SRER	x		
pH of all samples met criteria on receipt? If "No", preserve and document below or on SRER		✓	
Dissolved/Soluble metals filtered in the field?	x		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	x		

[illegible]



Sample Receipt Exception Report

Sample Batch Number: M2999

Client/Project

Topock

The following exceptions were noted:

	Comments (write number of exception description and the impacted sample numbers)
1. No custody seal as required by project	Client requested method SM4500 ASL will report using E353.2.
2. No chain-of-custody provided	
3. Analysis, description, date of collection not provided	
4. Samples broken or leaking on receipt.	
5. Temperature of samples inappropriate for analysis requested	
6. Container inappropriate for analysis requested	
7. Inadequate sample volume.	
8. Preservation inappropriate for analysis requested	
9. Samples received out of holding time for analysis requested	
10. Discrepancies between COC form and container labels.	
11. Other.	

ACTION TAKEN:

Originator: Carmen Cole

Date: 10/15/213

Client was notified on:

(Date/Time)

Client Contact:

Client Services:

Appendix B
Field Data Sheets, Second Half 2013

Project Name PG&E Topock CMP

Job Number 423575.MP.02.CM

Sampling Event 2013-CMP-030

Date 10-10-13

Sampler JR/RP Field Team 1 Field Conditions

Page 1 of 1

Well/Sample Number CW-01D-030

QC Sample ID NA

QC Sample Time

Purge Start Time 09:35 07:45

Purge Method: 3/10 Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gal)(L) 105.98 Purge Rate (gpm)(mLpm) 3

Pump Make and Model G#2

Water Level	Time	21 gal. Vol. Purged gallons / liters	pH**	Conductivity μ S/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
109.34	0752	21	6.71	7412	1	7.74	28.64			196	349 Hz Pump jumped to 313
109.20	0759	42	7.03	7412	1	7.95	28.47			140	369 Hz 2.7 gpm.
109.20	08:03	63	7.23	7422	1	7.94	29.00			145	391 Hz
109.20	08:16	84	7.35	7419	1	7.93	29.04			154	
109.2	08:24	105	7.33	7427	1	7.96	29.13			155	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/8/2013)	7.45	7601	1	8.81	28.44	0.49		176
Are measurements consistent with previous?	Y	Y	Y	Y	Y			Y

Sample Time 08:25 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 92.74 109.10

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (300.2)

SWH (Standing Water Height) = WD-Initial Depth 207.46 91.1

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .7

One Casing Volume = D*SWH 35.2632 32.487

Three Casing Volumes = 705.8046 97.461

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

WQ METER MAKE and SERIAL NUMBER: Insitu 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
0735		Time	Final DTW
0922	92.74		Time of Reinstallation
Comments: 109.10			

Project Name PG&E Topock CMP
 Job Number 423575.MP.02.CM
 Sampler _____ Field Team 1 Field Conditions _____

Sampling Event 2013-CMP-030

Date 10-10-13

Page 1 of 1

✓
BEC

Well/Sample Number CW-01M-030

QC Sample ID NA

QC Sample Time _____

Purge Start Time 0836

Purge Method: 3Vol

Ded. Pump Tube

Flow Cell (Y) / N

Min. Purge Volume (gal) (L) 42

Purge Rate (gpm) (mLpm) 2

Pump Make and Model GH 3

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity µS /cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
109.10	0840	8	7.43	7514	1	9.52	29.04	—	—	183	317 Hz
109.10	0841	16	7.46	7515	1	9.53	29.13	—	—	184	
109.10	0848	24	7.47	7516	1	9.56	29.18	—	—	184	
109.10	0852	30	7.48	7517	1	9.50	29.12	—	—	185	
109.10	0856	40	7.48	7512	1	9.51	29.14	—	—	186	

Parameter Compliance Criteria

6.2<pH<9.2

1.0800

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria

+/- 0.1
pH units

+/- 3%

+/- 10% NTU
units
when >10 NTUs+/- 0.3
mg/L

+/- 2°C

NA

NA

+/- 10 mV

Did last three Parameters Stabilize prior to sampling?

Y

Y

Y

Y

Y

Y

Y

Previous Field measurement (4/8/2013)

7.43

7582

1

9.5

29.35

0.49

168

Are measurements consistent with previous?

Y

Y

Y

Y

Y

Y

Sample Time 0858

Sample Location:

pump tubing

well port

spigot

bailer

other

Comments:

Initial Depth to Water (ft BTOC): 109.1

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (190)

SWH (Standing Water Height) = WD-Initial Depth 80.9

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) 1.17

One Casing Volume = D*SWH 13.753

Three Casing Volumes = 41.259

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

WQ METER MAKE and SERIAL NUMBER: Insite 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Measure Point: Well TOC Steel Casing

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
08:02	109.01	Time	Final DTW
Comments:		Time of Reinstallation NA	

Project Name PG&E Topock CMP

Sampling Event 2013-CMP-030

Job Number 423575.MP.02.CM

Date 10-8-13

Sampler JH/RP Field Team 1 Field Conditions Warm/Calm

Page 1 of 1

BCL

Well/Sample Number CW-02M-030

QC Sample ID NA

QC Sample Time NA

Purge Start Time 1250

Purge Method: 3Vol Ded. Pump Tube

Flow Cell: (Y) N

Min. Purge Volume (gal)/L 50 Purge Rate (gpm)/(mLpm) 2

Pump Make and Model G#3

Water Level	Time	Vol. Purged gallons/ liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
92.57	1307	34	7.43	7634	1	7.53	30.04	---	---	181	
92.57	1313	46	7.76	7507	1	7.56	30.03	---	---	182	
92.57	1316	52	7.76	7469	1	7.76	30.02	---	---	181	
92.57	1319	58	7.76	7453	1	7.76	30.03	---	---	179	
92.57	1322	64	7.76	7454	1	7.76	30.02	---	---	179	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/9/2013)	7.51	7582	1	7.98	30	0.49		158
Are measurements consistent with previous?	Y	Y	Y	Y	Y			higher

Sample Time 1324 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 92.50

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (202)

SWH (Standing Water Height) = WD-Initial Depth 109.5

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 18.615

Three Casing Volumes = 55.845

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

WQ METER MAKE and SERIAL NUMBER: Sinafa 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
11:38	92.50	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Job Number 423575.MP.02.CM

Sampling Event 2013-CMP-030

Date 10-8-17

Sampler _____ Field Team 1 Field Conditions _____

Page 1 of 1

BEC

Well/Sample Number CW-02D-030

QC Sample ID NA

QC Sample Time NA

Purge Start Time 11:17

Purge Method: 3101

Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gallons) 124

Purge Rate (gpm) (mLpm) 3

Pump Make and Model G#2

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity mS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
92.13	11:25	24	7.73	7567	1	6.49	29.97	---	---	94	
92.13	11:33	48	7.82	7531	1	6.92	30.53	---	---	36	
92.13	11:41	72	7.84	7578	1	6.94	30.64	---	---	105	
92.13	11:49	96	7.86	7532	1	6.93	30.78	---	---	108	
92.13	11:57	120	7.88	7582	1	6.94	30.98	---	---	101	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/9/2013)	7.66	7727	1	7.32	30.2	0.5		167 Typo
Are measurements consistent with previous?	Y	Y	Y	Y	Y			Y

Sample Time 11:59 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 92.03

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (355)

SWH (Standing Water Height) = WD-Initial Depth 242.97

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 41.30

Three Casing Volumes = 123.9147

Color: clear grey, yellow, brown, black, cloudy, green

Odor: none sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC Steel Casing

WQ METER MAKE and SERIAL NUMBER: Insite 51034
WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
11:09	92.03	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Sampling Event 2013-CMP-030

Job Number 423575.MP.02.CM

Date 10-8-13

Sampler JR/RP Field Team 1 Field Conditions Warm/calm

Page 1 of 1

Well/Sample Number CW-03D-030

QC Sample ID NA

QC Sample Time NA

Purge Start Time 0826

Purge Method: 3.6l. Ded. Pump Tube

Flow Cell Y/N

Min. Purge Volume (gal)/(L) 135 Purge Rate (gpm)/(mLpm) 3

Pump Make and Model G#3

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity μ S/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
76.86	0835	27	7.50	7573	.3	6.94	30.34	---	---	201	
76.86	0844	54	7.61	7570	.5	6.90	30.40	---	---	186	
76.84	0853	81	7.64	7571	.3	6.92	30.48	---	---	188	
76.86	0858	108	7.70	7569	.3	6.91	30.50	---	---	187	
76.86	0911	135	7.69	7570	.3	6.91	30.50	---	---	189	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/9/2013)	7.72	7737	1	7.51	30.37	0.5		135
Are measurements consistent with previous?	Y	Y	Y	lower	Y			higher

Sample Time 0912 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 76.67

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (340)

SWH (Standing Water Height) = WD-Initial Depth 263.33

D (Volume as per diameter 2" = 0.17 4" = 0.66, 1" = 0.041 (2 in) .17

One Casing Volume = D*SWH 44.7661

Three Casing Volumes = 134.2983

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

WQ METER MAKE and SERIAL NUMBER: In Situ 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Measure Point: Well TOC		Steel Casing	
Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
		Time	Final DTW
08:15	76.67		
Comments:			

Project Name PG&E Topock CMP
 Job Number 423575.MP.02.CM
 Sampler R/RP Field Team 1 Field Conditions

Sampling Event 2013-CMP-030

Date 10-8-13Page 1 of 1✓
BECWell/Sample Number CW-03M-030QC Sample ID NAQC Sample Time NAPurge Start Time 0930Purge Method: 3/01Ded. Pump TubeFlow Cell (Y) NMin. Purge Volume (gal/L) 74Purge Rate (gpm/mLpm) 2Pump Make and Model G#2

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity mS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
77.56	0938	16	7.67	8558	1	5.46	29.10	—	—	198	301 Hz
77.56	0946	32	7.54	8763	.5	3.77	30.05	—	—	179	
77.56	0954	48	7.53	8681	.5	3.92	30.07	—	—	173	
77.56	1002	64	7.52	8668	.5	4.02	30.08	—	—	166	
77.56	1010	80	7.53	8667	.5	4.03	30.11	—	—	167	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/9/2013)	7.48	9055	1	3.44	30.07	0.58		143
Are measurements consistent with previous?	Y	Y	Y	Y	Y			higher

Sample Time 1012 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 77.35

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (222)

SWH (Standing Water Height) = WD-Initial Depth 144.65D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17One Casing Volume = D*SWH 24.59Three Casing Volumes = 73.77Color: clear, grey, yellow, brown, black, cloudy, greenOdor: none, sulphur, organic, otherSolids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, SandWQ METER MAKE and SERIAL NUMBER: Insite 51034WATER LEVEL METER SERIAL NUMBER: Solinst 210891Measure Point: Well TOC Steel Casing

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
0858	77.35	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Sampling Event 2013-CMP-030

Job Number 423575.MP.02.CM

Date 10-8-13

Sampler JK/EP Field Team 1 Field Conditions warm/moistly

Page 1 of 1

Well/Sample Number CW-04D-030

QC Sample ID NA

QC Sample Time NA

Purge Start Time 1418

Purge Method: 360l

Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gal)/(L) 124

Purge Rate (gpm)/(mLpm) 3

Pump Make and Model G#2

Water Level	Time g.m.	Vol. Purged gallons liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
61.30	1426	24	7.74	7571	1	7.68	30.46	---	---	165	291 Hz
61.30	1434	48	7.79	7699	1	8.29	30.82	---	---	132	
61.30	1442	72	7.81	7602	1	8.48	30.94	---	---	132	
61.30	1450	96	7.82	7602	1	8.39	30.98	---	---	124	
61.30	1458	120	7.82	7532	1	8.36	31.04	---	---	133	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/9/2013)	7.76	7687	1	8.64	30	0.5		128
Are measurements consistent with previous?	Y	Y	Y	Y	Y			higher

Sample Time 1502

Sample Location:

pump tubing

well port

spigot

bailer

other

Comments:

Initial Depth to Water (ft BTOW): 61.01

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (303)

SWH (Standing Water Height) = WD-Initial Depth 241.99

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 41.1383

Three Casing Volumes = 123.4149

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

WQ METER MAKE and SERIAL NUMBER: FASITA 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
1406	61.01	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Sampling Event 2013-CMP-030

Job Number 423575.MP.02.CM

Date 10-9-13

Sampler _____ Field Team 1 Field Conditions _____

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Well/Sample Number CW-04M-030

QC Sample ID OW-70-030

QC Sample Time 10:00 ✓

Purge Start Time 0737

Purge Method: 3/101 Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gal)(L) 56 Purge Rate (gpm)(mLpm) 2

Pump Make and Model G#2

Water Level	Time	Vol. Purged gallons/ liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
61.60	0743	12	6.70	792	1	6.70	29.60			221	
61.60	0749	24	6.82	7181	1	6.32	29.63			206	
61.60	0755	36	6.98	7174	1	6.29	29.65			195	
61.60	0803	48	6.99	7171	1	6.21	29.65			186	
61.60	0809	60	7.09	7171	1	6.32	29.68			190	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (4/9/2013)	7.64	7191	1	6.09	29.86	0.46		161
Are measurements consistent with previous?	Y	Y	Y	higher	Y			higher

Sample Time 0810 ✓ Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 61.24

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (169.8)

SWH (Standing Water Height) = WD-Initial Depth 108.56

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 18.4552

Three Casing Volumes = 55.3656

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC Steel Casing

WQ METER MAKE and SERIAL NUMBER: 46 Jasith 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
0711	61.24	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Sampling Event 2013-CMP-030

Job Number 423575.MP.02.CM

Date 10-9-13

Sampler ALP

Field Team 1

Field Conditions windy

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BEC

Well/Sample Number OW-01D-030

QC Sample ID NA

QC Sample Time

Purge Start Time 0935

Purge Method: 3 vol

Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gal/L) 10.94

Purge Rate (gpm)/(mLpm) 3

Pump Make and Model G#2

Water Level	Time	Vol. Purged (gallons) liters	pH**	Conductivity MS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
96.60	0942	21	7.40	7333	6	6.47	28.61	---	117	353 Hz	
97.50	0952	42	7.43	7331	3	6.77	28.87	---	132		Charged Hz to 395 lost a little flow
97.60	1002	63.67	7.46	7331	1	6.89	28.88	---	143		Being Parameters By Gallons. 10 min
97.60	1007	84	7.47	7333	1	6.94	28.90	---	147		2.75 Flow Rate.
97.60	1018	105.94	7.47	7328	1	6.98	28.89	---	150		
Parameter Compliance Criteria			6.2 < pH < 9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (10/16/2012)	7.81	7277	0.9	7.6	27.8	0.47		56.4
Are measurements consistent with previous?	Y	Y	Y	Y	Y			higher

Sample Time 10:14 Sample Location: pump tubing, well port, spigot, bailer, other

Comments:

Initial Depth to Water (ft BTOC): 92.74

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (277)

SWH (Standing Water Height) = WD-Initial Depth 134.26

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 31.38

Three Casing Volumes = 93.97

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC

Steel Casing

WQ METER MAKE and SERIAL NUMBER: Instra 57034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
0928	92.74	Time	Final DTW
Comments:		Time of Reinstallation	

Initial Depth to Water (ft BTOC):	93.18		WQ METER MAKE and SERIAL NUMBER:	
Field measured confirmation of Well Depth (ft btoc):		Measure Point: (Well TOC)	Steel Casing	WATER LEVEL METER SERIAL NUMBER:
WD (Well Depth - from database) ft btoc	(185.8)	If Transducer		
SWH (Standing Water Height) = WD-Initial Depth	92.62	Initial DTW / Before Removal	Approx. 5 min After Reinstallation	Time of Removal
D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17		Time	Initial DTW	Time of Reinstallation
One Casing Volume = D*SWH	15.7454	0936	93.18	/
Three Casing Volumes =	47.2362	Comments:		
Color: (clear) grey, yellow, brown, black, cloudy, green		Odor: (none) sulphur, organic, other	Solids: (Trace) Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand	

Project Name PG&E Topock CMP
 Job Number 423575.MP.02.CM
 Sampler RP/JS Field Team 1 Field Conditions

Sampling Event 2013-CMP-030

Date 10-9-13Page 1 of 1Well/Sample Number OW-01S-030QC Sample ID NAQC Sample Time NAPurge Start Time 11:12Purge Method: 3 Vol Ded. Pump TubeFlow Cell: Y / NMin. Purge Volume (gal)/(l) 11 Purge Rate (gpm)(mLpm) 1Pump Make and Model G#2

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
93.47	11:14	2	7.40	7325	1	7.15	24.70	---	187		H ₂ 255
93.47	11:16	4	7.54	6564	1	7.37	27.73	---	191		
93.47	11:18	6	7.49	6431	1	7.29	28.28	---	189		
93.47	11:20	8	7.36	6145	1	7.06	28.69	---	184		
93.47	11:22	10	7.33	6134	1	7.05	28.70	---	184		
93.47	11:24	12	7.32	6129	1	7.05	28.72	---	183		
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			X
Previous Field measurement (4/8/2013)	7.01	6325	2	7.92	29.04	0.41		157
Are measurements consistent with previous?	Y	Y	Y	lower	Y			higher

Sample Time 11:35 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 93.47

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (113.5)

SWH (Standing Water Height) = WD-Initial Depth 20.03

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 3.4051

Three Casing Volumes = 10.2153

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC Steel Casing

WQ METER MAKE and SERIAL NUMBER: Insite 51034

WATER LEVEL METER SERIAL NUMBER: Silinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
<u>10:54</u>	<u>93.47</u>	<u>11:39</u>	<u>93.47</u>
Comments:		Time of Reinstallation	<u>10:57</u>
			<u>11:34</u>

Project Name PG&E Topock CMP

Job Number 423575.MP.02.CM

Sampling Event 2013-CMP-030

Date 10-10-13

Sampler JL/RF Field Team 1 Field Conditions Windy

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Well/Sample Number OW-02D-030

QC Sample ID NA

QC Sample Time

Purge Start Time 0930

Purge Method: 3 Vol Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gal)(L) 127 Purge Rate (gpm)(mLpm) 2 Pump Make and Model G#3

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity uS S/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
91.55	0943	26	7.49	7472	1	8.66	26.51	---	197		H2 261
91.60	0956	58	7.67	7455	1	7.59	29.22	---	190		
91.60	1009	78	7.46	7483	1	7.50	29.22	---	52		Changed to Insitu 50619
91.60	1022	104	7.47	7405	1	7.46	29.20	---	54		
91.60	1035	130	7.43	7392	1	7.45	29.22	---	56		
Parameter Compliance Criteria			6.2 < pH < 9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (10/18/2012)	8.01	7181	0.2	6.4	29.56	0.46		48.4
Are measurements consistent with previous?	Y	Y	Y	Y	Y			Y

Sample Time 10:36 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 91.35

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (340)

SWH (Standing Water Height) = WD-Initial Depth 248.65

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 42.2705

Three Casing Volumes = 126.8115

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC Steel Casing

WQ METER MAKE and SERIAL NUMBER: Insitu 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
0920	91.35	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Job Number 423575.MP.02.CM

Sampling Event 2013-CMP-030

Date 10-10-13

Sampler SK/PP Field Team 1 Field Conditions Windy

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Well/Sample Number OW-02M-030

QC Sample ID NA

QC Sample Time

Purge Start Time 1041

Purge Method: 3Vol Ded. Pump Tube

Flow Cell (Y) / N

Min. Purge Volume (gal/L) 61 Purge Rate (gpm)(mLpm) 2

Pump Make and Model G#2

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
91.62	10:47	12	7.61	7297	1	7.34	29.31	---	---	135	H2 311
91.62	10:53	24	7.61	7296	1	7.59	29.47	---	---	135	
91.62	10:59	36	7.62	7292	1	7.63	29.42	---	---	140	
91.62	11:05	48	7.62	7284	1	7.64	29.33	---	---	145	
91.62	11:11	60	7.63	7277	1	7.63	29.35	---	---	145	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (10/18/2012)	7.89	7154	1	7.67	29.63	0.46		47
Are measurements consistent with previous?	Y	Y	Y	Y	Y			Higher

Sample Time 11:13 Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 91.38

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (210.3)

SWH (Standing Water Height) = WD-Initial Depth 118.92

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 20.2164

Three Casing Volumes = 60.6492

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC Steel Casing

WQ METER MAKE and SERIAL NUMBER: Insite 50618

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
10:00	91.38	Time	Final DTW
Comments:		Time of Reinstallation	

Project Name PG&E Topock CMP

Job Number 423575.MP.02.CM

Sampling Event 2013-CMP-030

Date 10-9-13

Sampler JR/RP Field Team 1 Field Conditions Windy

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Well/Sample Number OW-05D-030

QC Sample ID NA

QC Sample Time

Purge Start Time 1300

Purge Method: 3 Vol

Ded. Pump Tube

Flow Cell (Y) N

Min. Purge Volume (gal)(L) 131

Purge Rate (gpm)(mLpm) 3

Pump Make and Model

G#2

Water Level	Time	Vol. Purged gallons / liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
95.70	1309	27	7.34	7306	1	5.22	28.55	---	156		H ₂ 309
95.20	1313	54.42	7.54	7667	1	6.39	29.54	---	110		changed H ₂ to 375 gpm changed to 2.4
95.20	1327	81.66	7.60	7661	1	6.39	29.54	---	136		
95.20	1336	108.90	7.60	7660	1	6.41	29.60	---	141		
95.20	1345	135.12	7.64	7656	1	6.42	29.58	---	146		
95.20	1354	139.2	7.64	7656	1	6.40	29.58	---	147		
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y	Y	Y	Y			Y
Previous Field measurement (10/18/2012)	7.98	7138	2	8.05	29.54	0.46		42.9
Are measurements consistent with previous?	Y	Y	Y	lower	Y			higher

Sample Time 1356 ✓ Sample Location: pump tubing well port spigot bailer other

Comments:

Initial Depth to Water (ft BTOC): 94.85

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (350)

SWH (Standing Water Height) = WD-Initial Depth 255.15

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 43.3755

Three Casing Volumes = 130.1265

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Measure Point: Well TOC Steel Casing

WQ METER MAKE and SERIAL NUMBER: Instr. 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Initial DTW / Before Removal		If Transducer			
		Approx. 5 min After Reinstallation		Time of Removal	1254
Time	Initial DTW	Time	Final DTW	Time of Reinstallation	1409
1254	94.85	1414	94.92		
Comments:					

Initial Depth to Water (ft BTOC): <u>94.77</u>	Measure Point: <u>Well TOC</u>	Steel Casing	WQ METER MAKE and SERIAL NUMBER: <u>Insite 51034</u>
Field measured confirmation of Well Depth (ft btoc):	WATER LEVEL METER SERIAL NUMBER: <u>Solinst 810891</u>		
WD (Well Depth - from database) ft btoc <u>(250.25)</u>	If Transducer		
SWH (Standing Water Height) = WD-Initial Depth <u>155.48</u>			
D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) <u>.17</u>	Initial DTW / Before Removal	Approx. 5 min After Reinstallation	
One Casing Volume = D*SWH <u>26.4316</u>	Time	Initial DTW	Time
Three Casing Volumes = <u>79.2948</u>	<u>1305</u>	<u>94.77</u>	<u>1502</u>
	Comments:	Final DTW	Time of Removal
		<u>94.28</u>	<u>1307</u>
			Time of Reinstallation
			<u>1449</u>

Color: clear, grey, yellow, brown, black, cloudy, green
Odor: none, sulphur, organic, other
Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

Project Name PG&E Topock CMP

Sampling Event 2013-CMP-030

Job Number 423575.MP.02.CM

Date 10-9-13

Sampler R/RP

Field Team 1

Field Conditions

Windy

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Well/Sample Number OW-05S-030

QC Sample ID NA

QC Sample Time

Purge Start Time 1458

Purge Method: 3rd

Ded. Pump Tube

Flow Cell: Y N

Min. Purge Volume (gal)/(L) 8

Purge Rate (gpm)/(mLpm) 1

Pump Make and Model

G#2

Water Level	Time 2 min	Vol. Purged gallons / liters	pH**	Conductivity µS/cm	Turbidity NTU	Diss. Oxygen mg/L	Temp. °C	Salinity %	TDS** g/L	Eh/ORP mv	Comments (See description below)
94.90	1500	2	7.96	4037	1	6.93	27.62	---	---	179	H2 253
94.90	1502	4	7.76	3718	1	6.79	28.59	---	---	171	
94.90	1504	6	7.66	3519	1	6.62	28.74	---	---	167	
94.90	1506	8	7.60	3493	1	6.63	28.72	---	---	165	
94.90	1508	10	7.57	3487	1	6.62	28.72	---	---	164	
Parameter Compliance Criteria			6.2<pH<9.2						1.0800		

**If pH or TDS is out of range check calibration, take to IM3 and check pH, SC-get second probe. If still out of range immediately contact B. Collom ((541) 740-3250). If B. Collom unavailable contact S. Duffy ((530) 510-2340). If S. Duffy unavailable contact J. Piper ((702) 953-1202 x36602 or (702) 525-1137). If J. Piper unavailable contact Christina Hong ((626) 703-4475 or (626) 297-5292).

Parameter Stabilization Criteria	+/- 0.1 pH units	+/- 3%	+/- 10% NTU units when >10 NTUs	+/- 0.3 mg/L	+/- 2°C	NA	NA	+/- 10 mV
Did last three Parameters Stabilize prior to sampling?	Y	Y		Y	Y			Y
Previous Field measurement (4/8/2013)	7.38	3542	1	6.64	29.15	0.23		138
Are measurements consistent with previous?	Y	Y		Y	Y			higher

Sample Time 1512

Sample Location:

pump tubing

well port

spigot

bailer

other

Comments:

Initial Depth to Water (ft BTOC):

94.85

Field measured confirmation of Well Depth (ft btoc):

WD (Well Depth - from database) ft btoc (110.3)

SWH (Standing Water Height) = WD-Initial Depth 15.45

D (Volume as per diameter) 2"= 0.17, 4"= 0.66, 1"=0.041 (2 in) .17

One Casing Volume = D*SWH 26.265

Three Casing Volumes = 7.8795

Color: clear, grey, yellow, brown, black, cloudy, green

Odor: none, sulphur, organic, other

Solids: Trace, Small Qu, Med Qu, Large Qu, Particulate, Silt, Sand

WQ METER MAKE and SERIAL NUMBER: In-situ 51034

WATER LEVEL METER SERIAL NUMBER: Solinst 210891

Measure Point: Well TOC

Steel Casing

Initial DTW / Before Removal		If Transducer	
Time	Initial DTW	Approx. 5 min After Reinstallation	Time of Removal
1450	94.85	1520	94.85
Comments:		Time of Reinstallation	15:15

Topock CMP Manual Water Level Snapshot

Personnel: B. Collopy / CHAM

WLI serial number: AGE 2005-013

Loc ID	Depth to Water (ft BTOC)	Date	Time	Comments
CW-1M	108.35	7-8-13	1036	
CW-1D	108.55		1038	
CW-2M	91.84		1043	
CW-2D	91.52		1045	
CW-3M	76.73		1048	
CW-3D	76.20		1050	
CW-4M	60.73		1101	
CW-4D	60.67		1103	
OW-1S	92.76		1110	
OW-1M	92.36		1112	
OW-1D	92.00		1114	
OW-2S	91.40		1116	
OW-2M	90.26		1118	
OW-2D	89.44 90.31		1127	
OW-5S	94.26		1121	
OW-5M	93.82		1123	
OW-5D	94.45		1125	

IM-3 Staff confirm that 7-6-13, 7-7-13, and 7-8-13 were normal operation days with no backwashing or plant down time prior to snapshot collection.

Topock CMP Manual Water Level SnapshotPersonnel: B. Collem / CHamWLI serial number: PGE 2005-01B

Loc ID	Depth to Water (ft BTOC)	Date	Time	Comments
CW-1M	109.04	10-21-13	1030	
CW-1D	109.14		1032	
CW-2M	92.60		1035	
CW-2D	92.19		1037	
CW-3M	77.50		1040	
CW-3D	76.89		1041	
CW-4M	61.40		1047	
CW-4D	61.26		1049	
OW-1S	93.51		1053	
OW-1M	93.28		1055	
OW-1D	92.96		1057	
OW-2S	92.17		1100	
OW-2M	91.42		1102	
OW-2D	91.43		1104	
OW-5S	94.97		1107	
OW-5M	93.89		1109	
OW-5D	94.72		1111	

IM-3 Staff confirm that 10-19-13, 10-20-13, and 10-21-13 were normal operation days with no backwashing or plant down time prior to snapshot collection.