Topock Project Executive Abstract

Document Title: Second Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Submitting Agency: DTSC

Final Document? ☒ Yes ☐ No

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PG&E

Priority Status: ☐ HIGH ☐ MED ☒ LOW
Is this time critical? ☐ Yes ☒ No

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☐ Other/Explain:

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What does this information pertain to?
☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)
☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)
☐ Corrective Measures Study (CMS)/Feasibility Study (FS)
☐ Corrective Measures Implementation (CMI)/Remedial Action
☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)
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Is this a Regulatory Requirement?
☒ Yes
☐ No
If no, why is the document needed?

What is the consequence of NOT doing this item? What is the consequence of DOING this item?
Report is required to be in compliance with DTSC requirements.

Other Justification/s:
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Brief Summary of attached document:

This quarterly report documents the monitoring activities and performance evaluation of the Interim Measure (IM) hydraulic containment system under the IM Performance Monitoring Program, the Groundwater Monitoring Program, and Surface Water Monitoring Program for the Topock Project. Hydraulic and chemical monitoring data were collected and used to evaluate IM hydraulic containment system performance based on a set of standards approved by DTSC. Key items included in this report are: (1) measured groundwater elevations and hydraulic gradient data at compliance well pairs that indicate the direction of groundwater flow is away from the Colorado River and towards the pumping centers onsite; (2) hexavalent chromium data for monitoring wells; (3) pumping rates and volumes from the IM extraction system; and (4) Groundwater Monitoring Program and Surface Water Monitoring Program activities and results.

Based on the data and evaluation presented in this report, the IM performance standard has been met for Second Quarter 2012, which includes the months of April, May, and June 2012. The average pumping rate for the IM extraction system over the second quarter 2012 was 127.2 gallons per minute, and an estimated 50.7 kilograms of chromium were removed.

Written by: Pacific Gas and Electric Company

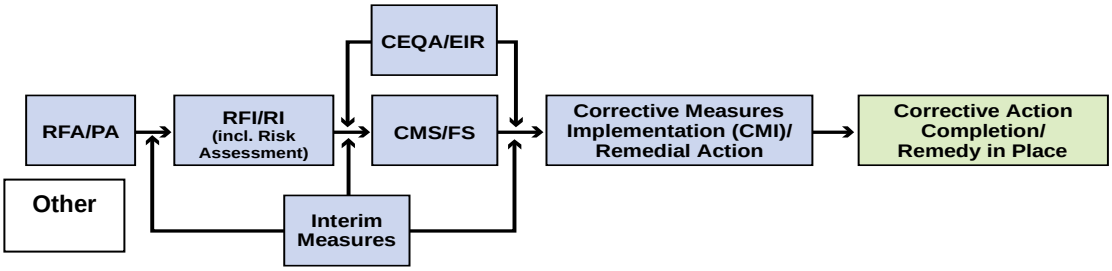
Recommendations:
This report is for information only.

How is this information related to the Final Remedy or Regulatory Requirements:
This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.

Other requirements of this information?
None.

Related Reports and Documents:

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



Legend

RFA/PA – RCRA Facility Assessment/Preliminary Assessment
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9

Pacific Gas and Electric Company

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August 15, 2012

Mr. Aaron Yue
Project Manager
California Department of Toxic Substances Control
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Cypress, CA 90630

Subject: *Second Quarter 2012 Interim Measures Performance and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*
(Document ID: PGE20120815A)

Dear Mr. Yue:

Enclosed is the *Second Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* for Pacific Gas and Electric Company's Interim Measures Performance Monitoring Program, the Groundwater Monitoring Program, and Surface Water Monitoring Program for the Topock project. This report presents Second Quarter 2012 (April 2012 through June 2012) performance monitoring results for the Interim Measures (IM) hydraulic containment system and summarizes the operations and performance evaluation for the reporting period. This report also presents groundwater and surface water monitoring activities, results, and analyses related to the Groundwater and Surface Water Monitoring programs during Second Quarter 2012.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) IM directive, dated February 14, 2005, and updates and modifications approved by DTSC in letters or emails, dated October 12, 2007, July 14, 2008, July 17, 2008, March 3, 2010, April 28, 2010, and July 23, 2010.

Please contact me at (805) 234-2257 if you have any questions on the combined monitoring report.

Sincerely,

Yvonne Meeks
Topock Project Manager

Enclosure
Second Quarter 2012 Interim Measures Performance and Site-wide Groundwater and Surface Water Monitoring Report

cc:

Chris Guerre/DTSC
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Final Report

Second Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station,

Needles, California

Document ID: PGE20120815A

Prepared for

California Environmental Protection Agency, Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

August 15, 2012

CH2MHILL®

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Oakland, CA 94612

Second Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

Interim Measures Performance Monitoring Program and Groundwater Monitoring Program, PG&E Topock Compressor Station, Needles, California

Prepared for

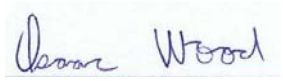
California Environmental Protection Agency, Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

August 15, 2012

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



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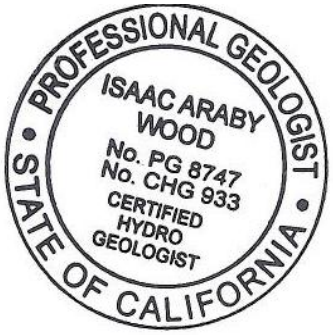

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Acronyms and Abbreviations

µg/L	micrograms per liter
BOR	United States Bureau of Reclamation
CA MCL	California maximum contaminant level
COPC	chemical of potential concern
Cr(VI)	hexavalent chromium
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
ft/ft	feet per foot
GMP	Groundwater Monitoring Program
gpm	gallons per minute
IM	Interim Measure
IMCP	Interim Measures Contingency Plan
IM-3	Interim Measure Number 3
mg/L	milligrams per liter
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
TDS	total dissolved solids

SECTION 1

Introduction

Pacific Gas and Electric Company (PG&E) is implementing Interim Measures (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The Topock Compressor Station is located in eastern San Bernardino County, 15 miles southeast of the city of Needles, California, as shown on Figure 1-1. (All figures are located at the end of the report.) This report presents the monitoring data from three key PG&E monitoring programs, which include:

- Site-wide Groundwater Monitoring Program (GMP).
- Site-wide Surface Water Monitoring Program (RMP).
- Interim Measure Number 3 (IM-3) Performance Monitoring Program (PMP) (data and evaluations).

This report presents the monitoring data from PG&E's GMP, RMP, and PMP collected from April 1, 2012 through June 30, 2012 (hereafter referred to as the reporting period). The data collected as part of the GMP and RMP are presented in Section 3.0. The data collected as part of the PMP are presented in Section 4.0. This combined PMP and GMP (including RMP) reporting format was approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in May 2009 (DTSC, 2009). On July 23, 2010, DTSC approved a new sampling event timing and reporting schedule for the PMP, GMP, and RMP programs (DTSC, 2010a). Table 1-1 shows the current reporting schedule.

1.1 Site-wide Groundwater and Surface Water Monitoring Program

The Topock GMP and RMP were initiated as part of a Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act facility investigation/remedial investigation groundwater investigation. These programs are being regulated under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency ID No. CAT080011729).

Groundwater monitoring data collected between July 1997 and October 2007 are presented in the *Revised Final RCRA Facility Investigation and Remedial Investigation Report, Volume 2 – Hydrogeological Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*, dated February 11, 2009 (CH2M HILL, 2009a). Select groundwater and surface water monitoring data from November 2007 through September 2008 are presented in the *Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum—Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California,* dated June 29, 2009 (CH2M HILL, 2009b).

For background (including well construction details) and descriptions of the current groundwater and surface water sampling, analyses, and monitoring programs, refer to PG&E's *Fourth Quarter 2011 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*, dated March 15, 2012 (CH2M HILL, 2012a).

In compliance with the requirements for Groundwater and Surface Water Monitoring Program directive of April 2005 (DTSC, 2005a), this document presents the Second Quarter 2012 GMP and RMP report for the IM monitoring activities from April 1, 2012 through June 30, 2012.

1.1.1 GMP and RMP Monitoring Networks

Figure 1-2 shows the current locations and sampling frequencies of the monitoring wells in the GMP. The complete GMP includes over 100 wells, which monitor the Alluvial Aquifer and the bedrock and consist of:

- One hundred fourteen monitoring wells in California (including bedrock wells equipped with packers and newly installed East Ravine/Topock Compressor Station Wells; excluding two dry wells and five wells currently sampled by ARCADIS under the Pilot Test Program).
- Eight monitoring wells in Arizona.
- Two water supply wells.
- Two active extraction wells.
- Five test wells.

Sampling frequencies for the GMP wells were updated beginning in First Quarter 2010 following the DTSC directive dated March 3, 2010 (DTSC, 2010b). Figure 1-2 shows these updated frequencies. Sampling frequencies for the Arizona monitoring wells were updated following the April 23, 2010 approval from the Arizona Department of Environmental Quality (2010) and the April 28, 2010 directive from DTSC (DTSC, 2010c).

Figure 1-3 shows the locations and sampling frequencies of the RMP. The RMP consists of:

- Ten river channel surface water monitoring locations.
- Four shoreline surface water monitoring locations.
- Two other surface water monitoring locations.

1.2 Interim Measure Performance Monitoring Program

In compliance with the requirements for IM monitoring and reporting outlined in the DTSC IM performance directive of February 2005 and in subsequent directives from the DTSC in 2007 (DTSC, 2005b, 2007a-c), this document presents the Second Quarter 2012 PMP evaluation report for the IM monitoring activities from April 1, 2012 through June 30, 2012.

The Topock project IM consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems are collectively referred to as IM-3. The IM only monitors the Alluvial Aquifer. Currently, the IM-3 facilities include a groundwater extraction system (four extraction wells: TW-2D, TW-3D, TW-2S, and PE-1), conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. At this time, extraction wells PE-1 and TW-3D operate full time. Figure 1-1 shows the location of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC, 2005c). As defined by DTSC, the performance standard for this IM is to "establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that hexavalent chromium [Cr(VI)] concentrations at or greater than 20 micrograms per liter [µg/L] in the floodplain are contained for removal and treatment" (DTSC, 2005b). A draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California* (CH2M HILL, 2005) was submitted to DTSC on April 15, 2005 (herein referred to as the Performance Monitoring Plan).

The February 2005 DTSC directive also defined the monitoring and reporting requirements for the IM (DTSC, 2005b-c). In October 2007, DTSC modified the reporting requirements for the PMP (DTSC, 2007a) to discontinue monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and modifications to the PMP were approved by DTSC in letters dated October 12, 2007; July 14, 2008; July 17, 2008; and July 23, 2010 (DTSC, 2007a, 2008a-b, 2010a).

1.2.1 PMP Monitoring Networks

Figure 1-4 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. With approval from DTSC, the list of wells included in the PMP was modified beginning August 1, 2008. The performance monitoring wells in service/active during this reporting period are defined as:

- **Floodplain Wells** (monitoring wells on the Colorado River floodplain).
- **Intermediate Wells** (monitoring wells located immediately north, west, and southwest of the floodplain).
- **Interior Wells** (monitoring wells located upgradient of IM pumping).
- **Extraction Wells** (TW-2D, TW-3D, TW-2S, and PE-01).

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench. Extraction well PE-1 is located on the floodplain approximately 450 feet east of extraction well TW-3D, as shown in Figure 1-4. As stated earlier, extraction wells TW-3D and PE-1 operate full time.

Groundwater monitoring wells installed on the Arizona side of the Colorado River are not formally part of the PMP, but some of these wells have been used to collect groundwater elevation data for evaluating the hydraulic gradient on the Arizona side of the river.

The PMP monitors hydrogeologic conditions in the Alluvial Aquifer. The wells screened in the unconsolidated alluvial fan and fluvial deposits, which comprise the Alluvial Aquifer, have been separated into three depth intervals to present groundwater quality and groundwater level data. The depth intervals of the Alluvial Aquifer in the floodplain area—designated upper (shallow wells), middle (mid-depth wells), and lower (deep wells)—are based on grouping the monitoring wells screened at common elevations. These divisions do not correspond to any lithostratigraphic layers within the aquifer. The Alluvial Aquifer is considered to be hydraulically undivided. The subdivision of the aquifer into three depth intervals is an appropriate construct for presenting and evaluating spatial and temporal distribution of groundwater quality data in the floodplain. The three-interval concept is also useful for presenting and evaluating lateral gradients while minimizing effects of vertical gradients and observing the influence of pumping from partially penetrating wells.

SECTION 2

Second Quarter 2012 Monitoring Activities

This section provides a summary of the monitoring and sampling activities completed during the reporting period.

2.1 Groundwater Monitoring Program

2.1.1 Monthly

Cr(VI) and chromium samples were collected from the active IM extraction wells (PE-1 and TW-3D) in April, May, and June 2012.

2.1.2 Quarterly

Following the July 23, 2010 sampling schedule approval (DTSC, 2010a), the Second Quarter 2012 GMP quarterly groundwater monitoring event was conducted from April 9 through May 17, 2012. Select field parameters recorded during well purging included oxidation-reduction potential and pH. Groundwater samples were analyzed for Cr(VI), chromium, and specific conductance.

Groundwater samples were submitted for laboratory analysis of the following constituents at selected GMP wells during the Second Quarter 2012 sampling event, including:

- California Code of Regulations Title 22 metals, which includes arsenic, at MW-12 and MW-22.
- Samples were also analyzed from a subset of wells for chemicals of potential concern (COPCs), including molybdenum, nitrate as nitrogen (referred to as nitrate hereafter), selenium, potential in situ byproducts (manganese and arsenic), and other analytes. In an email dated March 3, 2010, DTSC directed monitoring of these COPCs, potential in situ byproducts, and other analytes (DTSC, 2010d, 2011).
- Arsenic at 47 GMP wells screened in alluvial and fluvial sediments and 19 bedrock monitoring wells.

2.1.3 Other Monitoring

In addition, groundwater samples were submitted for laboratory analysis of the following constituents at selected wells during the Second Quarter 2012 sampling event, including:

- California Code of Regulations Title 22 metals, which includes arsenic, from one Arizona well cluster (MW-55) in preparation for the final groundwater remedy
- Background metals, as recommended in the background study report (CH2M HILL, 2008), at MW-16 and MW-17.
- Samples were analyzed from a water supply well (HNWR-1), owned by Havasu National Wildlife Refuge, in preparation for the final groundwater remedy.

2.2 Surface Water Monitoring Program

Quarterly surface water sampling was conducted May 22 through May 23, 2012 from the complete RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH. Samples were also analyzed for COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and geochemical indicator parameters to develop baseline concentrations for future remedy performance evaluation.

2.3 Performance Monitoring Program

PMP pressure transducers, which monitor the Alluvial Aquifer, are downloaded in the first week of every month (April, May and June). The transducers in the key monitoring wells (MW-27-085, MW-31-125, MW-33-150, MW-

34-100, and MW-45-095a; see Figure 1-4) and those wells at the MW-33 cluster are downloaded daily via a cellular telemetry system.

SECTION 3

Results for Site-wide Groundwater Monitoring and Surface Water Sampling

3.1 Groundwater Results for Cr(VI) and Chromium

Table 3-1 presents the results for Cr(VI), chromium, field oxidation-reduction potential, laboratory specific conductance, and field pH in groundwater samples collected from the reporting period. During Second Quarter 2012, the maximum detected Cr(VI) concentration was 10,900 µg/L at well MW-20-130, consistent with previous results. The laboratory reports for results from Second Quarter 2012 are presented in Appendix A.

Figures 3-1a through 3-1c present the Cr(VI) results for wells monitoring the shallow (upper depth interval), mid-depth (middle depth interval), and deep (lower depth interval) wells of the Alluvial Aquifer and bedrock, respectively, from Second Quarter 2012. Figures 3-1a through 3-1c also show the approximate outlines of Cr(VI) concentration contours greater than 32 µg/L for the Alluvial Aquifer and bedrock based on results from groundwater sampling events conducted in the second quarter 2012. The value of 32 µg/L is based on the calculated natural background upper tolerance limit for Cr(VI) in groundwater from the background study (CH2M HILL, 2009a).

The areas where Cr(VI) concentrations are greater than 32 µg/L in the shallow, mid-depth, and deep intervals of the Alluvial Aquifer and East Ravine bedrock wells are generally similar to the previous quarterly monitoring events (CH2M HILL, 2009c-e, 2010a-c, 2011a-d, 2012a-b).

3.2 Other Groundwater Monitoring Results

3.2.1 COPCs, In Situ Byproducts, and Other Analytes

Table 3-2 presents the COPCs, in situ byproducts, and other analytes results for groundwater monitoring wells sampled in Second Quarter 2012. The wells where maximum concentrations of these analytes were reported are summarized below:

- MW-74-240 with a molybdenum concentration of 210 µg/L
- TW-1 with a nitrate concentration of 22.0 milligrams per liter (mg/L)
- MW-67-185 with a selenium concentration of 100 µg/L
- MW-22 with a manganese concentration of 2,900 µg/L
- Arsenic results are discussed in Section 3.2.3
- MW-33-40 with a fluoride concentration of 9.3 mg/L

3.2.2 Title 22 Metals

Table 3-3 presents the Title 22 metals results for the GMP monitoring wells MW-12 and MW-22 sampled during Second Quarter 2012. The trace metals detected in MW-12, in addition to chromium, were arsenic, barium, molybdenum, selenium, and vanadium. The dissolved concentrations of the trace metals—other than chromium and arsenic—are below the respective federal and California maximum contaminant level (CA MCL) drinking water standards. The trace metals detected in MW-22 were arsenic, barium, and molybdenum. The dissolved concentrations of the trace metals—other than arsenic—are below the respective federal and CA MCL drinking water standards.

3.2.3 Arsenic Sampling in Monitoring Wells

Forty-seven Alluvial Aquifer wells were sampled for arsenic in the Second Quarter 2012 event. These results are presented in Table B-1 in Appendix B. Eight of these monitoring well samples had arsenic concentrations greater than the CA MCL of 10 µg/L (MW-12, MW-16, MW-22, MW-32-35, MW-33-40, MW-36-90, MW-42-55, and

MW-67-260). The maximum concentration (47.0 µg/L) was reported at MW-12. The arsenic concentrations are within the previously observed ranges for each well.

Nineteen bedrock wells were sampled for arsenic in the Second Quarter 2012 event. These results are presented in Table B-1 in Appendix B. Two bedrock monitoring wells samples had an arsenic concentration greater than the CA MCL of 10 µg/L (MW-57-185 at 14.0 µg/L and MW-74-240 at 15.0 µg/L).

3.2.4 Other Sample Results

Groundwater analytical results for other groundwater monitoring conducted during the reporting period, including Title 22 metals, background metals, and Havasu National Wildlife Refuge well, are presented in Tables B-2 through B-4 in Appendix B, respectively.

3.3 Surface Water Sampling Results

Table 3-4 presents results of Cr(VI), chromium, specific conductance, and lab pH from the two surface water sampling events conducted during this reporting period. Cr(VI) was not detected above the reporting limit at any in-channel, shoreline, or other surface water monitoring locations.

Table 3-5 presents results for the COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and other geochemical indicator parameters for surface water samples. Molybdenum, nitrate, and selenium results were below laboratory reporting limits, while low arsenic (less than 3 µg/L) concentrations were detected at most sample locations. In situ byproducts results were also generally very low and near laboratory reporting limits.

3.4 Data Validation and Completeness

Laboratory analytical data from the second quarter 2012 GMP sampling events were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements.

The following bullets summarize the notable analytical qualifications in the data reported this quarter:

- One sample had matrix spike and matrix spike duplicate recoveries that were outside the control limits for beryllium (Method SW 6010B), the associated nondetect results were qualified and flagged “UJ.”
- One sample had matrix spike and matrix spike duplicate recoveries that were outside the control limits for barium and molybdenum (Method SW 6010B), the associated detect results were qualified and flagged “J.”
- One field duplicate pair had relative percent differences greater than the upper control limit for arsenic (Method SW 6020A) and one field duplicate pair had relative percent differences greater than the upper control limit for manganese (Method SW 6020A). The nondetect result was qualified and flagged “UJ” and the detect results were qualified and flagged “J.”
- Four United States Environmental Protection Agency Method 218.6 (hexavalent chromium) results 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.
- Based on the March 2007 United States Environmental Protection Agency ruling, pH has a 15-minute holding time. As a result, Method SM4500-HB (pH) samples analyzed in a certified lab require qualification. Therefore, all of the pH results for the River Monitoring Program samples and the extraction well samples were qualified as estimated and flagged “J.”
- One laboratory control sample had antimony (Method SW 6020A) recover at less than the lower control limit; the non-detect results for two associated samples were qualified as estimated and flagged “UJ.”

No other significant analytical deficiencies were identified in the second quarter 2012 GMP data. Additional details are provided in the data validation reports, which are kept in the project file and are available upon request.

SECTION 4

IM Performance Monitoring Program Evaluation

4.1 Water Quality Results for PMP Floodplain Wells

Table C-1 in Appendix C presents the results of the general chemistry and stable isotope analyses for 15 PMP monitoring wells and two river stations during sampling events from March 2005 through June 2012. In July 2008, DTSC approved modifications to the PMP IM chemical performance monitoring program (DTSC, 2008b). With those modifications, there are now 10 monitoring wells and one river station sampled for IM chemical performance monitoring. These wells are sampled annually during the fourth quarter sampling events. Figure 1-4 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Water samples from the selected performance monitoring locations are analyzed for general chemistry parameters, including total dissolved solids (TDS), chloride, sulfate, nitrate, bromide, calcium, potassium, magnesium, sodium, boron, alkalinity, deuterium, and oxygen-18 to monitor the effects of IM pumping on groundwater chemistry.

4.2 Cr(VI) Distribution and Trends in PMP Wells

The Second Quarter 2012 distribution of Cr(VI) in the upper (shallow wells), middle (mid-depth wells), and lower (deep wells) intervals of the Alluvial Aquifer is shown in plan view and cross-section on Figure 4-1.[1] Figure 4-2 presents the Second Quarter 2012 Cr(VI) results for cross-section B, oriented parallel to the Colorado River. The location of cross-section B is shown on Figure 1-4. The Cr(VI) concentration contours shown for the Alluvial Aquifer on these figures are based on results for groundwater samples collected in Second Quarter 2012.

Figure 4-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through June 2012. Sampling results are plotted for wells MW-34-100, MW-36-90, MW-36-100, MW-44-115, MW-44-125, and MW-46-175. The locations of the deep wells selected for performance evaluation are shown on Figure 1-4. Appendix C includes Cr(VI) concentration trend graphs for selected monitoring well clusters through June 2012.

Wells showing marked decreases in concentration are generally in the floodplain area where IM pumping is removing chromium in groundwater. Wells with historic detections near or at reporting limits remained at these levels during Second Quarter 2012. A review of Figure 4-3 and Appendix C indicates that Cr(VI) concentrations have remained steady or have decreased in many wells since IM and PE-1 pumping began in 2004 and 2005, respectively.

Key Cr(VI) and chromium trends for PMP groundwater monitoring wells (see Figure 1-4) sampled during Second Quarter 2012 include:

- Concentrations at the MW-20 cluster (located near the TW-3D pumping well) indicate slightly increasing concentrations at the shallow well MW-20-070 (since 2008), decreasing concentrations at MW-20-100 (since May 2007), and variable concentrations at MW-20-130 (Figure C-3).
- Concentrations at MW-26 and the MW-31 cluster have decreased. The lowest Cr(VI) concentration reported to date for MW-26 (1,810 µg/L) was observed during May 2012 (Figure C-4).
- Cr(V I) concentrations at MW-28-90 have remained below or near the reporting limit since 2004, as presented in Figure C-4 in Appendix C.

[1] In Figures 4-1 and 4-2, the Cr(VI) concentrations are color coded based on the groundwater background Cr(VI) concentration, which is 32 µg/L (CH2M HILL, 2009a). The 20-µg/L and 50-µg/L Cr(VI) concentration contours presented in Figures 4-1 and 4-2 are shown in accordance with DTSC's 2005 IM directive and are not based on the background Cr(VI) concentration for groundwater.

- Mid-depth and deep MW-33 cluster Cr(VI) concentrations have shown stable trends since 2008, while shallow well MW-33-40 has remained below or near the reporting limit since 2004, as presented in Figure C-5 in Appendix C.
- The Second Quarter 2012 Cr(VI) concentration of 11.6 µg/L at MW-34-100 is the lowest concentration reported for this well since sample collection began in February 2005. Cr(VI) concentrations at MW-34-100 have been variable, but generally declining, since June 2006, as shown on Figure 4-3. In addition to this primary overall downward trend in Cr(VI) concentration, MW-34-100 also shows a secondary seasonal effect in concentration related to high (spring/summer) and low (winter) Colorado River levels. The transitions between high and low river stages are believed to result in relatively small changes in the direction of the flow paths around MW-34-100 (both horizontally and/or vertically). Such changes in flowpaths could result in seasonal variations in the concentrations observed in MW-34-100 as groundwater is pulled from areas of higher concentrations and/or lower oxidation-reduction potential.
- The secondary trend of seasonal fluctuation in Cr(VI) is also seen in other monitoring wells; specifically, a stable Cr(VI) seasonal trend is seen at MW-35-60 and MW-46-175. River levels are discussed in Section 4.6.
- MW-36 cluster (MW-36-20 though MW-36-70) Cr(VI) concentrations in the shallow and mid-depth wells have remained less than or near reporting limits since 2004, as presented in Appendix C, Figure C-7.
- Deep well MW-36-90 Cr(VI) concentrations decreased after the start of IM pumping, diminishing further to near reporting limits upon the initiation of PE-01 pumping in 2006 (Appendix C, Figure C-7).
- Deep well MW-36-100 Cr(VI) concentrations initially increased upon the startup of PE-01 pumping but have been less than 100 µg/L since October 2008 (Appendix C, Figure C-4).
- Cr(VI) concentrations at MW-44-115 have shown a steady declining trend since the well was constructed in 2006 (Figure 4-3 and Appendix C, Figure C-10).
- Cr(VI) concentrations at MW-44-125 were above 600 µg/L in 2006, shortly after the well was constructed, but have steadily declined since late 2008. During Second Quarter 2012, Cr(VI) concentrations were below laboratory reporting limits.
- Concentrations in deep well MW-46-175 have shown a fluctuating trend since 2007 as presented in Figure 4-3 and Appendix C, Figure C-11. The April 2012 Cr(VI) concentration of 34.4 µg/L was the lowest concentration reported for this well to date.
- MW-47-55 Cr(VI) concentration trends have been fluctuating; while Cr(VI) concentrations trends have been stable at MW-47-115, since March 2008, as presented in Appendix C, Figure C-11.
- Well TW-04, a deeper well, has shown an overall declining trend since March 2007, as presented in Appendix C, Figure C-19.

4.3 PMP Contingency Plan Cr(VI) Monitoring

The Topock Interim Measures Contingency Plan (IMCP) was developed to detect and control any possible migration of the Cr(VI) plume toward the Colorado River. Currently, the IMCP consists of 24 wells (CH2M HILL, 2005, 2006; PG&E, 2007, 2008). Appendix C includes Cr(VI) concentration trend graphs for the IMCP wells. The IMCP well Cr(VI) results in Second Quarter 2012 were all below their assigned trigger levels.

4.4 Extraction Systems Operations

Pumping data for the IM-3 groundwater extraction system for the reporting period of April 1 through June 30, 2012 are presented in Table 4-1. From April 1 through June 30, 2012, the volume of groundwater extracted and

treated by the IM-3 system was 16,670,880 gallons. This resulted in removal of an estimated 111.7 pounds (50.7 kilograms) of chromium from the aquifer during the period from March 1, 2012 through May 31, 2012.[2]

During Second Quarter 2012, extraction wells TW-3D and PE-1 operated at a combined pumping rate of 127.2 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates during the reporting period were 115.5 gpm (April 2012), 132.2 gpm (May 2012), and 133.8 gpm (June 2012). Extraction wells TW-2S and TW-2D were not operated during Second Quarter 2012. The operational run-time percentage for the IM extraction system was 94.9 percent during this reporting period. The operations log for the extraction system during Second Quarter 2012, including planned and unplanned down time, is included in Appendix D.

The concentrate (i.e., saline water) from the reverse osmosis system was shipped offsite as a RCRA non-hazardous waste and was transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Six containers of solids from the IM-3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during Second Quarter 2012. Daily IM-3 inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

During the reporting period, Cr(VI) concentrations in TW-3D remained stable, ranging from a maximum value of 990 μg/L in May 2012 to a minimum value of 906 μg/L in June 2012, as shown in Table 4-2. TDS concentrations in TW-3D for this period have remained relatively stable as shown in Table 4-2.

The Cr(VI) concentrations in the extracted groundwater at well PE-1, located on the floodplain, ranged from to 6.8 to 7.7 μg/L during the reporting period, as shown in Table 4-2. TDS concentrations in PE-1 for this period have also remained relatively stable.

4.5 Hydraulic Gradient and River Levels during Quarterly Period

During the reporting period, water levels were recorded at intervals of 30 minutes with pressure transducers in over 50 wells in the Alluvial Aquifer and two river monitoring stations (I-3 and RRB). The data are typically continuous, with only short interruptions for sampling or maintenance. The locations of the wells monitored are shown on Figure 1-4.

Daily average groundwater and river elevations calculated from the pressure transducer data for the reporting period are summarized in Table E-1 in Appendix E. Groundwater elevations (or hydraulic heads) are adjusted for temperature and salinity differences between wells (that is, adjusted to a common freshwater equivalent), as described in the Performance Monitoring Plan. Groundwater elevation hydrographs for the PMP wells during the reporting period are included in Appendix E. The elevation of the Colorado River measured at the I-3 gauge station (location shown on Figure 1-4) is also shown on the hydrographs in Appendix E.

Average Second Quarter 2012 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view on Figures 4-4a through 4-4c. Average groundwater elevations for wells on floodplain cross-section A are presented and contoured on Figure 4-5. Several monitoring wells are significantly deeper than other wells in the lower depth interval. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells.

The quarterly average groundwater elevations for wells MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are presented on Figure 4-4c and are used for contouring, where appropriate. With the exception of well MW-55-45, all of the wells in the MW-54 and MW-55 clusters are screened in the deep interval of the Alluvial Aquifer. Well MW-55-45 is screened over the boundary between the shallow and middle intervals.

[2] Chromium removed this reporting period includes the period of March 1 through May 31, 2012. On July 23, 2010, DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from March 1, 2012 through May 31, 2012.

Deep zone water levels shown in Figure 4-4c indicate that potentiometric levels in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This means that the hydraulic gradient on the Arizona side of the river is directed to the west and, as a result, groundwater flow would also be towards the west in that area. This is consistent with the site conceptual model and with the current numerical groundwater flow model (CH2M HILL, 2009a, 2009f).

Hydraulic gradients were measured during the reporting period for well pairs selected for performance monitoring of the two pumping centers (TW-3D and PE-1). The following well pairs were approved by DTSC on October 12, 2007 (DTSC, 2007a) to define the gradients induced while pumping from two locations:

- MW-31-135 and MW-33-150 (northern gradient pair)
- MW-45-95 and MW-34-100 (central gradient pair)
- MW-45-95 and MW-27-85 (southern gradient pair)

Table 4-3 presents the average monthly hydraulic gradients that were measured between the gradient well pairs in Second Quarter 2012. Figure 4-6 presents graphs of the hydraulic gradients, monthly average pumping rates, and river levels for the quarterly period. Strong landward gradients were measured each month. The overall average gradients for all well pairs ranged from 0.0035 to 0.0051 feet per foot (ft/ft). This is 3.5 to 5.1 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 2.1 to 2.2 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 5.6 to 9.7 times the target gradient. The southern well pair gradients averaged 2.7 to 3.6 times the target gradient for the reporting period.

4.6 Projected River Levels during Next Quarter

Colorado River stage near the Topock Compressor Station is measured at the I-3 location and is directly influenced by releases from Davis Dam and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the United States Bureau of Reclamation (BOR). Total releases from Davis Dam follow a predictable annual cycle, with largest monthly releases typically in spring and early summer and smallest monthly releases in late fall/ winter (November and December). Superimposed on this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year.

Figure 4-7 shows river stage measured at I-3 superimposed on the projected I-3 river levels. Projected river levels for future months are based on the BOR projections of Davis Dam discharge and Lake Havasu levels from the month preceding. For example, the projected river level for July 2012 is based on the June 2012 BOR data of Davis Dam release and Lake Havasu level, not the actual release and level values. The variability between measured and projected river levels is due to the difference between measured and actual Davis Dam release and Lake Havasu levels. The more recent data plotted on Figure 4-7 are summarized in Table 4-4. The future projections shown on Figure 4-7 are based on BOR long-range projections of Davis Dam releases and Lake Havasu levels from June 2012. There is more uncertainty in these projections at longer times in the future since water demand is based on various elements including climatic factors.

Current BOR projections, presented in Table 4-4, show that the average projected Davis Dam release for July 2012 (14,500 cubic feet per second) will be less than the actual release in June 2012 (15,996 cubic feet per second). Based on July 2012 BOR predictions, it is anticipated that the Colorado River level at the I-3 gage location in July 2012 will be approximately 0.59 feet lower compared to the actual levels in June 2012. Current projections show that the water levels will decrease during the next quarterly reporting period (July through October 2012), as shown on Figure 4-7.

4.7 Quarterly PMP Evaluation Summary

The groundwater elevation and hydraulic gradient data from April 2012 through June 2012 performance monitoring indicate that the minimum landward gradient target of 0.001 ft/ft was exceeded each month during the quarterly reporting period. The overall average landward gradients during Second Quarter 2012 were 3.5 to

5.1 times the required minimum magnitude. The current gradient well pairs are adequate to define the capture of the Cr(VI) plume while pumping from extraction wells TW-3D and PE-1. Based on the hydraulic and monitoring data and evaluation presented in this report, the IM performance standard has been met for the Second Quarter 2012 reporting period.

A total of 16,670,880 gallons of groundwater were extracted between April and June 2012 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during Second Quarter 2012, including system down time, was 127.2 gpm. An estimated 111.7 pounds (50.7 kilograms) of chromium were removed and treated between March 1 and May 31, 2012.

A review of the groundwater gradient maps for Second Quarter 2012 (Figures 4-4a to 4-4c) shows that floodplain PMP monitoring wells where Cr(VI) was detected at greater than 20 µg/L are within the IM capture zone of the pumping well(s) during the reporting period. That is, the inferred groundwater flow lines from floodplain PMP wells with Cr(VI) greater than 20 µg/L are generally oriented towards the TW-3D and PE-1 extraction wells.

Presentation and evaluation of the Cr(VI) trends observed in the performance monitoring area during Second Quarter 2012 are discussed in Section 4.2. Wells showing marked decreases in concentration are generally in the floodplain area where IM pumping is removing chromium in groundwater. Wells with historic detections near or at reporting limits remained at these levels during Second Quarter 2012. The Second Quarter 2012 Cr(VI) concentration of 11.6 µg/L at MW-34-100, is the lowest concentration reported for this well since sample collection began in February 2005, similarly the Second Quarter Cr(VI) concentration reported for MW-46-175 (34.4 µg/L) was the lowest concentration reported for this well to date.

SECTION 5

Upcoming Operation and Monitoring Events

Reporting of the IM extraction and monitoring activities will continue as described in the PMP and under direction from DTSC. All monitoring results, operations, and performance monitoring data will be reported in the Third Quarter 2012 monitoring report, which will be submitted by November 30, 2012.

5.1 Groundwater Monitoring Program

5.1.1 Quarterly Monitoring

As described in the July 23, 2010 DTSC sampling schedule approval (DTSC, 2010a), the third monitoring event will occur mid-September through mid- October 2012.

5.1.2 Monthly Monitoring

Monthly sampling of the two active extraction wells (TW-3D and PE-1) will continue to be performed during the first two weeks of each month.

5.2 Surface Water Monitoring Program

The Third Quarter 2012 surface water monitoring event will be conducted at locations in the RMP monitoring network and is scheduled to occur on August 21 and 22, 2012. Results will be reported in the Third Quarter 2012 monitoring report.

5.3 Performance Monitoring Program

5.3.1 Extraction

Per DTSC direction, PG&E will continue to operate wells TW-3D and PE-1 at a target combined pumping rate of 135 gpm during Second Quarter 2012, except for periods when planned and unplanned down time occurs. Extracted groundwater treated at the IM-3 facility will be discharged into the IM-3 injection wells in accordance with compliance requirements of the waste discharge ARARs. Saline water and solids generated as byproducts of the treatment process will continue to be transported for offsite disposal.

PG&E will balance the pumping rates between wells TW-3D and PE-1 to maintain the target pumping rate and to maintain the DTSC-specified hydraulic gradients across the Alluvial Aquifer. Well TW-2D will serve as a backup to extraction wells TW-3D and PE-1.

5.3.2 Transducer Download

Downloads of the transducers in the key gradient control wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, and MW-45-095) and the MW-33 cluster will continue to be conducted daily during Third Quarter 2012. Downloads of the remainder of the transducers will occur during the first week of each month during Third Quarter 2012.

SECTION 6

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Tables

Table 1-1

Topock Monitoring Reporting Schedule
Second Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Program	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Groundwater Monitoring Program	January - March	April - June	July-October	November-December
Surface Water Monitoring Program	January - March	April - June	July-October	November-December
Performance Monitoring Program	January - March	April - June	July-October	November-December
IM-3 Monitoring (Chromium removed)	January - February	March - May	June-September	October-December

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-9	SA	09-Dec-11	299	290	130	2,800	7.3
MW-10	SA	05-May-11	411	384	-15	3,000	7.7
		05-May-11 FD	391	401	FD	3,000	FD
		09-Dec-11	621	622	62	2,600	7.6
		15-May-12	269	278	39	3,000	7.5
MW-12	SA	06-May-11	2,910	2,870	150	6,400	8.2
		06-Oct-11	2,840	3,200	73	6,700	8.3
		09-Dec-11	2,240	2,830	47	6,400	8.2
		09-Feb-12	2,730	3,100	120	7,000	7.6
		07-May-12	3,330	2,880	95	6,400	8.2
MW-13	SA	06-Dec-11	21.2	22.6	67	1,900	7.7
MW-14	SA	09-Dec-11	20.1	22.8	7.0	1,500	7.6
MW-15	SA	07-Dec-11	11.5	12.6	54	1,500	7.8
MW-16	SA	02-May-11	10.0	10.6	R	1,100	8.5
		07-Dec-11	11.8	11.3	54	1,100	8.0
		24-Apr-12	10.0	10.6	32	980	8.1
MW-17	SA	03-May-11	15.0	15.9	R	1,500	8.0
		07-Dec-11	15.8	14.5	60	1,400	8.0
		25-Apr-12	13.3	13.3	29	1,300	8.3
MW-18	SA	08-Dec-11	21.4	21.6	80	1,300	7.6
MW-19	SA	04-May-11	497	494	-2.1	2,200	7.8
		09-Dec-11	289	295	110	2,000	7.5
		01-May-12	363	353	33	2,100	7.4
		01-May-12 FD	368	364	FD	2,100	FD
MW-20-70	SA	06-May-11	3,570	3,510	150	2,700	7.4
		07-Dec-11	3,570	3,560	130	2,600	7.6
		07-May-12	3,330	3,410	110	2,300	7.7
MW-20-100	MA	06-May-11	5,640	5,600	140	3,100	7.1
		08-Dec-11	3,770	3,930	80	2,800	7.3
		08-May-12	4,740	5,030	100	3,000	7.3
MW-20-130	DA	06-May-11	12,100	11,500	120	12,000	7.3
		09-Dec-11	11,100	11,500	82	11,000	7.4
		10-May-12	10,900	10,800	66	12,000	7.5

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-21	SA	03-May-11	2.0	2.3	R	9,000	7.6
		29-Sep-11	ND (1.0)	ND (1.0)	23	13,000	7.1
		06-Dec-11	2.1	2.7	200	11,000	7.0
		07-Feb-12	2.1	4.8	77	10,000	7.1
		26-Apr-12	0.56	1.8	33	9,700	7.5
MW-22	SA	03-May-11	ND (1.0)	ND (1.0)	-64	14,000	8.5
		16-Dec-11	ND (2.1)	1.0	-120	32,000	6.7
		11-Apr-12	ND (1.0)	ND (1.0)	-91	16,000	7.0
MW-23-060	BR	04-May-11	30.2	31.3	-77	15,000	R
		29-Sep-11	26.8	29.8	-29	16,000	R
		13-Dec-11	29.9	30.6	110	16,000	R
		14-Feb-12	30.2	32.1	67	16,000	R
		30-Apr-12	29.7	32.4	-76	14,000	10.2
		30-Apr-12 FD	29.9	33.4	FD	14,000	FD
MW-23-080	BR	04-May-11	14.1	13.3	-170	15,000	R
		04-May-11 FD	14.4	12.5	FD	16,000	FD
		29-Sep-11	5.6	5.6	-66	16,000	R
		12-Dec-11	8.7	8.8	-43	16,000	R
		12-Dec-11 FD	8.2	8.6	FD	16,000	FD
		14-Feb-12	9.5	10.8	-140	16,000	7.6
		30-Apr-12	6.0	8.2	-130	15,000	10.5
MW-24BR	BR	05-May-11	ND (1.0)	ND (1.0)	-130	14,000	8.5
		30-Sep-11	ND (1.0)	8.2 J	-130	14,000	8.3
		09-Dec-11	ND (1.0)	ND (1.0)	-150	14,000	8.2
		09-Dec-11 FD	ND (1.0)	ND (1.0)	FD	14,000	FD
		10-Feb-12	ND (1.0)	ND (1.0)	-240	14,000	8.0
		16-May-12	ND (1.0)	ND (1.0)	-110	15,000	8.2
MW-25	SA	15-Dec-11	249	265	130	1,600	7.2
		15-Dec-11 FD	269 J	259	FD	1,500	FD
MW-26	SA	05-May-11	2,010	1,890	63	4,000	7.3
		09-Dec-11	1,840	1,750	5.5	4,000	7.4
		07-May-12	1,810	1,890	130	4,000	7.4
MW-27-20	SA	05-Dec-11	ND (0.2)	ND (1.0)	-160	1,000	7.5
MW-27-60	MA	05-Dec-11	ND (0.2)	ND (1.0)	-200	1,100	8.1

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-27-60	MA	07-Feb-12	ND (0.2)	ND (1.0)	-160	1,100	8.1
MW-27-85	DA	03-Oct-11	ND (1.0)	ND (1.0)	-83	12,000	7.2
		03-Oct-11 FD	ND (1.0)	ND (1.0)	FD	12,000	FD
		05-Dec-11	ND (1.0)	ND (1.0)	-87	13,000	7.1
		07-Feb-12	ND (1.0)	ND (1.0)	-53	12,000	7.3
		09-Apr-12	ND (1.0)	ND (1.0)	-22	13,000	7.5
MW-28-25	SA	02-May-11	ND (0.2)	1.2	-8.8	1,000	7.6
		12-Dec-11	ND (0.2)	ND (1.0)	-29	1,200	7.1
		10-Apr-12	ND (0.2)	ND (1.0)	-5.3	1,100	7.6
MW-28-90	DA	02-May-11	ND (0.2)	ND (1.0)	-70	7,100	8.1
		26-Sep-11	ND (0.2)	ND (1.0)	-140	7,200	7.3
		12-Dec-11	ND (1.0)	ND (1.0)	-120	7,400	7.0
		07-Feb-12	ND (0.2)	ND (1.0)	-100	7,200	7.3
		10-Apr-12	ND (0.2)	ND (1.0)	-89	7,500	7.4
		10-Apr-12 FD	ND (1.0)	ND (1.0)	FD	7,600	FD
MW-29	SA	07-Dec-11	ND (0.2)	ND (1.0)	-110	2,400	7.2
		10-Apr-12	ND (0.2)	1.3	-130	3,000	7.4
MW-30-30	SA	03-May-11	ND (1.0)	ND (1.0)	-160	12,000	7.4
		07-Dec-11	ND (2.1)	ND (1.0)	-190	33,000	7.3
		10-Apr-12	ND (1.0)	ND (1.0)	-180	10,000	7.8
MW-30-50	MA	08-Dec-11	ND (0.2)	ND (1.0)	-190	1,200	7.7
MW-31-60	SA	04-May-11	331	324	-6.2	3,800	7.8
		06-Dec-11	489	500	55	3,200	7.7
		16-May-12	304	272	35	4,000	7.5
MW-31-135	DA	06-Dec-11	14.4	15.1	1.9	11,000	7.9
MW-32-20	SA	08-Dec-11	ND (2.1)	ND (2.0)	-160	52,000	6.5
MW-32-35	SA	02-May-11	ND (1.0)	ND (1.0)	-230	17,000	7.7
		09-Dec-11	ND (1.0)	ND (1.0)	-170	16,000	6.9
		09-Apr-12	ND (1.0)	ND (1.0)	-150	17,000	7.3
MW-33-40	SA	02-May-11	ND (0.2)	ND (1.0)	-150	5,900	8.5
		27-Sep-11	ND (1.0)	1.0	-66	12,000	7.8
		12-Dec-11	ND (1.0)	2.6	-45	9,900	7.7
		08-Feb-12	ND (0.2)	1.6	-45	7,000	8.1

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Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-33-40	SA	23-Apr-12	ND (0.2)	ND (1.0)	-54	6,100	8.4
MW-33-90	MA	04-May-11	20.7	21.3	100	9,600	7.5
		04-Oct-11	16.8	20.2	63	10,000	7.3
		13-Dec-11	21.9	19.8	8.0	10,000	7.3
		09-Feb-12	20.1	23.0	83	10,000	7.4
		30-Apr-12	16.4	17.2	25	8,500	7.7
MW-33-150	DA	04-May-11	11.2	11.4	-93	15,000	7.4
		04-Oct-11	10.4	10.1	110	16,000	7.4
		13-Dec-11	12.7	12.4	42	17,000	7.3
		09-Feb-12	10.6	11.8	110	16,000	7.5
		23-Apr-12	11.3	12.0	20	15,000	7.7
		23-Apr-12 FD	11.5	12.1	FD	15,000	FD
MW-33-210	DA	04-May-11	10.7	11.0	-170	1,700	7.2
		27-Sep-11	12.7	12.9	-84	18,000	7.3
		13-Dec-11	14.5	14.5	9.9	18,000	7.2
		09-Feb-12	12.7	14.4	98	18,000	7.3
		23-Apr-12	10.5	11.0	1.6	17,000	7.5
MW-34-55	MA	06-Dec-11	ND (0.2)	ND (1.0)	-160	990	7.7
MW-34-80	DA	03-Oct-11	ND (1.0)	ND (1.0)	-92	7,800	7.3
		06-Dec-11	ND (1.0)	ND (1.0)	-83	7,300	7.4
		07-Feb-12	ND (0.2)	ND (1.0)	-27	7,800	7.3
		09-Apr-12	ND (1.0)	ND (1.0)	-34	8,300	7.6
MW-34-100	DA	03-Oct-11	55.8	56.9	5.7	17,000	7.4
		03-Oct-11 FD	57.0	61.7	FD	17,000	FD
		09-Nov-11	144	147	74	---	7.6
		06-Dec-11	210	209	-1	17,000	7.6
		06-Dec-11 FD	202	210	FD	17,000	FD
		18-Jan-12	208	217	87	---	7.7
		07-Feb-12	76.6	84.9	33	17,000	7.5
		07-Feb-12 FD	77.8	89.9	FD	17,000	FD
		09-Apr-12	11.5	12.4	-22	17,000	7.6
		09-Apr-12 FD	11.6	11.3	FD	17,000	FD
MW-35-60	SA	04-May-11	26.1	26.4	-19	6,700	7.9
		07-Dec-11	26.2	25.9	100	6,700	7.3
		06-Feb-12	24.6	27.7	110	6,900	7.3

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Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-35-60	SA	26-Apr-12	32.6	32.1	42	5,800	7.7
MW-35-135	DA	04-May-11	29.4	31.0	-37	9,800	8.1
		07-Dec-11	35.3	36.9	97	9,600	7.6
		26-Apr-12	28.6	30.2	26	9,900	7.9
MW-36-20	SA	14-Dec-11	ND (1.0)	1.1	-140	8,100	7.5
MW-36-40	SA	14-Dec-11	ND (0.2)	ND (1.0)	-150	1,300	7.7
MW-36-50	MA	14-Dec-11	ND (0.2)	ND (1.0)	-100	1,400	7.5
MW-36-70	MA	14-Dec-11	ND (0.2)	ND (1.0)	-77	1,100	7.9
MW-36-90	DA	02-May-11	ND (0.2)	ND (1.0)	-71	1,300	8.9
		14-Dec-11	ND (0.2)	ND (1.0)	-100	1,200	8.3
		10-Apr-12	ND (0.2)	ND (1.0)	-70	1,300	8.5
MW-36-100	DA	03-May-11	56.4	62.5	-140	9,700	7.0
		06-Dec-11	73.3	76.4	-100	10,000	7.1
		10-Apr-12	59.8	70.8	-130	9,500	7.4
MW-37S	MA	07-Dec-11	10.1	9.9	-16	5,000	7.7
MW-37D	DA	05-May-11	178	172	90	15,000	7.6
		08-Dec-11	62.5	70.8	-88	15,000	7.7
MW-39-40	SA	15-Dec-11	ND (0.2)	ND (1.0)	-160	2,000	7.9
		15-Dec-11 FD	ND (0.2)	ND (1.0)	FD	2,000	FD
MW-39-50	MA	15-Dec-11	ND (0.2)	ND (1.0)	-97	1,500	8.1
MW-39-60	MA	15-Dec-11	ND (0.2)	ND (1.0)	-60	1,700	7.9
MW-39-70	MA	15-Dec-11	ND (0.2)	ND (1.0)	-4.2	3,500	7.5
MW-39-80	DA	15-Dec-11	ND (1.0)	ND (1.0)	-4.5	1,100	7.0
MW-39-100	DA	14-Dec-11	130	138	18	17,000	6.5
MW-40S	SA	07-Dec-11	7.6	7.8	93	2,300	7.5
MW-40D	DA	05-May-11	140	124	-7.7	14,000	7.4
		07-Dec-11	169	172	9.0	15,000	7.4
MW-41S	SA	07-Dec-11	19.0	19.1	-22	5,000	7.9
		07-Dec-11 FD	19.0	18.5	FD	5,000	FD
MW-41M	DA	05-Dec-11	10.6	12.2	160	15,000	7.6
MW-41D	DA	02-May-11	1.9	2.4	R	18,000	7.8

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Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-41D	DA	05-Dec-11	3.4	4.5	-56	18,000	7.6
		26-Apr-12	2.2	3.0	-66	20,000	7.9
MW-42-30	SA	06-Dec-11	0.2	1.3	-240	---	7.9
MW-42-55	MA	26-Sep-11	ND (0.2)	ND (1.0)	-120	6,300	7.4
		06-Dec-11	ND (0.2)	ND (1.0)	-170	5,700	7.5
		07-Feb-12	ND (0.2)	ND (1.0)	-130	5,400	7.6
		09-Apr-12	ND (0.2)	ND (1.0)	-120	5,000	7.8
MW-42-65	MA	26-Sep-11	ND (1.0)	ND (1.0)	-41	9,100	7.2
		06-Dec-11	ND (1.0)	ND (1.0)	-99	9,800	7.2
		07-Feb-12	ND (1.0)	ND (1.0)	-40	9,400	7.2
		09-Apr-12	ND (1.0)	ND (1.0)	-45	9,000	7.5
MW-43-25	SA	09-Dec-11	ND (0.2)	ND (1.0)	-180	1,200	7.4
MW-43-75	DA	09-Dec-11	ND (1.0)	ND (1.0)	-170	12,000 J	7.3
MW-43-90	DA	09-Dec-11	ND (1.0)	ND (1.0)	-100	17,000	6.6
MW-44-70	MA	03-May-11	ND (0.2)	ND (1.0)	-160	2,500	7.4
		08-Dec-11	ND (0.2)	ND (1.0)	-160	2,200	7.4
		12-Apr-12	ND (0.2)	ND (1.0)	-240	2,300	7.7
MW-44-115	DA	03-May-11	184	201	-120	11,000	7.7
		27-Sep-11	144	150	-150	11,000	7.9
		08-Dec-11	129	132	-160	11,000	7.8
		08-Dec-11 FD	128	130	FD	11,000	FD
		08-Feb-12	134	120	-93	12,000	8.0
		12-Apr-12	122	134	-170	11,000	8.1
		12-Apr-12 FD	124	125	FD	11,000	FD
MW-44-125	DA	03-May-11	ND (0.2)	10.8 J	-320	11,000	7.5
		03-May-11 FD	1.0	14.7 J	FD	10,000	FD
		27-Sep-11	ND (1.0)	6.0	-170	11,000	7.8
		27-Sep-11 FD	ND (1.0)	7.1	FD	12,000	FD
		08-Dec-11	21.5	26.8	-190	11,000	7.7
		08-Dec-11 FD	20.6	27.2	FD	9,800	FD
		08-Feb-12	ND (1.0)	13.5	-200	13,000 J	7.8
		08-Feb-12 FD	ND (1.0)	13.2	FD	7,700 J	FD
		12-Apr-12	ND (0.2)	17.9	-260	11,000	7.9
MW-45-095a	DA	14-Dec-11	29.6	30.0	65	9,000	7.5

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Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-45-095a	DA	14-Dec-11 FD	29.8	30.2	FD	9,400	FD
MW-46-175	DA	03-May-11	53.4	55.9	-200	16,000	8.3
		03-May-11 FD	53.2	56.8	FD	16,000	FD
		26-Sep-11	69.4	70.6	-180	17,000	8.3
		09-Nov-11	110	106	-80	---	8.4
		13-Dec-11	121	129	-130	17,000	8.3
		18-Jan-12	93.8	101	-91	---	7.6
		08-Feb-12	76.2	84.1	-93	15,000	8.3
		23-Apr-12	34.4	40.5	-100	16,000	8.6
MW-46-205	DA	04-May-11	5.8	6.6	41	18,000	8.1
		13-Dec-11	4.4	6.5	-67	19,000	8.2
		12-Apr-12	5.1	5.9	-140	19,000	8.5
MW-47-55	SA	03-May-11	19.3	19.4	65	4,300	7.5
		08-Dec-11	24.8	23.8	55	4,600	7.6
		25-Apr-12	16.5	16.6	35	4,400	7.8
MW-47-115	DA	03-May-11	22.5	24.4	-40	12,000	7.5
		08-Dec-11	16.9	18.0	18	14,000	7.6
		25-Apr-12	22.7	23.6	10	12,000	8.0
MW-48	BR	04-May-11	ND (1.0)	ND (1.0)	-120	16,000	7.3
		30-Sep-11	ND (0.2)	ND (1.0)	31	17,000	7.2
		07-Dec-11	ND (1.0)	1.0	---	17,000	6.8
		08-Feb-12	ND (1.0)	1.6	150	17,000	7.2
		25-Apr-12	ND (1.0)	ND (1.0)	-24	17,000	7.6
MW-49-135	DA	07-Dec-11	ND (1.0)	ND (1.0)	1.1	13,000 J	7.9
MW-49-275	DA	07-Dec-11	ND (1.0)	1.8	-200	28,000	8.1
MW-49-365	DA	07-Dec-11	ND (2.1)	ND (1.0)	-230	42,000	8.0
MW-50-095	MA	03-May-11	18.3	18.9	R	5,000	8.2
		06-Dec-11	14.1	15.6	42	5,100	8.0
		25-Apr-12	14.7	15.4	0.2	4,800	8.2
		25-Apr-12 FD	14.6	15.5	FD	4,800	FD
MW-50-200	DA	06-May-11	9,720	9,080	51	18,000	7.7
		04-Oct-11	7,860	7,350	70	19,000	7.7
		08-Dec-11	8,740	8,730	76	19,000	7.7
		09-Feb-12	9,080	9,530	250	19,000	7.7

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Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-50-200	DA	10-May-12	9,370	9,190	45	21,000	7.7
MW-51	MA	06-May-11	4,730	4,690	130	10,000	7.4
		07-Dec-11	4,810	4,710	140	10,000	7.3
		08-May-12	4,740	5,140	99	10,000	7.5
MW-52S	MA	03-May-11	ND (2.1)	ND (1.0)	-130	10,000	8.8
		15-Dec-11	ND (1.0)	ND (1.0)	-120	7,500	6.9
		11-Apr-12	ND (0.2)	ND (1.0)	-110	10,000	7.2
MW-52M	DA	03-May-11	ND (2.1)	ND (1.0)	-140	15,000	9.0
		15-Dec-11	ND (1.0)	ND (1.0)	-140	11,000	7.8
		11-Apr-12	ND (1.0)	ND (1.0)	-130	16,000	7.6
MW-52D	DA	03-May-11	ND (1.0)	ND (1.0)	-150	18,000	9.3
		15-Dec-11	ND (1.0)	ND (1.0)	-180	16,000	7.9
		11-Apr-12	ND (1.0)	ND (1.0)	-150	19,000	7.9
MW-53M	DA	03-May-11	ND (1.0)	ND (1.0)	-150	18,000	R
		16-Dec-11	ND (1.0)	ND (1.0)	-180	18,000	7.9
		11-Apr-12	ND (1.0)	ND (1.0)	-160	18,000	8.3
MW-53D	DA	03-May-11	6.6 J	ND (1.0)	-150	32,000	R
		03-Oct-11	ND (2.1)	ND (1.0)	-220	33,000	8.3
		03-Oct-11 FD	ND (2.1)	ND (1.0)	FD	33,000	FD
		16-Dec-11	ND (2.1)	ND (1.0)	-220	28,000	8.3
		16-Dec-11 FD	ND (2.1)	1.0	FD	28,000	FD
		11-Apr-12	ND (1.0)	ND (1.0)	-190	30,000	8.4
MW-54-85	DA	05-May-11	ND (0.2)	ND (1.0)	-200	10,100	7.4
		06-Dec-11	ND (1.0)	ND (1.0)	-180	10,100	7.5
		24-Apr-12	ND (0.2)	ND (1.0)	-170	10,000	7.8
MW-54-140	DA	05-May-11	ND (0.2)	ND (1.0)	-40	13,000	8.1
		06-Dec-11	ND (1.0)	ND (1.0)	46	12,300	7.7
		24-Apr-12	ND (1.0)	ND (1.0)	-43	12,600	8.0
MW-54-195	DA	05-May-11	ND (1.0)	ND (1.0) J	-180	20,000	8.9
		05-May-11 FD	ND (1.0)	ND (5.0)	FD	20,000	FD
		06-Dec-11	ND (1.0)	ND (5.0)	-220	18,800	8.1
		24-Apr-12	ND (1.0)	ND (5.0)	-170	19,400	8.3
		24-Apr-12 FD	ND (1.0)	ND (5.0)	FD	19,100	FD
MW-55-45	MA	06-Dec-11	ND (0.2)	ND (1.0)	-150	1,450	7.6

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Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-55-45	MA	03-Apr-12	ND (0.2)	ND (1.0)	-160	---	7.4
MW-55-120	DA	06-Dec-11	6.9	7.0	5.0	8,520	7.9
		06-Dec-11 FD	6.8	6.9	FD	8,580	FD
		03-Apr-12	6.7	6.5	28	---	7.9
MW-56S	SA	04-May-11	ND (0.2)	ND (1.0)	-150	6,310	7.1
		13-Dec-11	ND (1.0)	ND (1.0)	-160	5,980	7.2
		17-May-12	ND (0.2)	ND (1.0)	-120	6,160	8.0
MW-56M	DA	04-May-11	ND (0.2)	ND (1.0) J	-150	14,900	7.1
		13-Dec-11	ND (1.0)	ND (1.0)	-150	14,600	7.2
		17-May-12	ND (1.0)	ND (1.0)	-120	14,900	8.0
MW-56D	DA	04-May-11	ND (1.0)	ND (5.0)	-100	21,700	7.6
		13-Dec-11	ND (1.0)	ND (5.0)	-170	21,000	7.7
		17-May-12	ND (1.0)	ND (1.0)	-110	21,800	8.2
MW-57-070	BR	05-May-11	486	475	58	2,400	7.0
		05-May-11 FD	500	421	FD	2,400	FD
		29-Sep-11	309	352	56	2,400	6.9
		15-Dec-11	291	296	-21	2,500	7.1
		15-Feb-12	454	520	92	2,800	6.4
		03-May-12	288	314	120	2,600	7.1
MW-57-185	BR	03-May-11	6.3	7.2	R	17,000	8.4
		28-Sep-11	7.0	8.5	-130	17,000	8.5
		13-Dec-11	7.4	7.3	-130	18,000	8.3
		10-Feb-12	7.2	8.5	-170	17,000	8.2
		10-Feb-12 FD	7.3	8.9	FD	17,000	FD
		30-Apr-12	7.1	8.6	-59	16,000	8.9
MW-58BR-LWR-160	BR	16-May-12	2.4	7.4	-88	11,000	8.4
MW-58BR-UPR-160	BR	15-May-12	ND (1.0)	1.4	-120	11,000	7.5
MW-59-100	SA	06-May-11	5,240	4,520	120	10,000	6.9
		04-Oct-11	4,330	4,850	120	10,000	6.8
		15-Dec-11	4,600	4,950	1.8	9,000	6.9
		15-Dec-11 FD	4,990	4,890	FD	9,100	FD
		22-Feb-12	4,070	4,690	180	9,100	7.0
		08-May-12	4,610	4,690	130	11,000	7.0
MW-60-125	BR	05-May-11	1,040	959	-14	8,700	7.3

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-60-125	BR	04-Oct-11	715	760	-27	8,200	7.3
		14-Dec-11	901	915	-53	8,100	7.4
		15-Feb-12	918	1,100	110	19,000	7.4
		03-May-12	882	936	98	8,400	7.4
MW-60BR-245	BR	17-May-12	74.2	77.0	-130	17,000	8.6
MW-61-110	BR	05-May-11	522	531	-31	15,000	7.3
		30-Sep-11	611	698	-30	15,000	7.3
		14-Dec-11	682	722	-46	15,000	7.3
		15-Feb-12	634	680	-29	29,000	7.3
		03-May-12	486	578	55	16,000	7.4
MW-62-065	BR	05-May-11	488	472	51	6,000	7.3
		29-Sep-11	457	500	44	6,300	7.4
		13-Dec-11	532	500	30	3,900	7.3
		17-Feb-12	452	530	R	6,500	R
		02-May-12	443	433	34	6,600	7.6
MW-62-110	BR	05-May-11	569	531	95	8,500	7.6
		29-Sep-11	598	739	-60	8,700	7.7
		14-Dec-11	1,140	1,300 [a]	-87	8,400	7.9
		16-Feb-12	842	880	160	8,700	7.6
		10-May-12	828	941	180	8,900	7.5
MW-62-190	BR	05-May-11	ND (1.0)	ND (1.0)	-110	17,000	7.7
		29-Sep-11	ND (1.0)	ND (1.0)	-88	17,000	7.7
		14-Dec-11	ND (1.0)	ND (1.0)	-110	16,000	7.7
		16-Feb-12	ND (1.0)	ND (1.0)	-130	16,000	7.8
		10-May-12	ND (1.0)	ND (1.0)	-210	19,000	7.7
MW-63-065	BR	03-May-11	1.0	1.7	-120	7,200	7.0
		28-Sep-11	1.6	2.8	4.5	7,500	7.1
		12-Dec-11	1.2	2.1	57	4,600	7.1
		13-Feb-12	ND (0.2)	1.4	28	7,200	7.1
		26-Apr-12	0.76	1.5	26	6,900	7.3
MW-64BR-LWR-150	BR	19-Apr-12	21.9	23.2	-34	13,000	7.9
MW-64BR-UPR-150	BR	16-Apr-12	ND (1.0)	2.1	-140	12,000	8.0
MW-65-160	SA	01-May-12	51.0	54.6	-2.2	3,900	7.3
MW-65-225	DA	02-May-12	365	387	110	13,000	7.7

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-66-165	SA	02-May-12	651	682	48	4,600	7.7
MW-66-230	DA	10-May-12	5,880	5,900	26	19,000	7.8
		10-May-12 FD	5,560	5,720	FD	19,000	FD
MW-66BR-270	BR	24-May-12	ND (1.0)	1.1	---	17,000	---
MW-67-185	SA	03-May-12	2,180	2,230	100	4,400	7.3
MW-67-225	MA	07-May-12	3,180	3,260	100	7,400	7.5
MW-67-260	DA	07-May-12	2,130	2,090	65	18,000	8.2
MW-68-180	SA	10-May-12	5,970	5,990	76	3,200	7.4
MW-68-240	DA	03-May-12	1,820	1,900	87	16,000	7.3
MW-68BR-280	BR	09-May-12	ND (1.0)	ND (1.0)	-130	21,000	8.5
MW-69-195	BR	02-May-12	446	488	71	3,800	7.7
MW-70-105	BR	01-May-12	76.3	77.9	-30	3,000	7.9
MW-70BR-225	BR	17-May-12	2,460	2,460	42	14,000	7.4
		17-May-12 FD	2,380	2,550	FD	14,000	FD
MW-71-035	SA	01-May-12	---	---	21	---	7.5
		02-May-12	---	---	---	7,100	---
		03-May-12	ND (1.0)	ND (1.0)	---	---	---
MW-72-080	BR	01-May-12	87.6	89.0	-26	16,000	7.7
MW-73-080	BR	01-May-12	---	---	15	---	7.2
		02-May-12	32.9	38.0	---	11,000	---
MW-74-240	BR	10-May-12	ND (0.2)	ND (1.0)	-240	1,300	9.7
OW-3S	SA	05-Dec-11	27.9	29.1	67	1,500	7.7
OW-3M	MA	05-Dec-11	17.8	18.7	15	5,600	8.0
OW-3D	DA	06-Dec-11	9.5	11.0	40	8,900	8.1
PE-1	DA	02-May-11	9.9	10.5	---	5,240	---
		07-Jun-11	9.5	11.0	---	5,180	---
		05-Jul-11	10.2 J	7.6 J	---	5,140	---
		02-Aug-11	9.0	8.8	---	5,090	---
		06-Sep-11	9.5	9.0	---	5,040	---
		04-Oct-11	11.1	10.1	---	4,930	---
		01-Nov-11	10.3	10.3	---	4,960	---

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
PE-1	DA	06-Dec-11	10.9	10.8	---	4,900	---
		03-Jan-12	11.6	12.3	---	4,960	---
		07-Feb-12	9.2	9.9	---	4,840	---
		06-Mar-12	7.9	9.0	---	4,910	---
		03-Apr-12	7.4	7.5	---	4,910	---
		01-May-12	6.9	7.7	---	5,040	---
		05-Jun-12	6.5	6.8	---	4,960	---
PGE-7BR	BR	07-Dec-11	ND (1.0)	ND (1.0)	-310	18,000	7.3
PGE-8	BR	08-Dec-11	ND (1.0)	2.1	-320	18,000	8.1
Park Moabi-3	MA	12-Dec-11	6.6	7.0 UF	13	1,400	7.5
Park Moabi-4	MA	12-Dec-11	18.9	18.2 UF	---	1,800	7.7
TW-1	SA-MA-DA	05-May-11	3,700	3,520	R	6,900	7.4
		28-Sep-11	3,200	3,040	170	7,000	7.3
		15-Dec-11	3,610	3,510	130	7,400	7.2
		10-Feb-12	3,460	3,680	130	7,200	7.2
		16-May-12	3,090	3,400	41	7,100	7.3
TW-2S	SA-MA	12-Dec-11	619	662	140	2,400	7.7
		12-Dec-11 FD	511	680	FD	2,300	FD
TW-2D	DA	12-Dec-11	339	362	190	9,000	7.3
TW-3D	DA	02-May-11	1,100	1,070	---	8,620	---
		07-Jun-11	1,030	1,090	---	8,530	---
		05-Jul-11	1,130	953	---	8,460	---
		02-Aug-11	991	948	---	8,440	---
		06-Sep-11	1,000	992	---	8,510	---
		04-Oct-11	991	1,010	---	8,420	---
		01-Nov-11	1,060	1,070	---	8,610	---
		06-Dec-11	1,080	1,150	---	8,430	---
		03-Jan-12	938	1,080	---	8,530	---
		07-Feb-12	987	1,040	---	8,650	---
		06-Mar-12	1,040	1,250	---	8,560	---
		03-Apr-12	937	929	---	8,450	---
		01-May-12	951	990	---	8,470	---
		05-Jun-12	922	906	---	8,370	---
TW-4	DA	08-Dec-11	9.0	9.9	29	19,000	7.7

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, May 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
TW-5	DA	06-Dec-11	14.0	14.6	49	15,000	7.9

NOTES:

ND = not detected at listed reporting limit (RL).
FD = field duplicate sample.
UF = unfiltered.
LF = lab filtered.
R = result exceeded analytical criteria for precision and accuracy; should not be used for project decision-making.
J = concentration or RL estimated by laboratory or data validation.
(---) = data not collected, available, rejected, or field instrument malfunction.
µg/L= micrograms per liter.
mV = millivolts.
ORP = oxidation-reduction potential.
µS/cm = microSiemens per centimeter.

[a] Higher result than originally reported in the Fourth Quarter 2011 GMP/PMP Report; new value provided by secondary lab.

Beginning February 1, 2008, hexavalent chromium samples are field filtered per DTSC - approved change from analysis method SW7199 to E218.6.

The RLs for certain hexavalent chromium results from Method SW7199 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Monitoring wells MW-11, MW-24A, MW-24B, MW-38S, and MW-38D are currently sampled as part of the upland in-situ pilot test monitoring. Results from these wells are presented in the in-situ pilot test reports (ARCADIS, 2011) and are not included in this table.

ORP is reported to two significant figures. Specific Conductance is reported to three significant figures.

Wells are assigned to separate Aquifer zones for results reporting:
SA: shallow interval of Alluvial Aquifer.
MA: mid-depth interval of Alluvial Aquifer.
DA: deep interval of Alluvial Aquifer.
BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

Table 3-2
Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Arsenic Dissolved (µg/L)	Fluoride Dissolved (mg/L)	Molydenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-10	SA	15-May-12	---	5.00	39.0	6.2	---	10.0
MW-12	SA	07-May-12	47.0	---	9.9	13.0	---	11.0
MW-16	SA	24-Apr-12	11.0	---	13.0	1.7	ND (0.5)	---
MW-17	SA	25-Apr-12	1.4	---	15.0	10.0	ND (0.5)	---
MW-20-70	SA	07-May-12	---	---	41.0	7.3	---	10.0
MW-20-100	MA	08-May-12	---	---	3.9	11.0	---	15.0
MW-20-130	DA	10-May-12	5.8	---	43.0	20.0	ND (2.5)	11.0
MW-21	SA	26-Apr-12	---	---	60.0	17.0	---	1.80
MW-22	SA	11-Apr-12	12.0	---	32.0	ND (2.5)	2900	---
MW-23-060	BR	30-Apr-12	2.6	---	---	---	ND (2.5)	---
		30-Apr-12 FD	2.2	---	---	---	ND (2.5)	---
MW-23-080	BR	30-Apr-12	4.1	---	---	---	ND (12)	---
MW-26	SA	07-May-12	1.7	---	30.0	41.0	ND (2.5)	16.0
MW-27-85	DA	09-Apr-12	1.4	---	---	---	---	---
MW-28-25	SA	10-Apr-12	2.3	---	4.6	ND (5.0)	140	ND (0.5)
MW-28-90	DA	10-Apr-12	2.0 J	ND (5.0)	19.0	ND (2.5)	170	ND (1.0)
		10-Apr-12 FD	2.4 J	ND (5.0)	19.0	ND (5.0)	170	ND (1.0)
MW-29	SA	10-Apr-12	7.9	---	23.0	5.1	---	ND (0.5)
MW-30-30	SA	10-Apr-12	---	---	24.0	ND (2.5)	---	ND (2.5)
MW-31-60	SA	16-May-12	1.2	---	---	---	ND (0.5)	---
MW-32-35	SA	09-Apr-12	30.0	---	---	---	1900	---
MW-33-40	SA	23-Apr-12	17.0	9.30	170	ND (0.5)	4.9	ND (1.0)
MW-33-90	MA	30-Apr-12	---	4.20	20.0	ND (2.5)	ND (2.5)	1.50
MW-33-150	DA	23-Apr-12	---	ND (10)	39.0	ND (2.5)	13.0 J	ND (2.5)
		23-Apr-12 FD	---	ND (10)	38.0	ND (2.5)	ND (0.5) J	ND (2.5)
MW-33-210	DA	23-Apr-12	---	ND (10)	16.0	ND (2.5)	10.0	ND (2.5)
MW-34-80	DA	09-Apr-12	1.4	---	---	---	39.0	---
MW-34-100	DA	09-Apr-12	1.6	---	---	---	---	---
		09-Apr-12 FD	1.1	---	---	---	---	---
MW-35-60	SA	26-Apr-12	1.1	---	10.0	1.1	ND (0.5)	2.00
MW-35-135	DA	26-Apr-12	---	---	22.0	ND (2.5)	---	2.50
MW-36-90	DA	10-Apr-12	19.0	---	---	---	---	---
MW-36-100	DA	10-Apr-12	7.4	---	39.0	ND (2.5)	71.0	ND (2.5)
MW-41D	DA	26-Apr-12	2.7	---	---	---	56.0	---
MW-42-55	MA	09-Apr-12	12.0	---	---	---	---	---
MW-42-65	MA	09-Apr-12	2.8	---	---	---	1200	---
MW-44-70	MA	12-Apr-12	3.9	---	---	---	110	---

Table 3-2
Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Arsenic Dissolved (µg/L)	Fluoride Dissolved (mg/L)	Molydenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-44-115	DA	12-Apr-12	5.8	---	84.0	ND (2.5)	2.5	ND (2.5)
		12-Apr-12 FD	6.1	---	85.0	ND (2.5)	3.0	ND (2.5)
MW-44-125	DA	12-Apr-12	3.7	---	69.0	ND (2.5)	380	ND (2.5)
MW-46-175	DA	23-Apr-12	---	---	160	ND (2.5)	---	ND (2.5)
MW-47-55	SA	25-Apr-12	1.1	---	---	---	ND (0.5)	---
MW-51	MA	08-May-12	4.1	---	43.0	16.0	ND (2.5)	10.0
MW-52D	DA	11-Apr-12	3.5	---	---	---	270	---
MW-52M	DA	11-Apr-12	1.3	---	---	---	160	---
MW-52S	MA	11-Apr-12	ND (1.0)	---	---	---	1000	---
MW-53D	DA	11-Apr-12	3.5	---	---	---	1800	---
MW-53M	DA	11-Apr-12	1.1	---	---	---	420	---
MW-54-85	DA	24-Apr-12	4.9	---	---	---	774	---
MW-54-140	DA	24-Apr-12	ND (5.0)	---	---	---	197	---
MW-54-195	DA	24-Apr-12	ND (5.0)	---	---	---	519	---
		24-Apr-12 FD	ND (5.0)	---	---	---	522	---
MW-55-45	MA	03-Apr-12	4.7	---	29.0	ND (0.5)	---	---
MW-55-120	DA	03-Apr-12	5.2	---	26.0 J	ND (2.5)	---	---
MW-57-070	BR	03-May-12	1.6	---	4.4	2.7	6.3	5.20
MW-57-185	BR	30-Apr-12	14.0	---	93.0	ND (2.5)	470	ND (2.5)
MW-59-100	SA	08-May-12	2.1	---	5.7	4.6	11.0	3.20
MW-60-125	BR	03-May-12	1.7	---	19.0	5.4	11.0	3.00
MW-60BR-245	BR	17-May-12	8.8	---	56.0	ND (2.5)	12.0	ND (2.5)
MW-61-110	BR	03-May-12	3.2	---	22.0	ND (2.5)	280	ND (2.5)
MW-62-065	BR	02-May-12	1.8	---	18.0	ND (2.5)	4.2	2.90
MW-62-110	BR	10-May-12	8.8	---	50.0	3.4	180	2.90
MW-62-190	BR	10-May-12	5.4	---	68.0	ND (2.5)	760	ND (2.5)
MW-63-065	BR	26-Apr-12	1.2	---	26.0	ND (2.5)	30.0	1.10
MW-65-160	SA	01-May-12	0.96	---	31.0	7.1	140	8.00
MW-65-225	DA	02-May-12	2.2	---	38.0	4.1	140	5.00
MW-66-165	SA	02-May-12	1.3	---	7.4	43.0	ND (2.5)	30.0
MW-66-230	DA	10-May-12	4.8	---	82.0	9.6	27.0	9.50
		10-May-12 FD	5.4	---	86.0	9.9	29.0	9.40
MW-66BR-270	BR	24-May-12	ND (0.5)	---	27.0	ND (2.5)	73.0	ND (2.5)
MW-67-185	SA	03-May-12	1.7	---	16.0	100	8.3	19.0
MW-67-225	MA	07-May-12	2.8	---	33.0	79.0	83.0	18.0
MW-67-260	DA	07-May-12	12.0	---	81.0	ND (2.5)	230	ND (2.5)
MW-68-180	SA	10-May-12	2.9	---	37.0	10.0	ND (2.5)	12.0

Table 3-2
Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Arsenic Dissolved (µg/L)	Fluoride Dissolved (mg/L)	Molydenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-68-240	DA	03-May-12	1.9	---	21.0	4.8	140	3.60
MW-68BR-280	BR	09-May-12	2.4	---	94.0	ND (2.5)	270	ND (2.5)
MW-69-195	BR	02-May-12	2.1	---	46.0	15.0	6.7	19.0
MW-70-105	BR	01-May-12	5.4	---	120	2.0	220	2.00
MW-70BR-225	BR	17-May-12	2.0	---	18.0	ND (2.5)	ND (0.5)	3.60
		17-May-12 FD	2.1	---	18.0	2.6	ND (0.5)	3.60
MW-71-035	SA	02-May-12	1.7	---	91.0	ND (2.5)	65.0	ND (2.5)
MW-72-080	BR	01-May-12	9.7	---	75.0	ND (2.5)	210	ND (2.5)
MW-73-080	BR	02-May-12	1.4	---	23.0	5.4	33.0	4.80
MW-74-240	BR	10-May-12	15.0	---	210	ND (2.5)	ND (2.5)	ND (0.5)
TW-1	SA-MA-DA	16-May-12	---	---	15.0	22.0	---	22.0

NOTES:

µg/L = micrograms per liter.
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
FD = field duplicate sample.
--- = data not collected, available, rejected, or field instrument malfunction.
J = concentration or RL estimated by laboratory or data validation mg/L.
COPC = Chemical of Potential Concern.

The Background Study Upper Tolerance Limit (UTL) for Arsenic is 24.3 µg/L.
The U.S. EPA and California Maximum Contaminant Level for Arsenic is 10 µg/L.
The Background Study Upper Tolerance Limit (UTL) for Molybdenum is 36.3 µg/L.
There is no U.S. EPA and California Maximum Contaminant Level for Molybdenum.
The Background Study Upper Tolerance Limit (UTL) for Selenium is 10.3 µg/L.
The U.S. EPA and California Maximum Contaminant Level for Selenium is 50.0 µg/L.
The secondary U.S. EPA and California Maximum Contaminant Level for Manganese is 50 ug/L.
The Background Study Upper Tolerance Limit (UTL) for Nitrate as N is 5.03 mg/L.
The U.S. EPA and California Maximum Contaminant Level for Nitrate as N is 10 mg/L.
The Background Study Upper Tolerance Limit (UTL) for Fluoride is 7.1 mg/L.
The U.S. EPA and California Maximum Contaminant Level for Fluoride is 4 mg/L.
The secondary U.S. EPA and California Maximum Contaminant Level for Fluoride is 2 mg/L.

Wells are assigned to separate Aquifer zones for results reporting:
SA: shallow interval of Alluvial Aquifer.
MA: mid-depth interval of Alluvial Aquifer.
DA: deep interval of Alluvial Aquifer.
PA: perched aquifer (unsaturated zone).
BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).
BR-S: well completed in shallow portion of BR.
BR-M: well completed in middle portion of BR.
BR-D: well completed in deep portion of BR.

Table 3-3
Title 22 Metals Results, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	California MCL:	6	10	1,000	4	5	NE	50	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
Well ID	**Sample Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Chromium**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
MW-12	05/07/2012	ND (2.5)	47.0	58.0	ND (1.0) J	ND (3.0)	ND (3.0)	2,880	ND (5.0)	ND (10)	ND (0.2)	9.9	ND (5.0)	13.0	ND (3.0)	ND (2.5)	12.0	ND (10)
MW-22	04/11/2012	ND (2.5)	12.0	50.0	ND (2.5)	ND (2.5)	ND (15)	ND (1.0)	ND (25)	ND (10)	ND (0.2)	32.0	ND (25)	ND (2.5)	ND (15)	ND (5.0)	ND (15)	ND (50)

Notes:

ND not detected at listed reporting limit.
FD field duplicate sample.
NE not established.
* Secondary USEPA MCL.

Title 22 metals are the metals listed in California Code of Regulations, Title 22, Section 66261.24(a)(2)(A).

The maximum contaminant levels (MCLs) listed, in micrograms per liter (µg/L), are the California primary drinking water standards, except where noted.

All results are dissolved metals concentrations in µg/L from field-filtered samples.

Metals analyzed by Methods SW6010B or SW6020A or SW7470A.

Table 3-4
Surface Water Sampling Results, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-BNS-D	05/22/2012	ND (0.2)	ND (1.0)	908	8.18 J
C-CON-S	05/23/2012	ND (0.2)	ND (1.0)	899	8.06 J
C-CON-D	05/23/2012	ND (0.2)	ND (1.0)	907	8.06 J
C-I-3-S	05/22/2012	ND (0.2)	ND (1.0)	892	8.16 J
C-I-3-D	05/22/2012	ND (0.2)	ND (1.0)	907	8.17 J
C-MAR-S	05/23/2012	ND (0.2)	ND (1.0)	920	7.74 J
C-MAR-D	05/23/2012	ND (0.2)	ND (1.0)	919	7.78 J
C-NR1-S	05/23/2012	ND (0.2)	ND (1.0)	910	8.13 J
C-NR1-D	05/23/2012	ND (0.2)	ND (1.0)	908	8.10 J
C-NR3-S	05/23/2012	ND (0.2)	ND (1.0)	909	8.16 J
C-NR3-D	05/23/2012	ND (0.2)	ND (1.0)	908	8.15 J
C-NR4-S	05/23/2012	ND (0.2)	ND (1.0)	905	8.15 J
C-NR4-D	05/23/2012	ND (0.2)	ND (1.0)	906	8.13 J
C-R22a-S	05/22/2012	ND (0.2)	ND (1.0)	905	8.16 J
C-R22a-D	05/22/2012	ND (0.2)	ND (1.0)	908	8.17 J
C-R27-S	05/22/2012	ND (0.2)	ND (1.0)	907	8.22 J
C-R27-D	05/22/2012	ND (0.2)	ND (1.0)	905	8.17 J
C-TAZ-S	05/22/2012	ND (0.2)	ND (1.0)	901	8.20 J
C-TAZ-D	05/22/2012	ND (0.2)	ND (1.0)	903	8.18 J
Shoreline Samples					
R-19	05/22/2012	ND (0.2)	ND (1.0)	908	8.22 J
R-28	05/22/2012	ND (0.2)	ND (1.0)	904	8.19 J
R63	05/22/2012	ND (0.2)	ND (1.0)	904	8.19 J
RRB	05/23/2012	ND (0.2)	ND (1.0)	908	8.16 J
Other Surface Water Monitoring Locations					
SW1	05/22/2012	ND (0.2)	ND (1.0)	931	7.41 J
SW2	05/22/2012	ND (0.2)	ND (1.0)	931	7.57 J

Notes:

µg/L micrograms per liter.
µS/cm microSiemens per centimeter.
ND not detected at listed reporting limit.
J concentration or reporting limit estimated by laboratory or data validation.

Hexavalent chromium analytical method EPA 218.6 (reporting limit 0.2 µg/L for undiluted samples).

Other analytical methods: dissolved chromium - method SW6020A, specific conductance - EPA 120.1, pH -SM4500-HB.

Table 3-5

COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, Second Quarter 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Alkalinity, bicarbonate as CaCO3 mg/L	Alkalinity, carbonate as CaCO3 mg/L	Alkalinity, total as CaCO3 mg/L	Arsenic, dissolved µg/L	Iron, Total µg/L	Iron, dissolved µg/L	Manganese, dissolved µg/L	Molybdenum, dissolved µg/L	Nitrate as Nitrogen mg/L	Selenium, dissolved µg/L	Total suspended solids mg/L
In-channel Locations												
C-BNS-D	05/22/2012	127	ND (5)	127	2.1	ND (20)	ND (20)	0.7	ND (10)	ND (0.5)	ND (10)	ND (10)
C-CON-S	05/23/2012	128	ND (5)	128	1.9	ND (20)	ND (20)	0.68	ND (10)	ND (0.5)	ND (10)	ND (10)
C-CON-D	05/23/2012	120	ND (5)	120	2.1	ND (20)	ND (20)	0.67	ND (10)	ND (0.5)	ND (10)	ND (10)
C-I-3-S	05/22/2012	125	ND (5)	125	2.1	ND (20)	ND (20)	0.65	ND (10)	ND (0.5)	ND (10)	ND (10)
C-I-3-D	05/22/2012	126	ND (5)	126	2.1	ND (20)	ND (20)	0.62	ND (10)	ND (0.5)	ND (10)	ND (10)
C-MAR-S	05/23/2012	128	ND (5)	128	2	239	ND (20)	8.4	ND (10)	ND (0.5)	ND (10)	ND (10)
C-MAR-D	05/23/2012	119	ND (5)	119	2.1	198	ND (20)	7.3	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR1-S	05/23/2012	139	ND (5)	139	2	ND (20)	ND (20)	0.78	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR1-D	05/23/2012	124	ND (5)	124	2	ND (20)	ND (20)	0.76	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR3-S	05/23/2012	119	ND (5)	119	1.9	ND (20)	ND (20)	0.7	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR3-D	05/23/2012	134	ND (5)	134	2.1	ND (20)	ND (20)	0.76	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR4-S	05/23/2012	120	ND (5)	120	1.9	ND (20)	ND (20)	0.74	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR4-D	05/23/2012	133	ND (5)	133	2	ND (20)	ND (20)	0.78	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R22a-S	05/22/2012	132	ND (5)	132	2	20.7	ND (20)	0.82	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R22a-D	05/22/2012	127	ND (5)	127	2	ND (20)	ND (20)	0.72	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R27-S	05/22/2012	122	ND (5)	122	2.1	ND (20)	ND (20)	0.79	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R27-D	05/22/2012	112	ND (5)	112	2.1	ND (20)	ND (20)	0.73	ND (10)	ND (0.5)	ND (10)	ND (10)
C-TAZ-S	05/22/2012	118	ND (5)	118	2	ND (20)	ND (20)	0.66	ND (10)	ND (0.5)	ND (10)	ND (10)
C-TAZ-D	05/22/2012	128	ND (5)	128	2.1	ND (20)	ND (20)	0.58	ND (10)	ND (0.5)	ND (10)	ND (10)
Shoreline Samples												
R-19	05/22/2012	133	ND (5)	133	2	37.4	ND (20)	1.2	ND (10)	ND (0.5)	ND (10)	ND (10)
R-28	05/22/2012	124	ND (5)	124	2.1	29.4	ND (20)	1.1	ND (10)	ND (0.5)	ND (10)	ND (10)
R63	05/22/2012	117	ND (5)	117	2	26.6	ND (20)	2.6	ND (10)	ND (0.5)	ND (10)	ND (10)
RRB	05/23/2012	130	ND (5)	130	2	32.6	ND (20)	2.9	ND (10)	ND (0.5)	ND (10)	ND (10)

Notes:

µg/L micrograms per liter.
mg/L milligrams per liter.
ND not detected at listed reporting limit.
J concentration or reporting limit estimated by laboratory or data validation.
COPC Chemical of Potential Concern.

Methods:
Alkalinity - SM2320B.
Metals - SW6010B/SW6020A.
Nitrate - EPA 300.0.
Total Suspended Solids - SM2540D.

TABLE 4-1
Pumping Rate and Extracted Volume for IM System, Second Quarter 2012
Second Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Extraction Well ID	April 2012		May 2012		June 2012		Second Quarter 2012	
	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0
TW-02D	0.00	0	0.00	0	0.00	0	0.00	0
TW-03D	94.22	4,070,373	106.35	4,747,379	108.05	4,667,629	102.87	13,485,382
PE-01	21.27	918,734	25.84	1,153,512	25.77	1,113,252	24.29	3,185,498
TOTAL	**115.5**	**4,989,107**	**132.2**	**5,900,892**	**133.8**	**5,780,881**	**127.2**	**16,670,880**

Chromium Removed This Quarter (kg)	50.7
Chromium Removed Project to Date (kg)	3,238.4
Chromium Removed This Quarter (lb)	111.7
Chromium Removed Project to Date (lb)	7,139.5

NOTES:
gpm gallons per minute.
gal gallons.
ac-ft acre-feet.
lbs pounds.
kg kilograms.

a The "Average Pumping Rate" is the overall average during the reporting period, including system downtime, based on flow meter readings.

Chromium removed includes the period of March 1, 2012 through May 31, 2012. On July 23, 2010 DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from March 1, 2012 through May 31, 2012.

Table 4-2
Analytical Results for Extraction Wells, January 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)	Total Dissolved Solids (mg/L)
TW-3D	04-Jan-11	1,200 LF	1,100	5,550
	01-Feb-11	1,100 LF	1,000	4,700
	01-Mar-11	1,320 LF	1,090	5,380
	05-Apr-11	1,220 LF	1,130	5,120
	02-May-11	1,070 LF	1,100	5,080
	07-Jun-11	1,090 LF	1,030	5,120
	05-Jul-11	953 LF	1,130	5,020
	02-Aug-11	948 LF	991	5,120
	06-Sep-11	992 LF	1,000	5,140
	04-Oct-11	1,010 LF	991	5,040
	01-Nov-11	1,070 LF	1,060	4,880
	06-Dec-11	1,150 LF	1,080	4,650
	03-Jan-12	1,080 LF	938	5,040
	07-Feb-12	1,040 LF	987	5,240
	06-Mar-12	1,250 LF	1,040	5,300
	03-Apr-12	929 LF	937	5,300
	01-May-12	990 LF	951	5,230
	05-Jun-12	906 LF	922	4,760
PE-1	04-Jan-11	16.6 LF	17.5	3,110
	01-Feb-11	13.4 LF	15.4	3,120
	01-Mar-11	15.2 LF	12.9	3,200
	05-Apr-11	10.0 LF	10.5	2,920
	02-May-11	10.5 LF	9.90	3,100
	07-Jun-11	11.0 LF	9.50	3,190
	05-Jul-11	7.60 J LF	10.2 J	3,120
	02-Aug-11	8.80 LF	9.00	3,060
	06-Sep-11	9.00 LF	9.50	2,860
	04-Oct-11	10.1 LF	11.1	2,900
	01-Nov-11	10.3 LF	10.3	2,790
	06-Dec-11	10.8 LF	10.9	2,930
	03-Jan-12	12.3 LF	11.6	2,960
	07-Feb-12	9.90 LF	9.20	2,840
	06-Mar-12	9.00 LF	7.90	2,960
	03-Apr-12	7.50 LF	7.40	2,800
	01-May-12	7.70 LF	6.90	2,960
	05-Jun-12	6.80 LF	6.50	2,840

Table 4-2
Analytical Results for Extraction Wells, January 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

NOTES:

µg/L = concentration in micrograms per liter.
mg/L = concentration in milligrams per liter.
LF = lab filtered.
J = concentration or reporting limit estimated by laboratory or data validation.

Groundwater samples from active extraction wells are taken at sample taps in Valve Vault 1 on the MW-20 Bench.

Dissolved chromium was analyzed by Method SW6020A or EPA200.8 or EPA200.7, hexavalent chromium analyzed by Method SM3500-CrB or EPA218.6 and total dissolved solids were analyzed by Method SM2540C.

TABLE 4-3
Average Hydraulic Gradients, Second Quarter 2012
Second Quarter 2012 Interim Measure Performace Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well Pair [a]	Reporting Period	Mean landward Hydraulic Gradient (feet/foot) [b]	Days in Monthly Average [c]
Overall Average	April	0.0035	NA
	May	0.0051	NA
	June	0.0051	NA
Northern Gradient Pair MW-31-135 / MW-33-150	April	0.0022	30 / 30
	May	0.0021	31 / 31
	June	0.0022	30 / 30
Central Gradient Pair MW-45-95 / MW-34-100	April	0.0056	30 / 30
	May	0.0097	31 / 31
	June	0.0096	30 / 30
Southern Gradient Pair MW-45-95 / MW-27-85	April	0.0027	22 / 30
	May	0.0035	31 / 31
	June	0.0036	30 / 30

NOTES:

NA = All available data used in calculating overall average except where noted.

a Refer to Figure 1-4 for location of well pairs.
b For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot.
c Number of days transducers in both wells were operating correctly / Total number of days in month.

Data for MW-27-085 unavailable from April 2, 2012 through April 11, 2012 due to equipment malfunction.

TABLE 4-4
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
Second Quarter 2012 Interim Measures Performance Monitoring and
Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	Davis Dam Release			Colorado River Elevation at I-3		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
January 2010	9,900	7,415	2,485	453.9	453.36	-0.5
February 2010	7,700	7,961	-261	453.0	453.41	0.4
March 2010	14,700	14,014	686	455.5	455.40	-0.1
April 2010	16,100	14,762	1,338	455.3	455.94	0.7
May 2010	15,500	15,246	254	456.2	456.41	0.3
June 2010	15,800	15,332	468	456.4	456.45	0.0
July 2010	14,500	14,841	-341	455.9	456.34	0.4
August 2010	13,500	13,627	-127	455.4	455.87	0.5
September 2010	13,400	13,555	-155	455.2	455.79	0.6
October 2010	12,300	12,463	-163	454.7	455.41	0.7
November 2010	10,900	10,597	303	454.3	454.92	0.6
December 2010	9,800	9,286	514	453.9	453.86	-0.1
January 2011	7,700	8,172	-472	453.1	453.34	0.2
February 2011	11,000	10,547	453	454.2	454.38	0.2
March 2011	15,900	15,875	25	455.9	456.22	0.3
April 2011	17,900	17,595	305	456.9	457.02	0.2
May 2011	16,400	15,437	963	456.6	456.40	-0.2
June 2011	16,100	16,024	76	456.5	456.75	0.2
July 2011	15,500	15,333	167	456.3	456.30	0.1
August 2011	13,300	13,368	-68	455.4	455.67	0.3
September 2011	12,700	12,052	648	455.2	455.25	0.1
October 2011	9,200	9,934	-734	453.9	454.30	0.4
November 2011	8,600	7,838	762	453.7	453.61	-0.1
December 2011	6,600	6,262	338	452.6	452.49	-0.1
January 2012	9,800	10,378	-578	453.7	453.99	0.3
Febraury 2012	12,300	12,614	-314	454.8	455.25	0.4
March 2012	14,800	15,134	-334	455.8	455.88	0.1
April 2012	18,300	18,330	-30	457.1	457.33	0.2
May 2012	15,900	15,938	-38	456.4	456.63	0.2
June 2012	15,900	15,996	-96	456.4	456.59	0.2
July 2012	14,500			456.0		

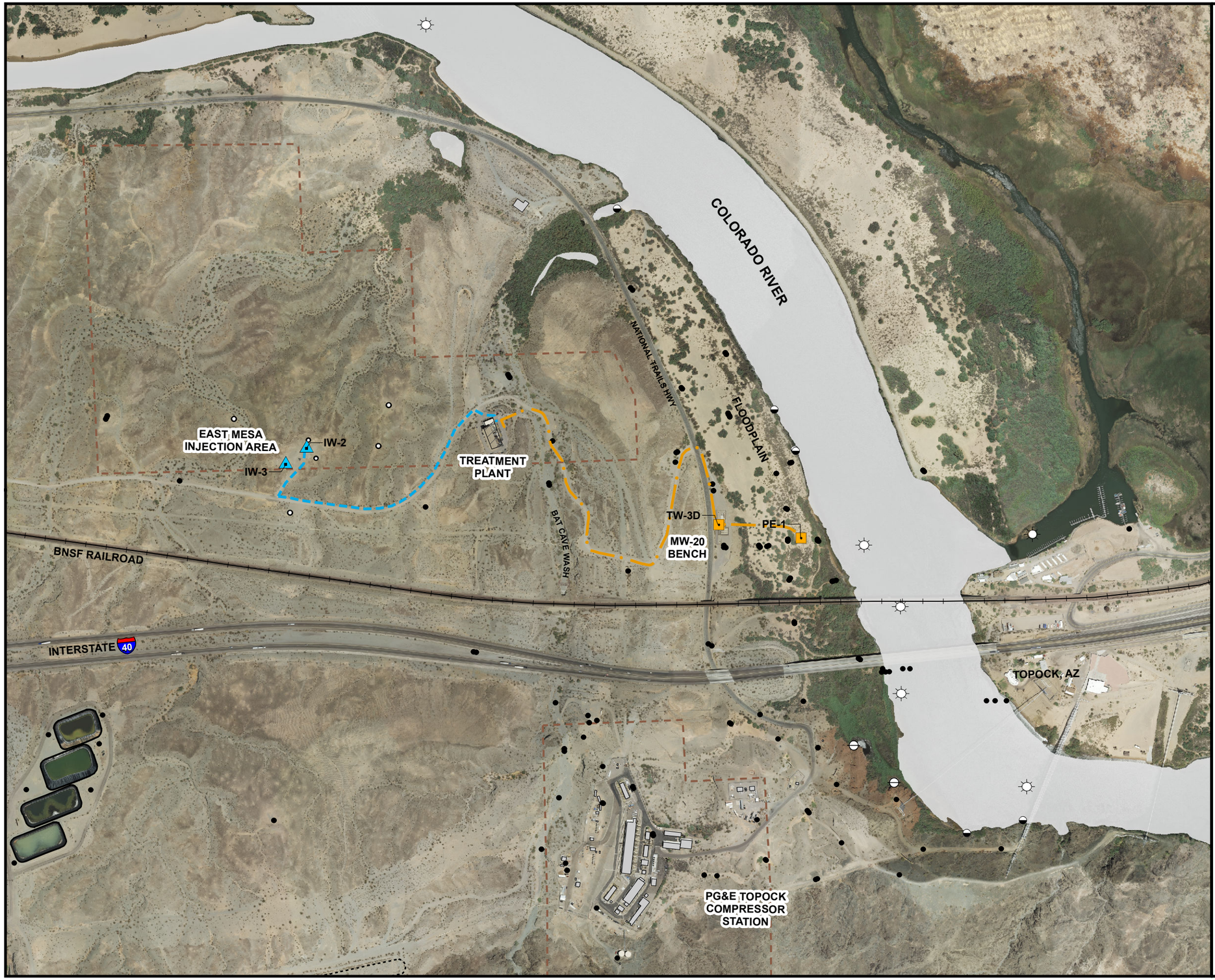
NOTES:
cfs = cubic feet per second; ft amsl = feet above mean sea level.

Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon July 2012 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf.

The difference in I-3 elevation is the difference between the I-3 elevation predicted and the actual elevation measured at I-3. The source of this difference is differences between BOR projections and actual dam releases/Havasu reservoir levels, rather than the multiple regression error.

For data prior to 2010 please see: *Fourth Quarter 2011 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station,* Needles, California (CH2MHILL, 2012a)

Figures



VICINITY MAP



LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in Site-Wide Groundwater Monitoring Program (GMP)
- Monitoring Well in IM-3 Compliance Monitoring Program
- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- Groundwater Extraction/Influent Pipeline
- Treatment Plant Effluent Pipeline
- Property Line

Note: 1. Location map shows Interim Measure No. 3 (IM-3) active facilities as of current report

2. See Figures 1-2 and 1-3 for complete monitoring locations and identifications.

N

0 600 1,200 Feet

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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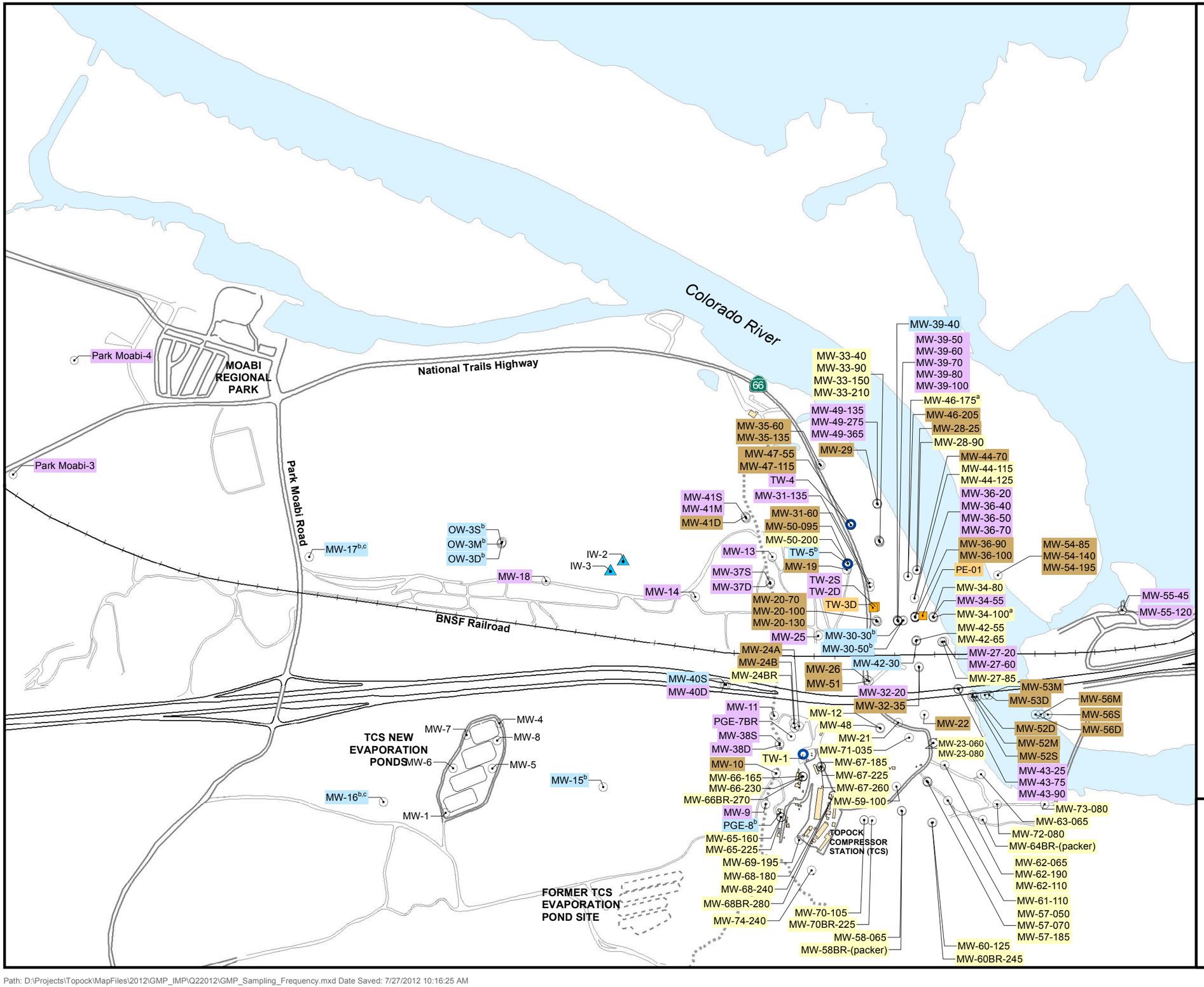

LEGEND

- Injection Well
- Groundwater Monitoring Well
- Test Well or Supply Well (inactive)
- Extraction Well

Sampling Frequency for Groundwater Monitoring Program (GMP)

MW-17	Biennial Sampling
MW-9	Annual Sampling
MW-22	Semiannual Sampling
MW-12	Quarterly Sampling
TW-3D	Monthly Sampling

Notes:

[a] Monthly sampling November through February, otherwise quarterly.

[b] These wells required to be sampled biennially, will be sampled annually for the water quality snapshot.

[c] Background metals collected semiannually.

N

0 500 1,000 Feet

California State Plane NAD83 Zone 5 US Feet

FIGURE 1-2
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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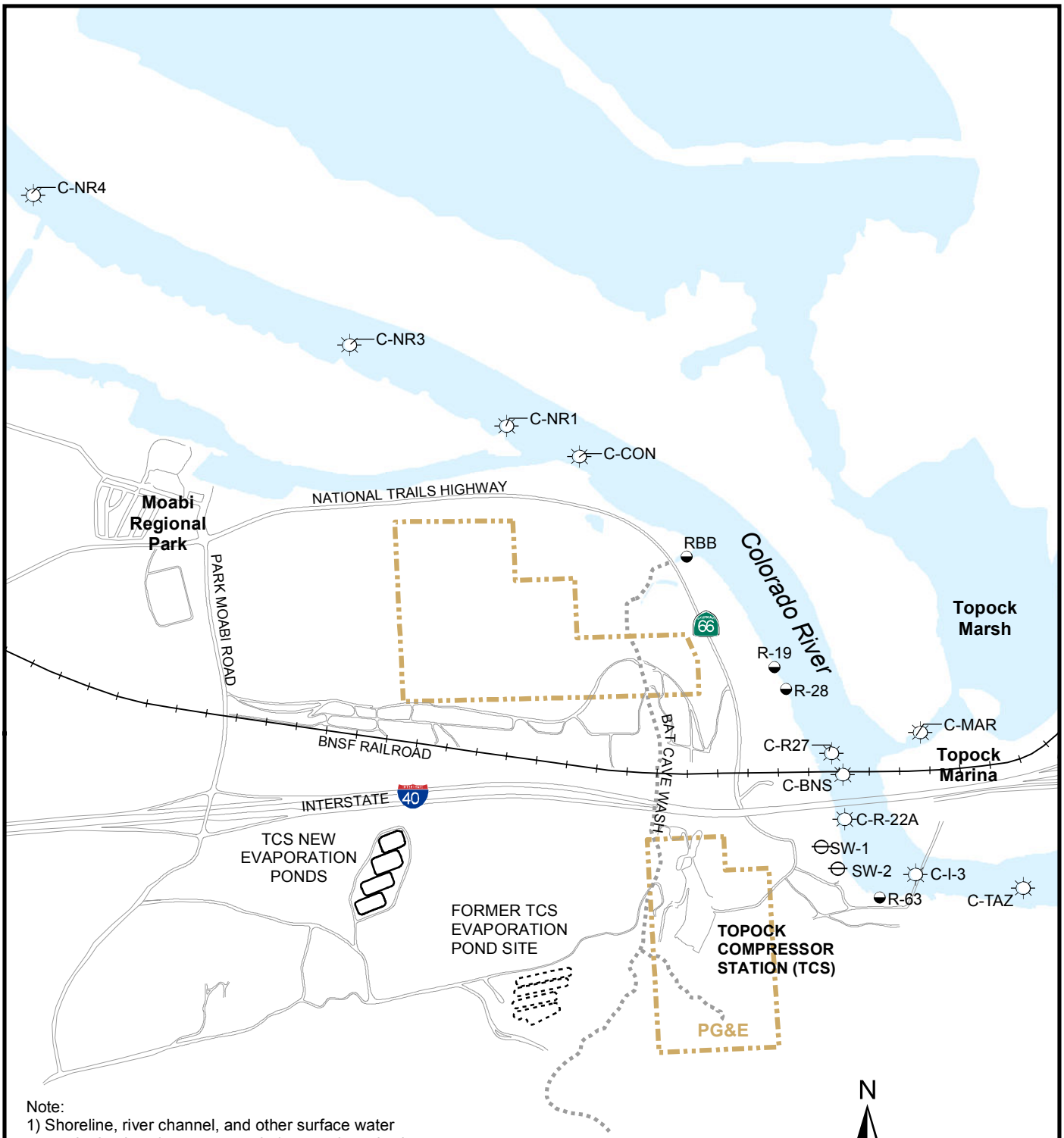

Note:
1) Shoreline, river channel, and other surface water monitoring locations are sampled quarterly and twice during periods of low river stage (typically November - January).
2) Location for SW-2 is approximate. GPS Coverage was not available.
3) RMP = River Monitoring Program

LEGEND

- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location

FIGURE 1-3
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR RMP

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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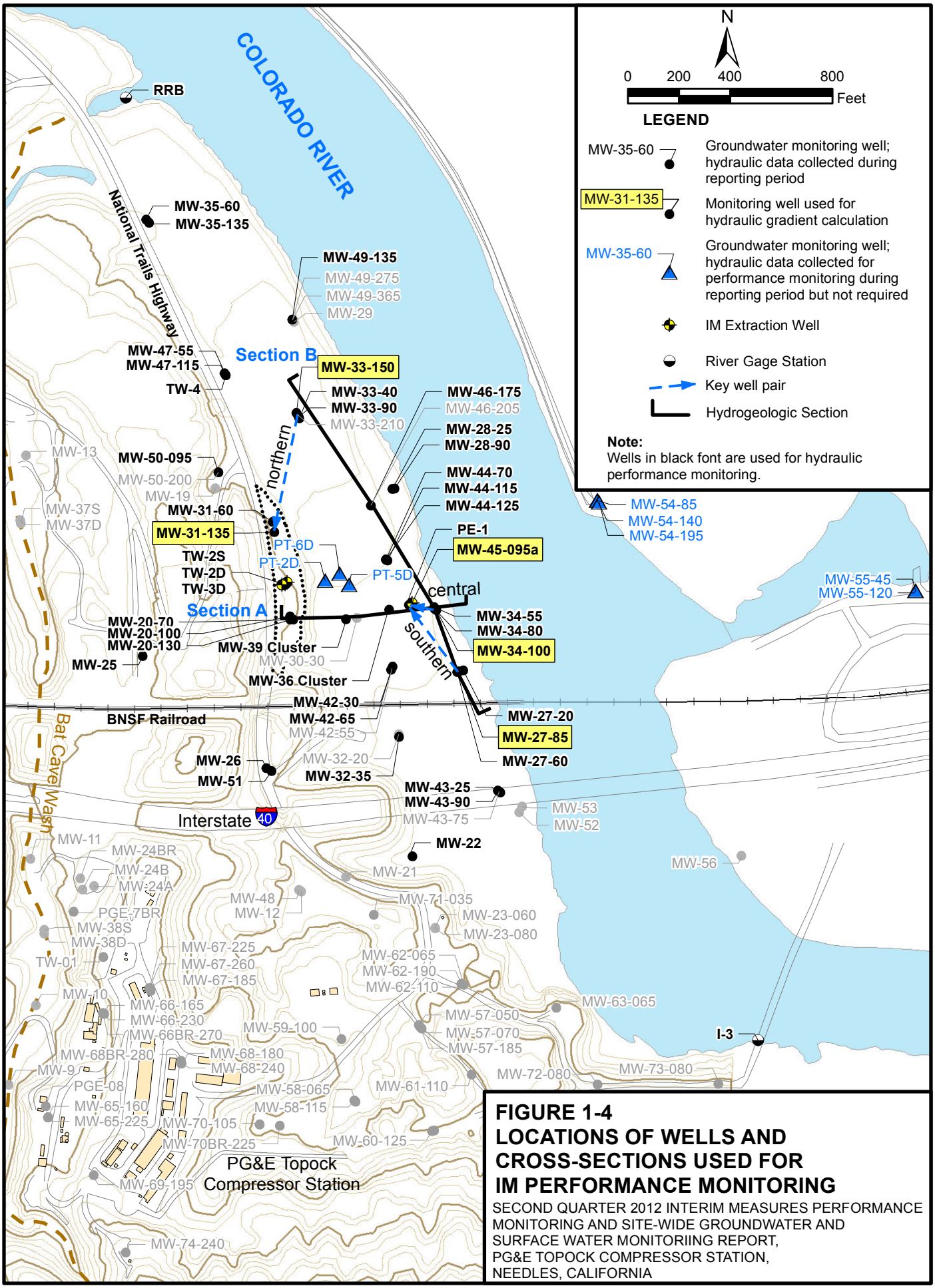

FIGURE 1-4
LOCATIONS OF WELLS AND CROSS-SECTIONS USED FOR IM PERFORMANCE MONITORING

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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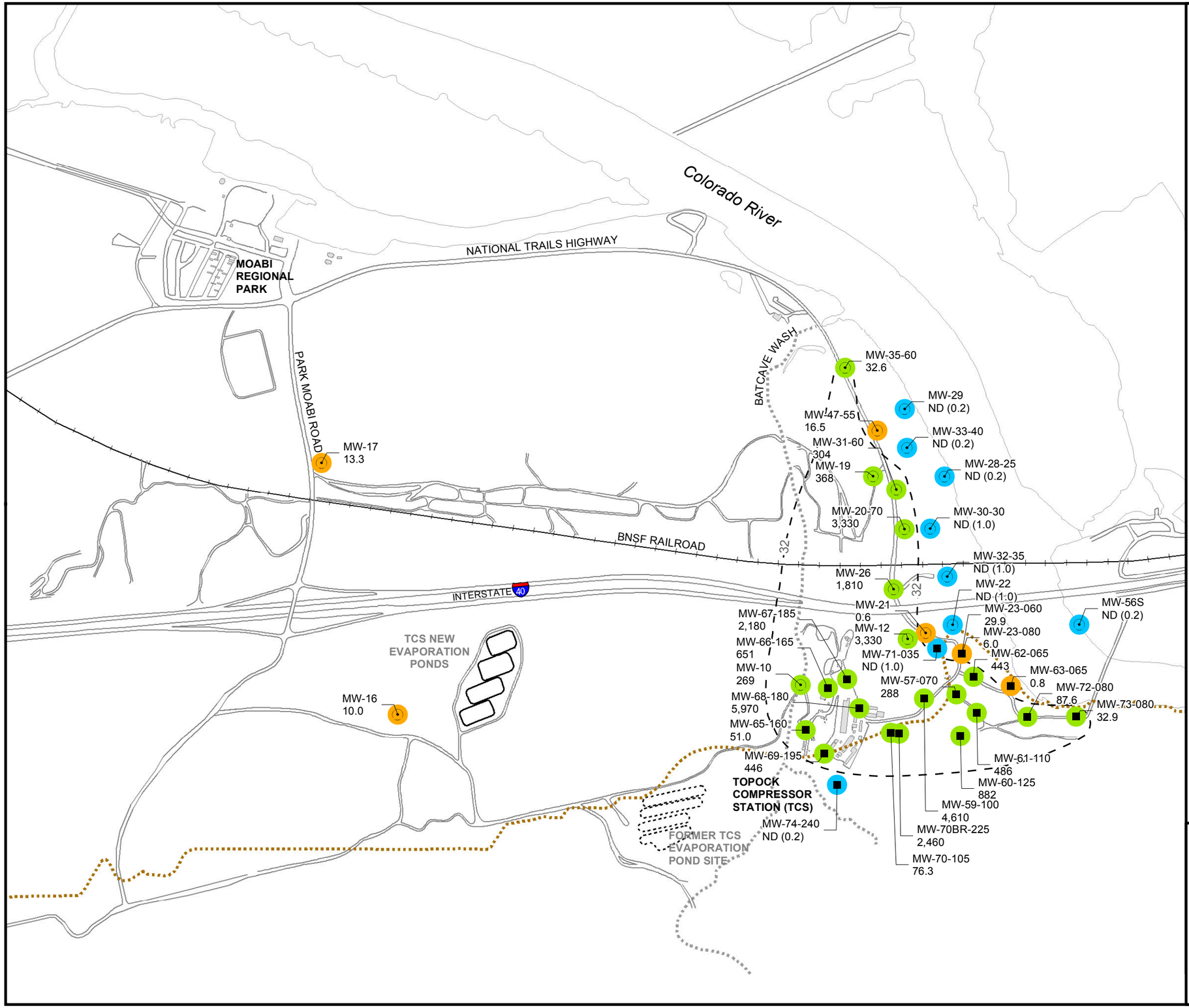

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Shallow zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations - Second Quarter 2012

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Second Quarter 2012 groundwater sampling results.

Approximate bedrock contact at 455 feet above mean sea level.

Notes:

1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1a
Cr(VI) SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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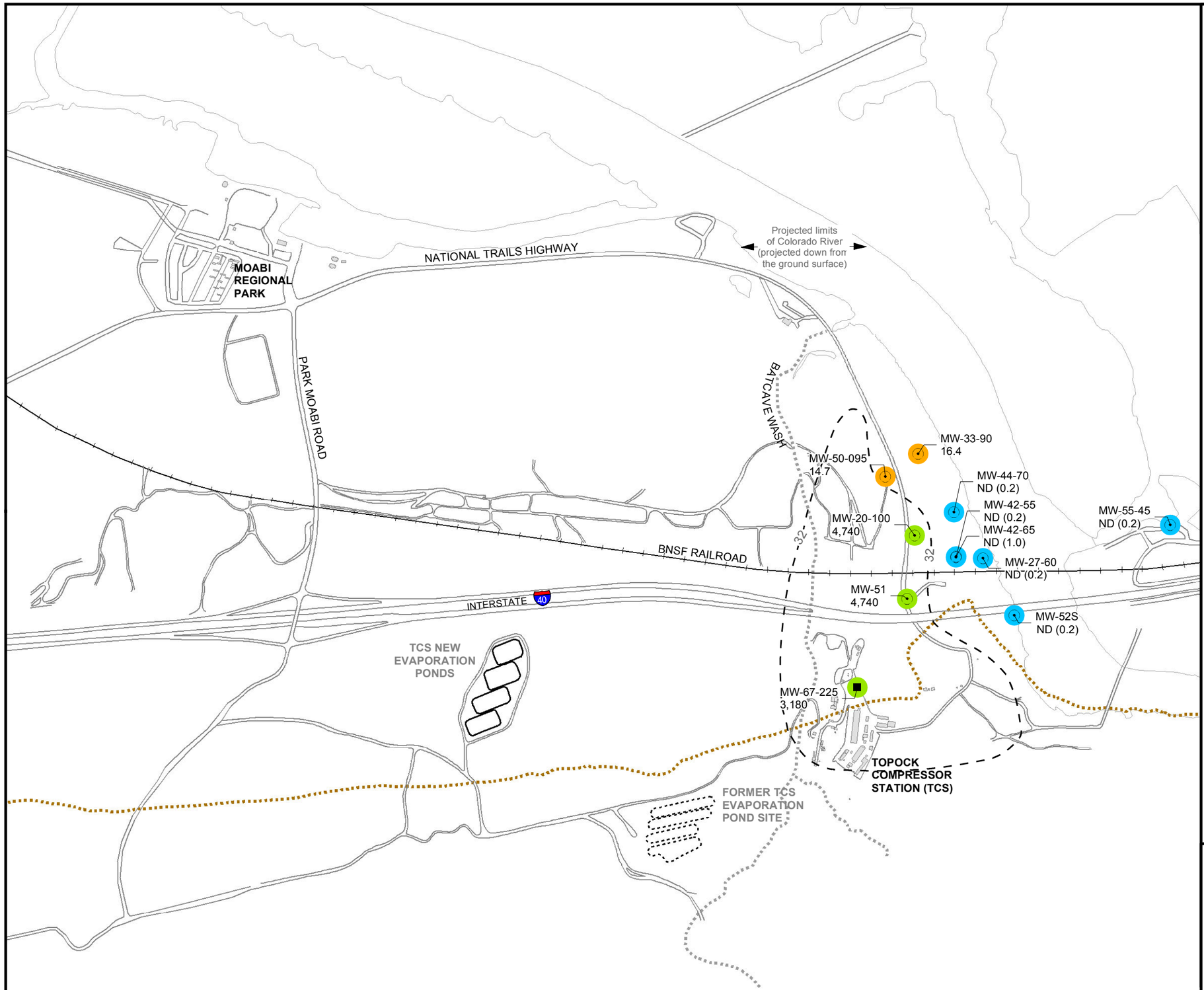

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Mid-Depth zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations - Second Quarter 2012

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

- Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Second Quarter 2012 groundwater sampling results.
- Approximate bedrock contact at 425 feet above mean sea level.

Note:
1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1b
Cr(VI) SAMPLING RESULTS MID-DEPTH WELLS IN ALLUVIAL AQUIFER AND BEDROCK, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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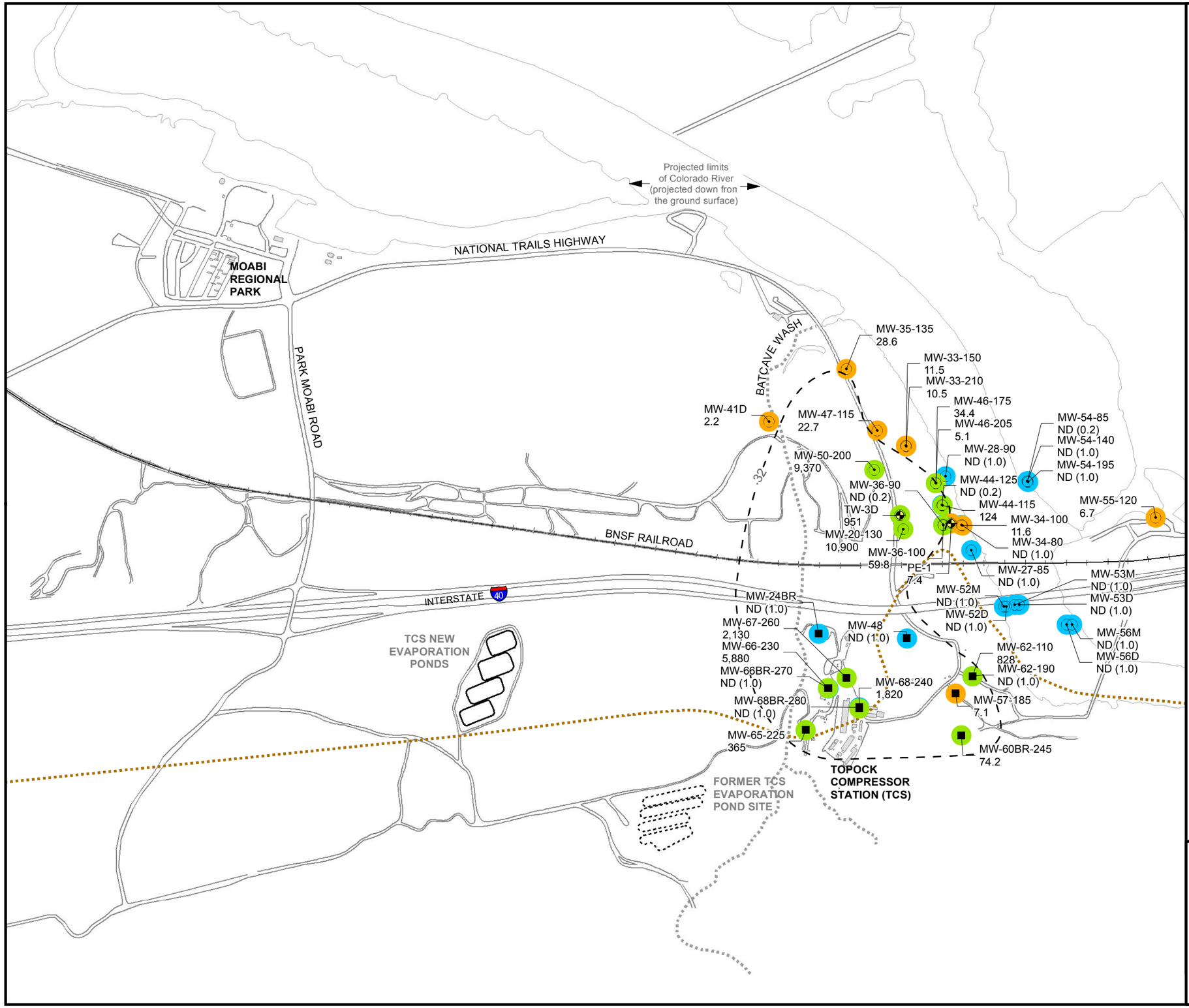

LEGEND

- Extraction well sampled during sampling event
- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Deep zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations - Second Quarter 2012

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

32 Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Second Quarter 2012 groundwater sampling results.

Approximate bedrock contact at 395 feet above mean sea level.

Notes:

1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. In the floodplain area, the 32 µg/L line for Cr(VI) in deep zone (80-90 feet below Colorado River) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.
3. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000

Feet

FIGURE 3-1c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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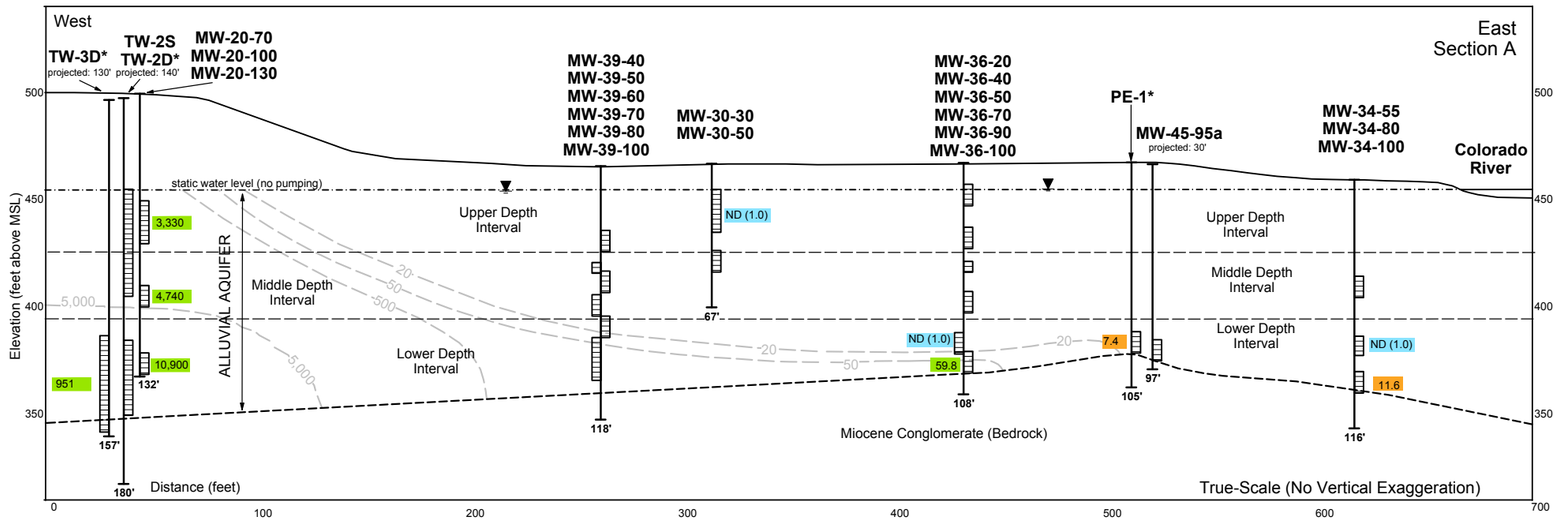
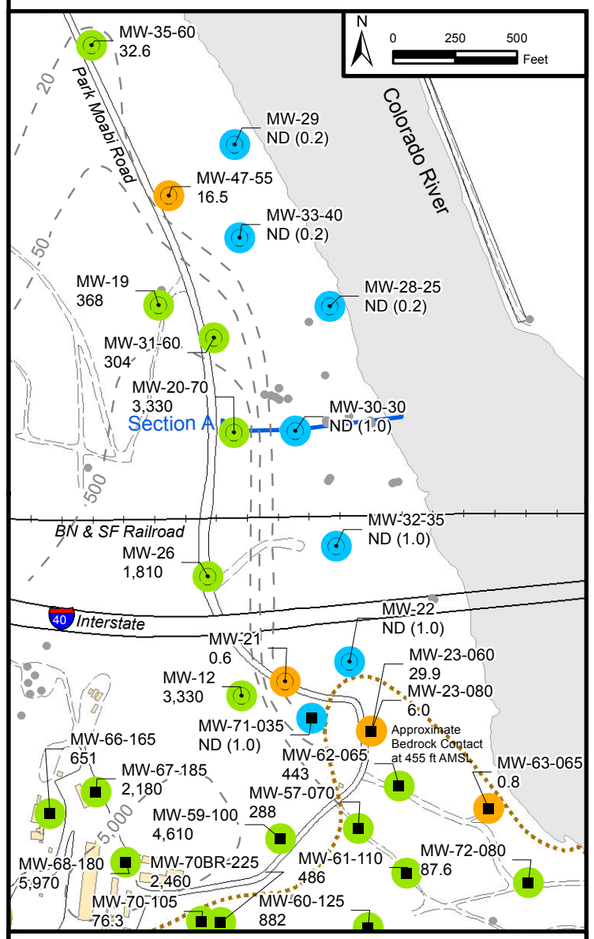
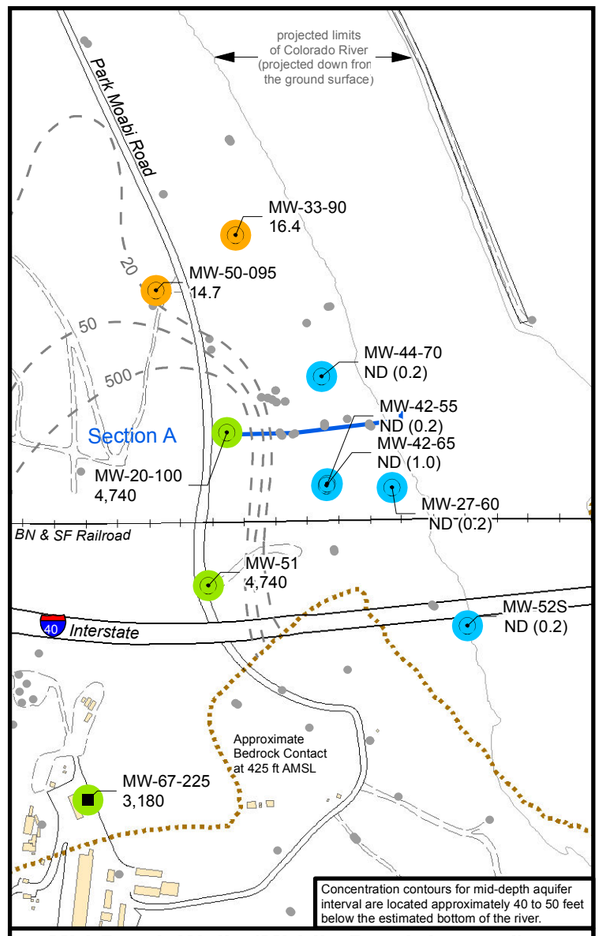
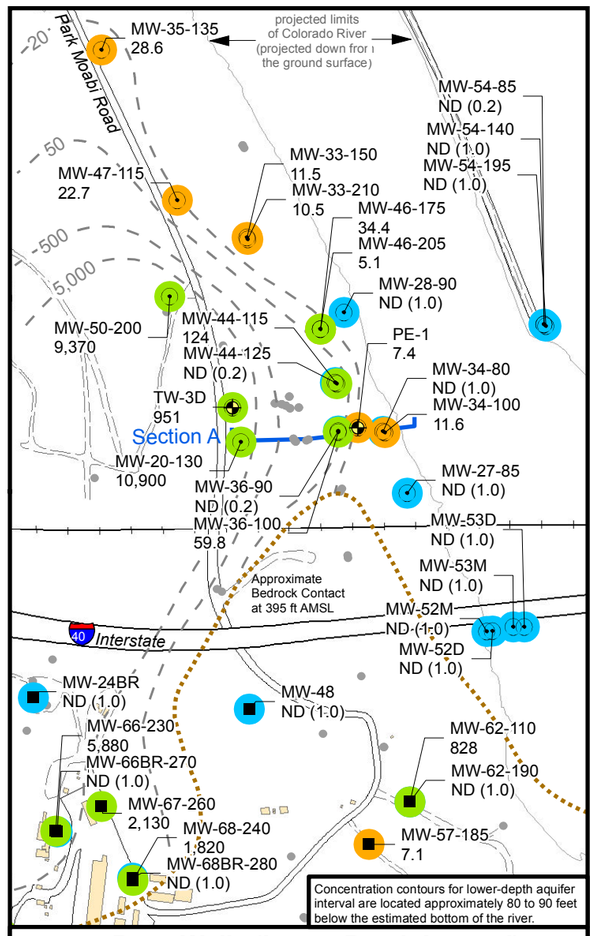




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Middle-Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event
- Well not sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L). Results posted are maximum Cr(VI) concentrations.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations - Second Quarter 2012

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

50 Inferred Cr(VI) concentration contour within Alluvial aquifer depth interval based on Second Quarter 2012 groundwater sampling results.

Hydrogeologic Section A

Approximate bedrock contact

NOTES ON CONTOUR MAPS

1. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with DTSC's 2005 IM performance monitoring directive. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 ug/L in the floodplain portion of the Alluvial Aquifer.
2. Extraction wells PE-1, TW-2D and TW-3D are not included in contouring. These wells draw water from a larger area and do not represent Cr(VI) concentrations at their specific locations.
3. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

FIGURE 4-1
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER AND BEDROCK, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORIING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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North

South
Section B

Cross-Section Parallel to the Colorado River

BN & SF
Railroad

MW-33-40
MW-33-90
MW-33-150
MW-33-210

MW-46-175
MW-46-205

MW-28-25
MW-28-90
projected: 110'

MW-44-70
MW-44-115
MW-44-125

MW-34-55
MW-34-80
MW-34-100

MW-27-20
MW-27-60
MW-27-85

Elevation (feet above MSL)

700
600
500
400
300
200
100
0

water table (average 455' MSL)

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

Approximate geologic contact
between alluvial fan
and fluvial deposits

ND (0.2)
16.4
11.5
10.5
237'

ND (0.2)
ND (0.2)
34.4
5.1
216'

20
50

ND (0.2)
124
ND (0.5)
134'

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval
ND (1.0)
11.6
116'

ND (1.0)
107'

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

-100
0
100
200
300
400
500
600
700
800
900
1,000
1,100
1,200
1,300
1,400

Distance (feet)

Notes:
ND = Not detected at listed reporting limit.

See Table 3-1 for additional sampling data and prior results for wells on this figure.

See Figure 1-4 for location of this cross-section.

water level
well screen
3,810
boring depth (feet)
103'

-— — 50 -— —
Inferred hexavalent chromium contours (ppb) in Alluvial Aquifer from Second Quarter 2012.

Hexavalent Chromium [Cr(VI)]
concentration in micrograms per liter (µg/L),
equivalent to parts per billion (ppb).

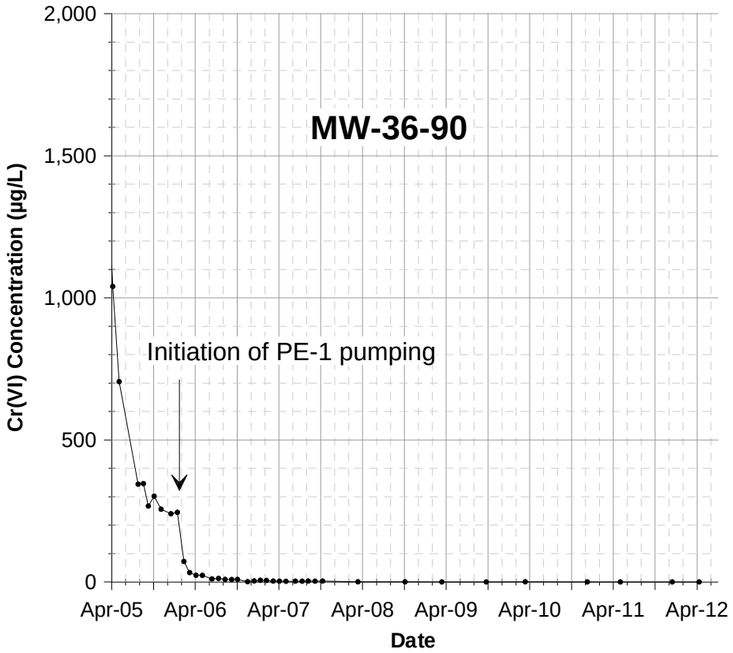
ND (0.2)	Not detected at listed reporting limit (ppb)
24.2	Less than 32 µg/L
203	Greater than 32 µg/L

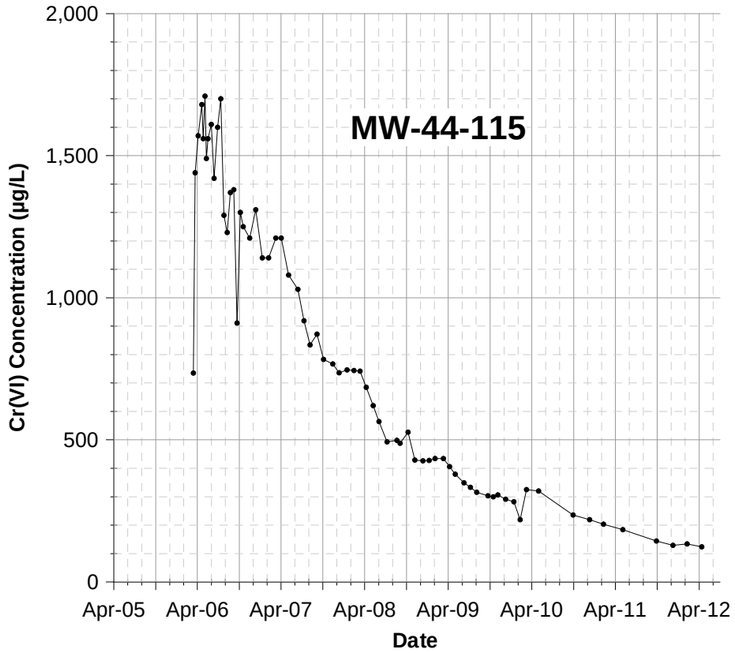
FIGURE 4-2
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B,
SECOND QUARTER 2012

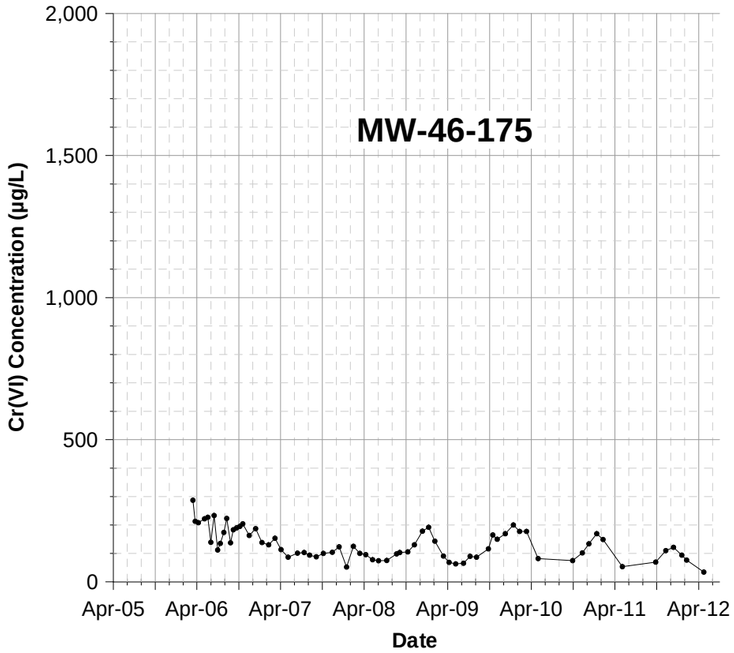
SECOND QUARTER 2012 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

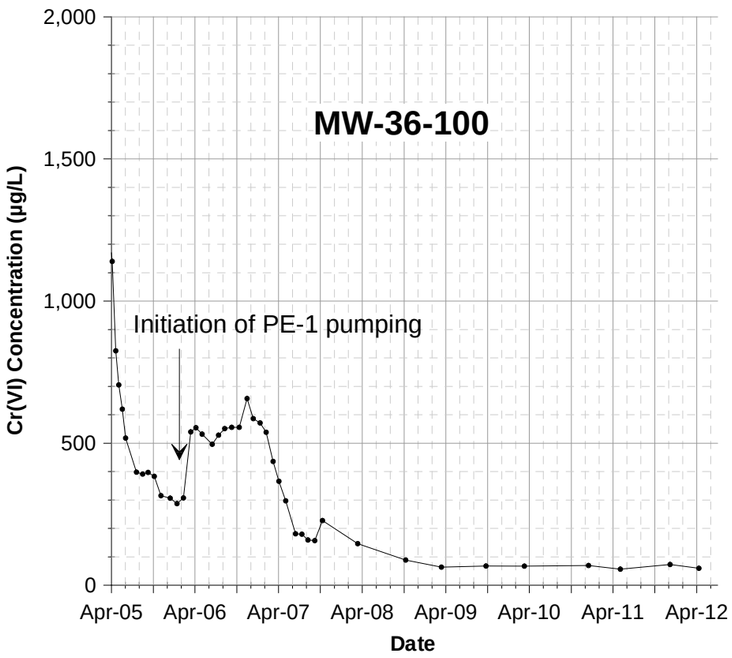
CH2MHILL

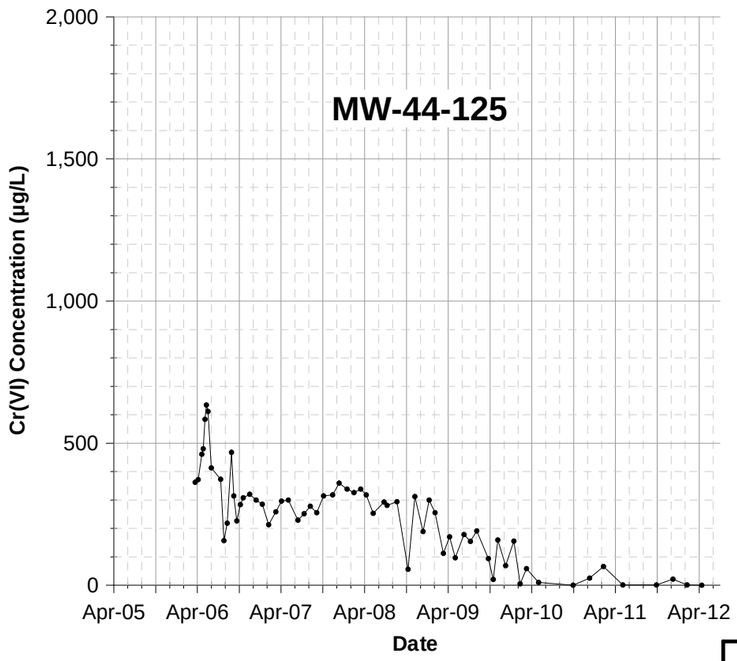
C:\USERS\E2USER\DOCUMENTS\TOPOCK\GINT\2012_2Q\FIGURE_4-2_XSECB_CR.GDW;

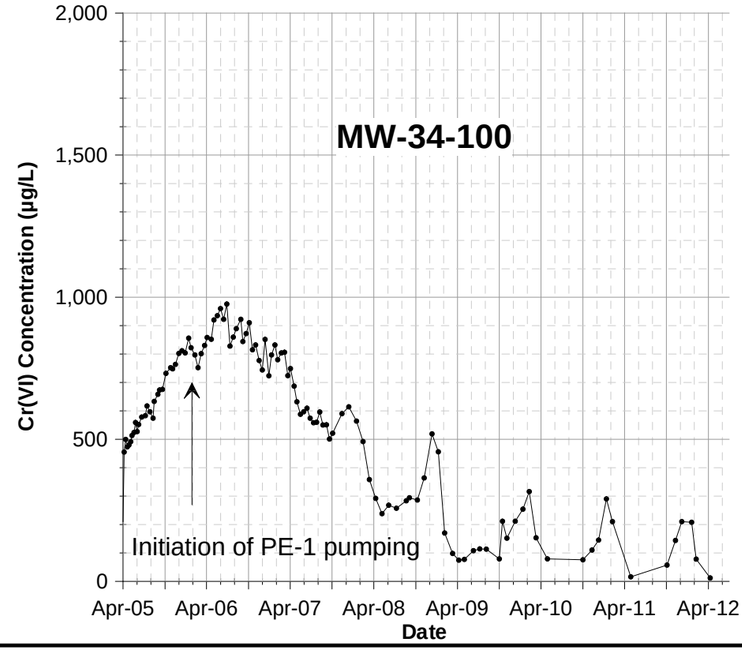












Notes
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west of PE-1. MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.

FIGURE 4-3
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS, APRIL 2005 THROUGH JUNE 2012
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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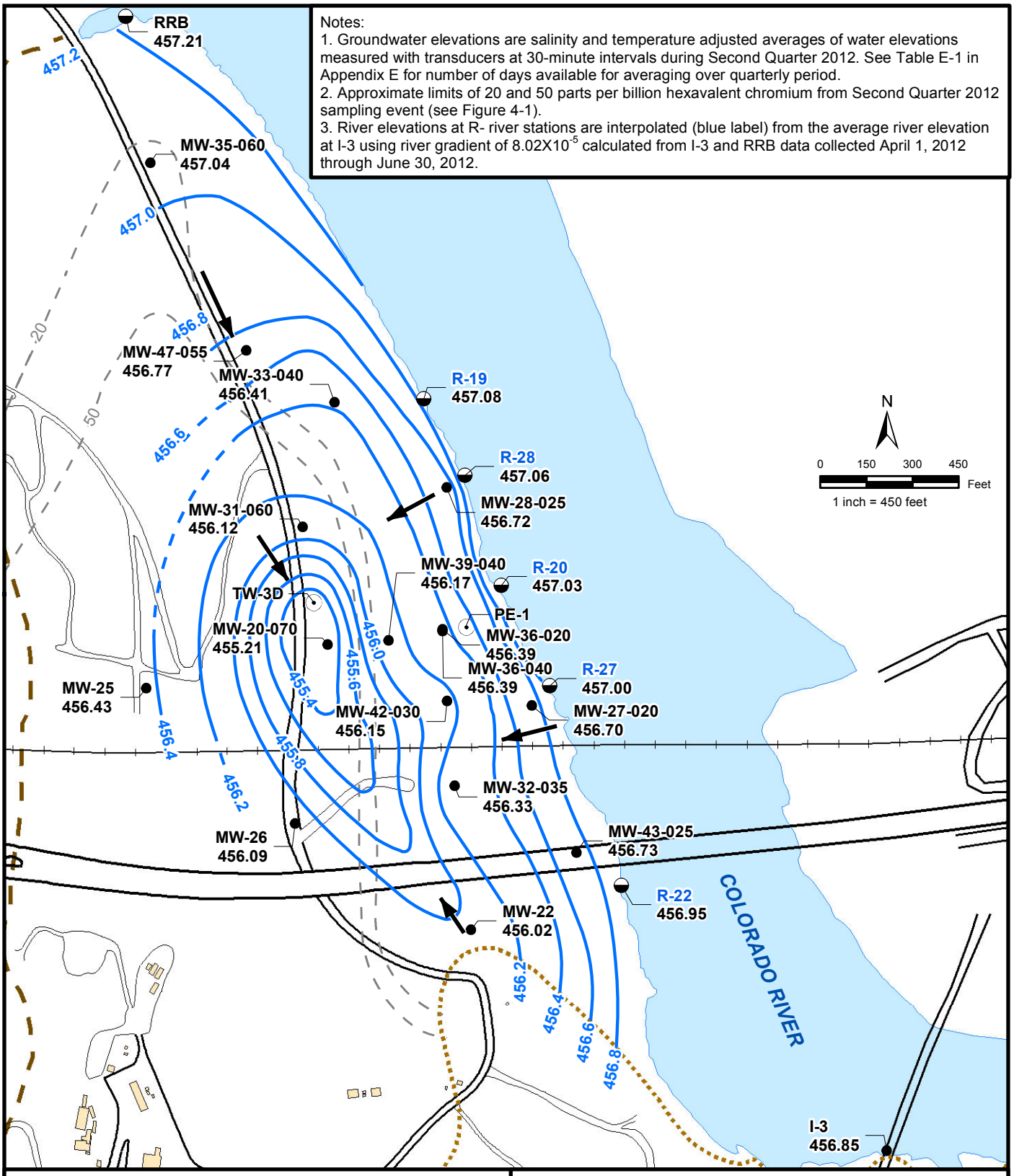

FIGURE 4-4a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNA

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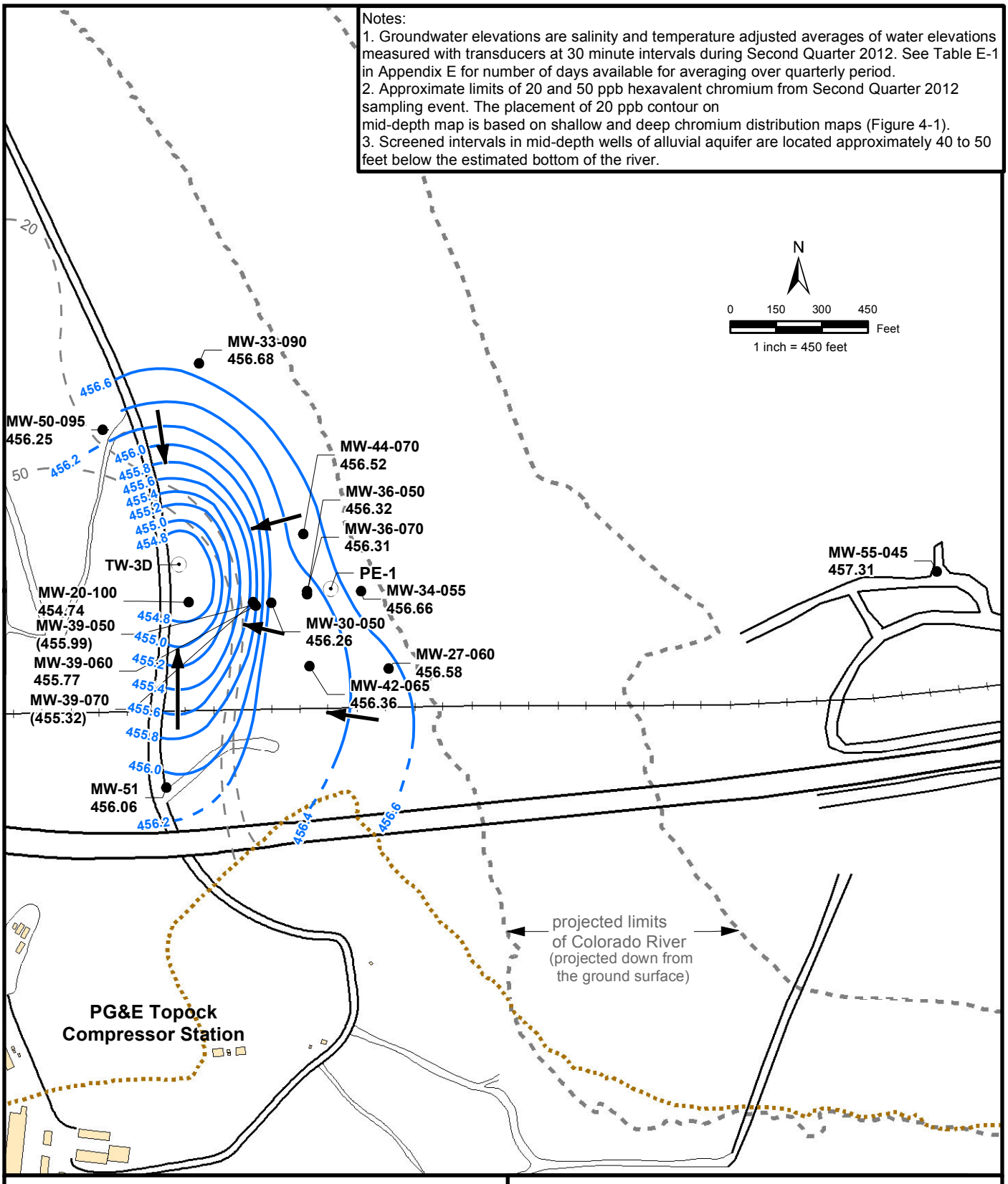

FIGURE 4-4b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNA

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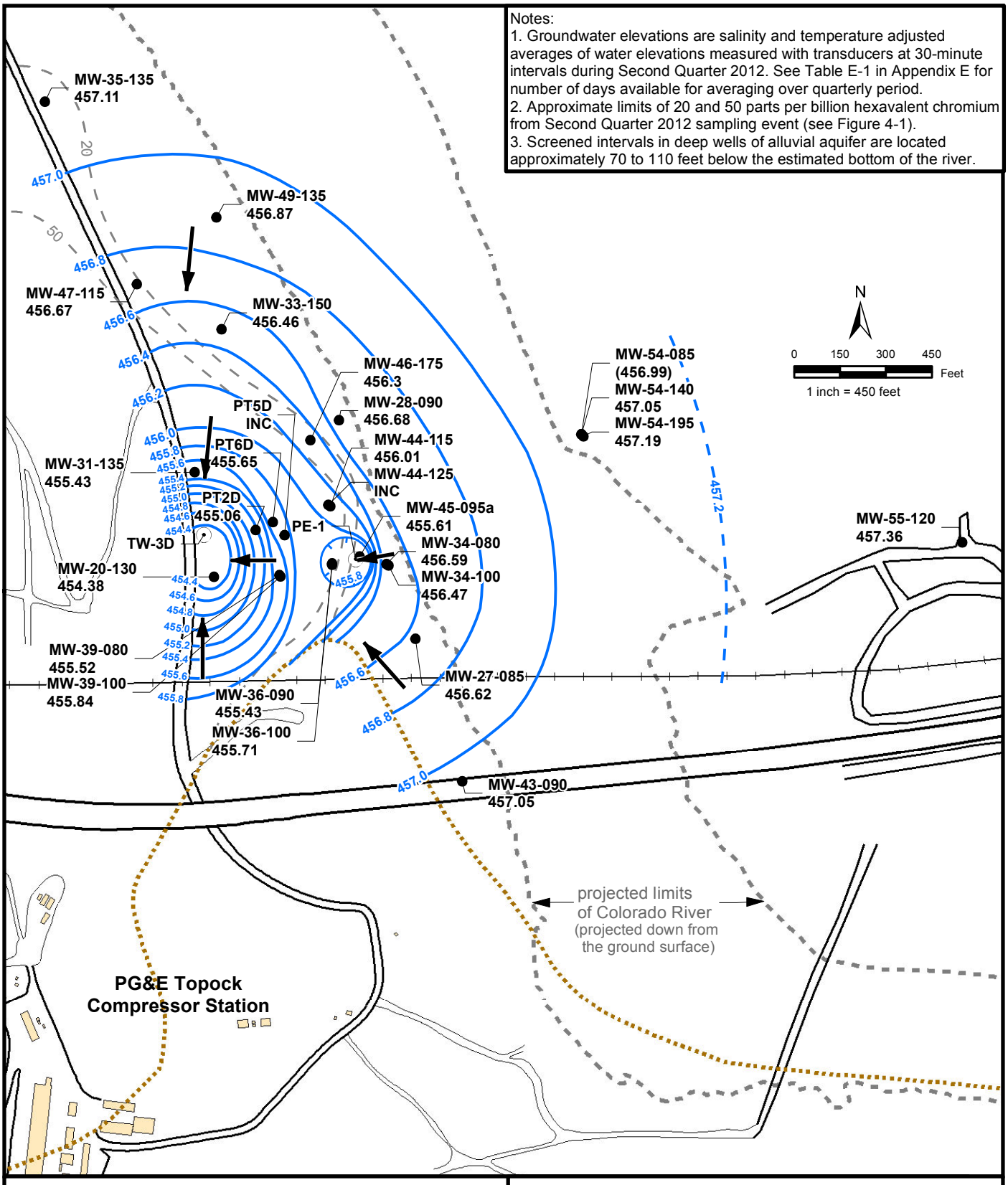

FIGURE 4-4c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNA

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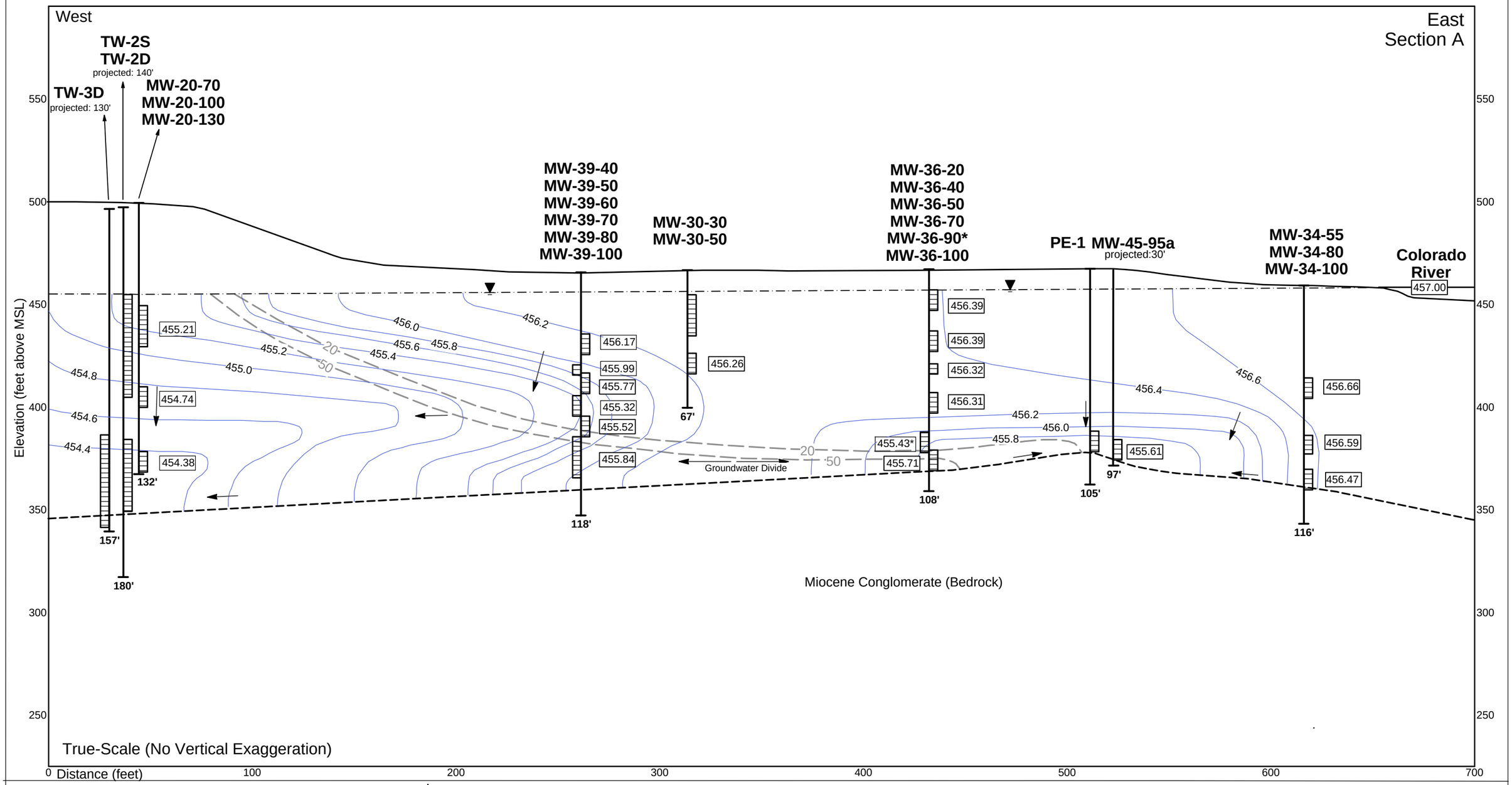

Notes:
Results show average groundwater elevations for April 1, 2012 through June 30, 2012 measured with transducers at 30 minute intervals.

Groundwater elevations adjusted for salinity and temperature.
Well MW-36-90* is excluded from contouring.
River elevation (R-27) is the calculated average river level based upon the river gradient between RRB and I-3.

Legend:

MW-30-50 — Inferred water table — well screen — 455.23 — 103 boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer from Second Quarter 2012.

Average groundwater head (ft AMSL)

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 4-5
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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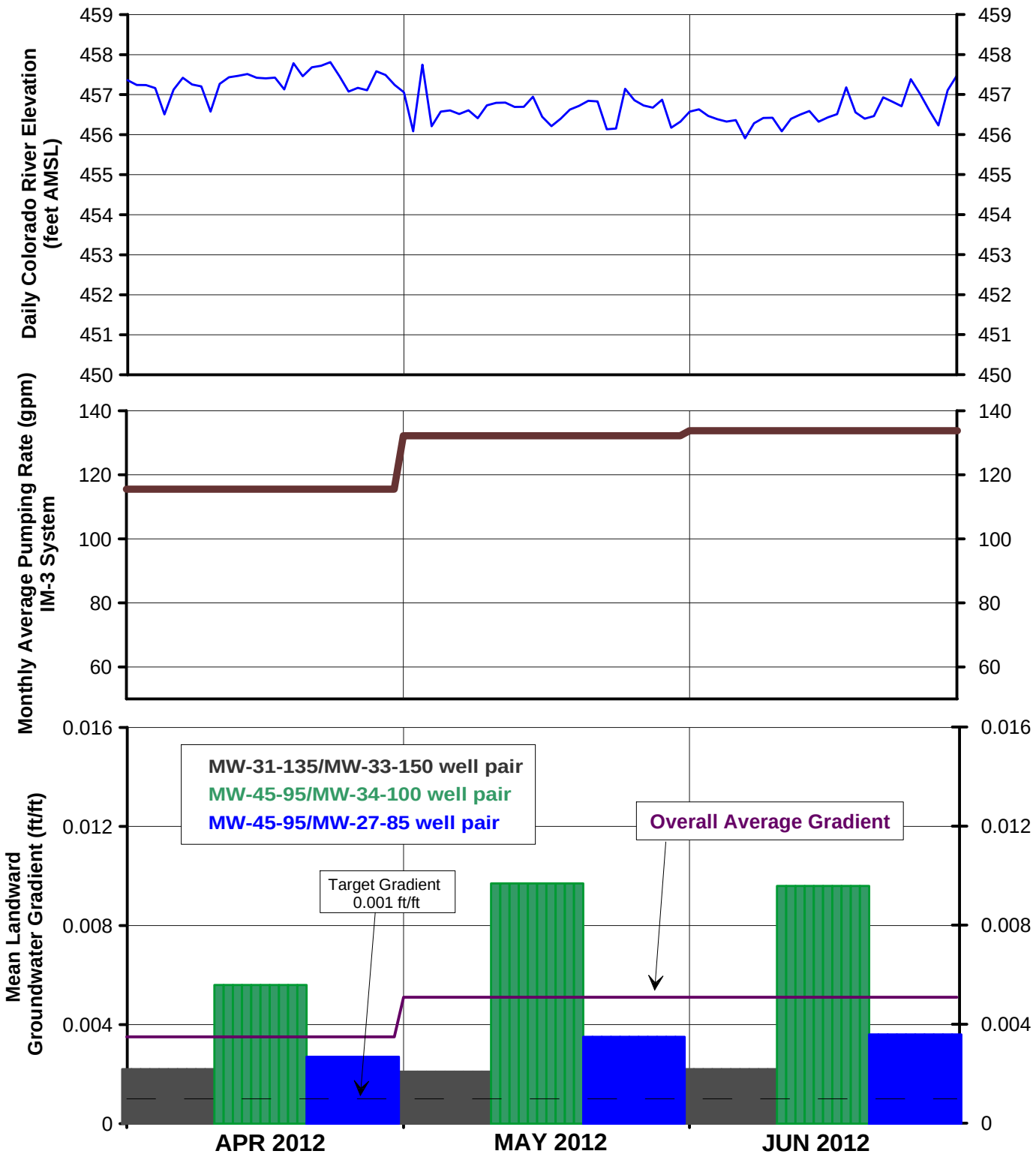
C:\USERS\E2USER\DOCUMENTS\TOPOCK\GINT\2012_2Q\FIGURE_4-5_XSECA_GW.GDW;



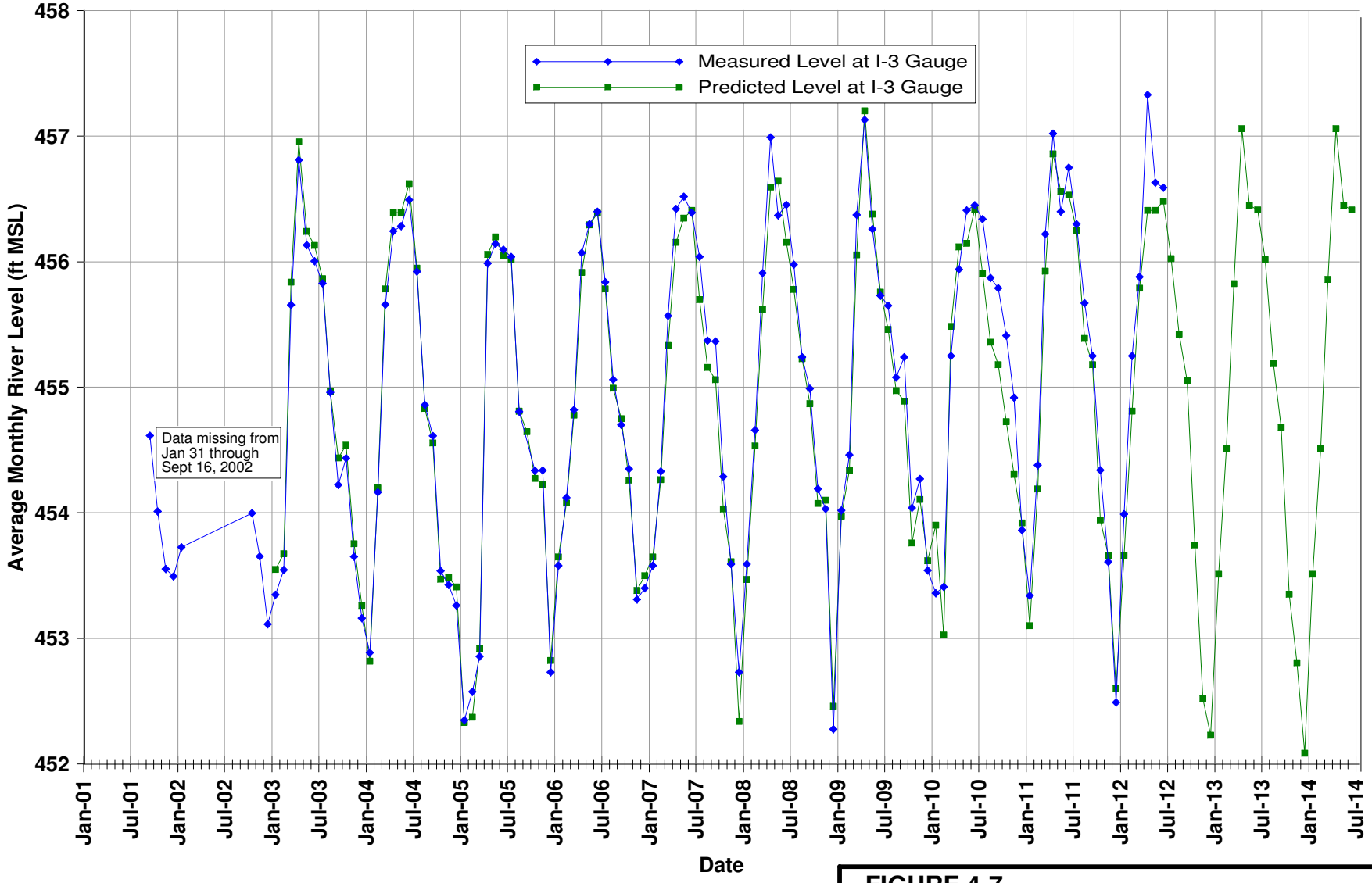
Notes:

1) For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2) Refer to Table 4-1 and Section 4.4 for discussion of pumping data.
3) Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4) Refer to Table 4-3 and Section 4.5 for discussion of gradient data.

FIGURE 4-6
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATIONS, AND PUMPING RATE, SECOND QUARTER 2012

SECOND QUARTER 2012 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Note:
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon July 2012 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf

FIGURE 4-7
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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Appendix A
Lab Reports, Second Quarter 2012
(Provided on CD-ROM with hardcopy submittal)

March 12, 2012

CH2M Hill - Redding
ATTN: Shawn Duffy
2525 Airpark Dr
Redding, CA 96001
Shawn.duffy@ch2m.com

RE: Project CHM-RE1201 Client Project: 2012-HNWR-003

Dear Mr. Duffy,

On February 27, 2012, Brooks Rand Labs (BRL) received one (1) water samples. The sample was logged-in for the contracted analyses of total arsenic (As) and arsenic speciation defined as inorganic arsenic [As(Inorg)], trivalent arsenic [As(III)], and pentavalent arsenic [As(V)] determined by difference according to the chain-of-custody (COC) form. The sample was received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

The results were blank-corrected as described in the calculations section of the relevant SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Due to recoveries outside of the acceptance criteria, the As(Inorg) calibration standards 1200151-CAL4 and 1200151-CAL5 were not reported. All sample results were within the calibration.

All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Lydia Greaves

Lydia Greaves
Project Manager
lydia@brooksrand.com

Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations /certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H Holding time and/or preservation requirements not met. Result is estimated.
J Estimated value. A full explanation is presented in the narrative.
J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N Spike recovery was not within acceptance criteria. Result is estimated.
R Rejected, unusable value. A full explanation is presented in the narrative.
U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

3958 6th Avenue NW Seattle WA 98107 · P(206) 632-6206 · F(206) 632-6017 · brl@brooksrand.com · www.brooksrand.com

Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
HNWR-01-003	1209002-01	Water	Sample	02/23/2012	02/27/2012

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 DRC	03/05/2012	03/07/2012	B120334	1200152
As(III)	Water	EPA 1632	03/07/2012	03/07/2012	B120358	1200153
As(Inorg)	Water	EPA 1632	03/07/2012	03/07/2012	B120357	1200151

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
HNWR-01-003										
1209002-01	As	Water	D	17.8		0.006	0.026	µg/L	B120334	1200152
1209002-01	As(III)	Water	D	0.103		0.008	0.025	µg/L	B120358	1200153
1209002-01	As(Inorg)	Water	D	14.2		0.160	0.500	µg/L	B120357	1200151
1209002-01	As(V)	Water	D	14.1		0.160	0.500	µg/L	[CALC]	N/A

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Accuracy & Precision Summary

Batch: B120334
Lab Matrix: Water
Method: EPA 1638 DRC

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B120334-BS1	**Laboratory Fortified Blank (1143006)**						
	As		4.211	4.337	µg/L	103% 75-125	
B120334-SRM1	**Certified Reference Material (1132016, NIST 1643e)**						
	As		60.45	60.03	µg/L	99% 75-125	
B120334-DUP1	**Duplicate (1209027-02)**						
	As	34.54		33.95	µg/L		2% 20
B120334-MS1	**Matrix Spike (1209027-02)**						
	As	34.54	52.63	93.77	µg/L	113% 75-125	
B120334-MSD1	**Matrix Spike Duplicate (1209027-02)**						
	As	34.54	52.63	92.98	µg/L	111% 75-125	0.8% 20

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Accuracy & Precision Summary

Batch: B120357
Lab Matrix: Water
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B120357-BS1	**Laboratory Fortified Blank (1206055)**						
	As(Inorg)		0.2502	0.252	µg/L	101% 65-135	
B120357-MS1	**Matrix Spike (1208019-07)**						
	As(Inorg)	0.195	0.2500	0.439	µg/L	98% 65-135	
B120357-MSD1	**Matrix Spike Duplicate (1208019-07)**						
	As(Inorg)	0.195	0.2500	0.435	µg/L	96% 65-135	0.9% 35

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Accuracy & Precision Summary

Batch: B120358
Lab Matrix: Water
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B120358-MS1	**Matrix Spike (1209019-01)**						
	As(III)	3.556	10.00	13.85	µg/L	103% 65-135	
B120358-MSD1	**Matrix Spike Duplicate (1209019-01)**						
	As(III)	3.556	10.00	12.29	µg/L	87% 65-135	12% 35

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Method Blanks & Reporting Limits

Batch: B120334
Matrix: Water
Method: EPA 1638 DRC
Analyte: As 91

Sample	Result	Units
B120334-BLK1	-0.001	µg/L
B120334-BLK2	-0.002	µg/L
B120334-BLK3	-0.002	µg/L
B120334-BLK4	-0.0004	µg/L

Average: -0.001 **Standard Deviation:** 0.001 **MDL:** 0.006
Limit: 0.026 **Limit:** 0.006 **MRL:** 0.026

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Method Blanks & Reporting Limits

Batch: B120357
Matrix: Water
Method: EPA 1632
Analyte: As(Inorg)

Sample	Result	Units
B120357-BLK1	0.105	µg/L
B120357-BLK2	0.00	µg/L
B120357-BLK3	0.00	µg/L

Average: 0.035 **Standard Deviation:** 0.061 **MDL:** 0.160
Limit: 0.320 **Limit:** 0.107 **MRL:** 0.500

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Method Blanks & Reporting Limits

Batch: B120358
Matrix: Water
Method: EPA 1632
Analyte: As(III)

Sample	Result	Units
B120358-BLK1	0.00	µg/L
B120358-BLK2	0.00	µg/L
B120358-BLK3	0.00	µg/L

Average: 0.000 **Standard Deviation:** 0.000 **MDL:** 0.160
Limit: 0.320 **Limit:** 0.107 **MRL:** 0.500

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Instrument Calibration

Sequence: 1200153
Instrument: HGAAS-2
Date: 03/07/2012
Analyte: As(III)

Total Arsenic and Arsenic Speciation by HG-CT-AAS
Method: EPA 1632

Lab ID	True Value	Result	Units	REC & Limits	
1200153-IBL1		0.000	ng As		
1200153-IBL2		0.000	ng As		
1200153-IBL3		0.000	ng As		
1200153-CAL1	0.5000	0.583	ng As	117%	
1200153-CAL2	2.000	2.215	ng As	111%	
1200153-CAL3	10.00	9.991	ng As	100%	
1200153-CAL4	20.00	16.15	ng As	81%	
1200153-ICV1	5.000	5.407	ng As	108%	80-120
1200153-CCV1	5.000	5.126	ng As	103%	80-120
1200153-CCB1		0.00	ng As		
1200153-CCV2	5.000	5.374	ng As	107%	80-120
1200153-CCB2		0.00	ng As		

Sample Containers

Lab ID: 1209002-01
Sample: HNWR-01-003

Report Matrix: Water
Sample Type: Sample

Collected: 02/23/2012
Received: 02/27/2012

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	1045907	0.1% HNO3 (BRL)	1202050	<2	Cooler
B	EXTRA_VOL	125 mL	1045907	0.1% HNO3 (BRL)	1202050	<2	Cooler
C	EXTRA_VOL	125 mL	1045907	0.1% HNO3 (BRL)	1202050	<2	Cooler
D	Bottle HDPE As-SP	125 mL	1045907	0.5mL 6N HCl (PP)	1153003	<2	Cooler
E	EXTRA_VOL	125 mL	1045907	0.5mL 6N HCl (PP)	1153003	<2	Cooler
F	EXTRA_VOL	125 mL	1045907	0.5mL 6N HCl (PP)	1153003	<2	Cooler

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Project ID: CHM-RE1201
PM: Lydia Greaves

Client PM: Shawn Duffy

Shipping Containers

Cooler

Received: February 27, 2012 12:00
Tracking No: 8768 3019 0951 via FedEx
Coolant Type: Ice
Temperature: 2.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

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1209002

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-003
Turnaround Time 10 Days
Shipping Date: 2/23/2012
COC Number: BRL-HNWR003

	Container:	Preservatives:	Filtered:	Holding Time:				
DATE	TIME	Matrix	250 Poly HCL	250 Poly ~~Filter~~ Ø	Field	Field	Arsenic (EPA 1632A) FF	Arsenic LL (6020A-FF) FF	Number of Containers	COMMENTS
HNWR-01-003	2-23-12	1531	water	X	X				6	
								TOTAL NUMBER OF CONTAINERS	2 ~~6~~ 6	

	Signatures	Date/Time
Approved by		2-24-12
Sampled by		0945
Relinquished by		
Received by	PM Gaby	2/24/12 0945
Relinquished by	PM Gaby	2/24/12 1630
Received by		2/27/12 1200 BRL

Shipping Details
Method of Shipment: FedEx
On Ice: ~~yes~~ no 2.5°C
Airbill No: 1R44

Lab Name: Brooks Rand Lab
Lab Phone:

ATTN:
Sample Custody

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 04-25-2012
EMAX Batch No.: 12D029

Attn: Priya Kumar

CH2M HILL
155 Grand, Suite 1000
Oakland CA 94612

Subject: Laboratory Report
Project: PG&E's Topock Gas Compressor Stat

Enclosed is the Laboratory report for samples received on 04/04/12.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-55-120-186	D029-01	04/03/12	WATER	DISSOLVED METALS IN WATER/WASTE CHROMIUM HEXAVALENT BY IC
MW-55-045-186	D029-02	04/03/12	WATER	DISSOLVED METALS IN WATER/WASTE CHROMIUM HEXAVALENT BY IC

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

for

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

CH_0408

12D029

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.06.TS
Task Order
Project 2012-GMP-186A-AZ
Turnaround Time 12 Days
Shipping Date: 4/2/2012
COC Number: Emax-186aAZ

				Container:	2x250 ml Poly	500 ml Poly			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field			
				Holding Time:	28	180			
		DATE	TIME	Matrix	Cr6 (E218.6R) FF	Metals (6020AFF) FF Chromium		Number of Containers	COMMENTS
1	MW-55-120-186	4-3-12	1103	water	X	X		3	
2	MW-55-045-186	4-3-12	0920	"	X	X		3	
							TOTAL NUMBER OF CONTAINERS	6	

T=13.5°C

	Signatures	Date/Time
Approved by		4-3-12
Sampled by		1554
Relinquished by		
Received by		4-3-12 1554
Relinquished by		4-3-12 21:30
Received by	Linda	4/3/12 21:30

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

ATTN:
Sample Custody

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

Relinquished by: Linda 4/4/12 9:30am Keith Stout
Keith Stout 4/4/12 14:16 4/4/12 1416

1001

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 120029
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient L-LUNA
☐ EMAX Courier ☐ Client Delivery		Date 4/4/12 Time 1416

COC Inspection

☐ Client Name ☑ Client PM/FC ☐ Sampler Name ☐ Sampling Date/Time/Location ☐ Sample ID ☐ Matrix

☐ Address ☐ Tel # / Fax # ☐ Courier Signature ☐ Analysis Required ☐ Preservative (if any) ☐ TAT

Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container	☐ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐
Temperatures (Cool, =6 °C but not frozen)	☐ Cooler 1 3.5 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C

Thermometer: *A - S/N 101541371* *B - S/N 101541382*

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling _____ Date 4/4/12

SRF _____ Date 4/4/12

PM RK for Molly Date 4/6/12

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	_____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

CLIENT: CH2M HILL
PROJECT: TOPOCK

SDG: 12D029

Analyst names:

1.200.8	:	Chris Capulong
2.281.6	:	Cherry Dam

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12D029

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

A total of two (2) water samples were received on 04/04/12 for Dissolved Metals in Water/Waste analysis, Method 200.8 in accordance with Project QAPP.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source (ICV). Interference checks were performed and results were within required limits. Continuing calibration (CCV) verifications and Continuing calibration blanks (CCB) were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for IMD018WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO. : 12D029
Instrument ID : T-I98

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMD018WB	1	NA	04/24/1213:29	04/12/1211:10	98D15053	98D15051	IMD018W	Method Blank
LCS1W	IMD018WL	1	NA	04/24/1213:34	04/12/1211:10	98D15054	98D15051	IMD018W	Lab Control Sample (LCS)
LCD1W	IMD018WC	1	NA	04/24/1213:39	04/12/1211:10	98D15055	98D15051	IMD018W	LCS Duplicate
MW-55-120-186AS	D029-01A	1	NA	04/24/1213:43	04/12/1211:10	98D15056	98D15051	IMD018W	Analytical Spike Sample
MW-55-120-186	D029-01	1	NA	04/24/1213:48	04/12/1211:10	98D15057	98D15051	IMD018W	Field Sample
MW-55-120-186DL	D029-01J	5	NA	04/24/1213:52	04/12/1211:10	98D15058	98D15051	IMD018W	Diluted Sample
MW-55-045-186	D029-02	1	NA	04/24/1213:57	04/12/1211:10	98D15059	98D15051	IMD018W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	04/03/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/04/12
SDG NO.	: 12D029	Date Extracted:	04/12/12 11:10
Sample ID:	MW-55-120-186	Date Analyzed:	04/24/12 13:48
Lab Samp ID:	D029-01	Dilution Factor:	1
Lab File ID:	98D15057	Matrix :	WATER
Ext Btch ID:	IMD018W	% Moisture :	NA
Calib. Ref.:	98D15051	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	6.5	1.00	0.200

Revised Report

003

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	04/03/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/04/12
SDG NO.	: 12D029	Date Extracted:	04/12/12 11:10
Sample ID	: MW-55-045-186	Date Analyzed:	04/24/12 13:57
Lab Samp ID	: D029-02	Dilution Factor:	1
Lab File ID	: 98D15059	Matrix :	WATER
Ext Btch ID	: IMD018W	% Moisture :	NA
Calib. Ref.	: 98D15051	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	NA
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/12/12
SDG NO.	: 12D029	Date Extracted:	04/12/12 11:10
Sample ID:	MBLK1W	Date Analyzed:	04/24/12 13:29
Lab Samp ID:	IMD018WB	Dilution Factor:	1
Lab File ID:	98D15053	Matrix :	WATER
Ext Btch ID:	IMD018W	% Moisture :	NA
Calib. Ref.:	98D15051	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO.: 12D029
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMD018WB	IMD018WL	IMD018WC		
LAB FILE ID:	98D15053	98D15054	98D15055		
DATIME EXTRCTD:	04/12/1211:10	04/12/1211:10	04/12/1211:10	DATE COLLECTED:	NA
DATIME ANALYZD:	04/24/1213:29	04/24/1213:34	04/24/1213:39	DATE RECEIVED:	04/12/12
PREP. BATCH:	IMD018W	IMD018W	IMD018W		
CALIB. REF:	98D15051	98D15051	98D15051		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Chromium	ND	25.0	24.0	96	25.0	23.8	95	1	85-115	20

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D029
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-55-120-186	MW-55-120-186DL		
EMAX SAMP ID:	D029-01	D029-01J		
LAB FILE ID:	98D15057	98D15058		
DATE EXTRACTED:	04/12/1211:10	04/12/1211:10	DATE COLLECTED:	04/03/12
DATE ANALYZED:	04/24/1213:48	04/24/1213:52	DATE RECEIVED:	04/04/12
PREP. BATCH:	IMD018W	IMD018W		
CALIB. REF:	98D15051	98D15051		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Chromium	6.48	6.59	2	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO.: 12D029
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-55-120-186			
CONTROL NO.:	D029-01	D029-01A		
LAB FILE ID:	98D15057	98D15056		
DATIME EXTRCTD:	04/12/1211:10	04/12/1211:10	DATE COLLECTED:	04/03/12
DATIME ANALYZD:	04/24/1213:48	04/24/1213:43	DATE RECEIVED:	04/04/12
PREP. BATCH:	IMD018W	IMD018W		
CALIB. REF:	98D15051	98D15051		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Chromium	6.48	25.0	28.7	89	75-125

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12D029

METHOD 218.6
HEXAVALENT CHROMIUM

A total of two (2) water samples were received on 04/04/12 for Chromium Hexavalent by IC analysis, Method 218.6 in accordance with Project QAPP.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source. Continuing calibration verifications were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for HCD007WL/C were all within QC limits.

Matrix QC Sample
Matrix QC sample was analyzed at the frequency prescribed by the project.
Percent recoveries for Matrix Spike were all within QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.
Sample D029-01 was initially analyzed and spiked as non-diluted. However, since the spiking level is less than 25 percent of the sample concentration, the sample was reanalyzed and spiked at dilution factor 5 (D029-01T & -01U). Only the results from the dilution runs were reported.

METHOD 218.6
HEXAVALENT CHROMIUM

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT
Batch No. : 12D029

Matrix : WATER
Instrument ID : I59

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HCD007WB	ND	1	NA	0.200	0.100	04/12/1217:47	NA	ID12013	ID12011	HCD007W	NA	NA
LCS1W	HCD007WL	2.04	1	NA	0.200	0.100	04/12/1217:57	NA	ID12014	ID12011	HCD007W	NA	NA
LCD1W	HCD007WC	2.00	1	NA	0.200	0.100	04/12/1218:07	NA	ID12015	ID12011	HCD007W	NA	NA
MW-55-045-186	D029-02	ND	1	NA	0.200	0.100	04/12/1218:41	NA	ID12018	ID12011	HCD007W	04/03/1209:20	04/04/12
MW-55-045-186MS	D029-02M	0.960	1	NA	0.200	0.100	04/12/1218:52	NA	ID12019	ID12011	HCD007W	04/03/1209:20	04/04/12
MW-55-120-186	D029-01T	6.7	5	NA	1.00	0.500	04/12/1219:23	NA	ID12022	ID12020	HCD007W	04/03/1211:03	04/04/12
MW-55-120-186MS	D029-01U	11.9	5	NA	1.00	0.500	04/12/1219:33	NA	ID12023	ID12020	HCD007W	04/03/1211:03	04/04/12

Revised Report

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D029
METHOD: METHOD 218.6

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HCD007WB	HCD007WL	HCD007WC		
LAB FILE ID:	ID12013	ID12014	ID12015		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	04/12/1217:47	04/12/1217:57	04/12/1218:07	DATE RECEIVED:	NA
PREP. BATCH:	HCD007W	HCD007W	HCD007W		
CALIB. REF:	ID12011	ID12011	ID12011		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Hexavalent Chromium	ND	2.00	2.04	102	2.00	2.00	100	2	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D029
METHOD: METHOD 218.6

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID: MW-55-120-186
LAB SAMP ID: D029-01T D029-01U
LAB FILE ID: ID12022 ID12023
DATE EXTRACTED: NA NA DATE COLLECTED: 04/03/12 11:03
DATE ANALYZED: 04/12/1219:23 04/12/1219:33 DATE RECEIVED: 04/04/12
PREP. BATCH: HCD007W HCD007W
CALIB. REF: ID12020 ID12020

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	6.69	5.00	11.9	103	90-110

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D029
METHOD: METHOD 218.6

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MW-55-045-186
LAB SAMP ID: D029-02 D029-02M
LAB FILE ID: ID12018 ID12019
DATE EXTRACTED: NA NA DATE COLLECTED: 04/03/12 09:20
DATE ANALYZED: 04/12/1218:41 04/12/1218:52 DATE RECEIVED: 04/04/12
PREP. BATCH: HCD007W HCD007W
CALIB. REF: ID12011 ID12011

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	1.00	0.960	96	90-110

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-08-2012
EMAX Batch No.: 12D227

Attn: Shawn Duffy

CH2M HILL
2525 Airpark Drive
Redding CA 96001

Subject: Laboratory Report
Project: PG&E's Topock Gas Compressor Stat

Enclosed is the Laboratory report for samples received on 04/25/12.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-54-085-186	D227-01	04/24/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC
MW-54-140-186	D227-02	04/24/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC
MW-54-195-186	D227-03	04/24/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC
MW-90-195-186	D227-04	04/24/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

120227

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/24/2012 3:07:53 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.05.AZ
Task Order
Project 2012-GMP-186-AZ
Turnaround Time 12 Days
Shipping Date: 4/24/2012
COC Number: 1

				Container:	2x250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C			
				Filtered:	Field	Field	Field	NA			
				Holding Time:	28	180	180	2			
					Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn	Specific Conductance (E120.1)		Number of Containers	COMMENTS
		DATE	TIME	Matrix							
1	MW-54-085-186	4/24/2012	12:40	Water	X	X	X	X		4	
2	MW-54-140-186	4/24/2012	11:39	Water	X	X	X	X		4	
3	MW-54-195-186	4/24/2012	11:59	Water	X	X	X	X		4	
	MW-90-195-186	4/24/2012	17:15	Water	X	X	X	X		4	
									TOTAL NUMBER OF CONTAINERS	16	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		4-24-12 1520
Received by	B. Dayog	4-24-12 1520
Relinquished by	B. Dayog	4-24-12 2030
Received by	Linda	4/25/12

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

ATTN:
Sample Custody

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 12D227
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient [signature]
☑ EMAX Courier ☐ Client Delivery		Date 4/25/12 Time 1522

COC Inspection

☑ Client Name ☑ Client PM/FC ☑ Sampler Name ☑ Sampling Date/Time/Location ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel # / Fax # ☑ Courier Signature ☑ Analysis Required ☑ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ Plastic bag
Temperatures (Cool, ≤6 °C but not frozen)	B ☑ Cooler 1 2.3 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C

Thermometer: *A - S/N 101541371* *B - S/N 101541382*

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling [signature] Date 4/25/12 [signature] 4/25/12

SRF [signature] Date 4/25/12

PM [signature] Date 4/26/12

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

CLIENT: CH2M HILL
PROJECT: TOPOCK

SDG: 12D227

Analyst names:

1.D200.8: Tina Hoang
2.218-6 : Cherry Dam
3.120.1 : Nina Macalinao

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12D227

METHOD 200.8
DISSOLVED METALS BY ICP-MS

A total of four (4) water samples were received on 04/25/12 for Dissolved Metals In Water/Waste analysis, Method 200.8 in accordance with Methods for the Determination of Metals in Environmental Samples, Supplement 1 (EPA/600/R-94/111) and Project SAP.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source. Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for IMD044WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated for this SDG. Analytical spike and serial dilution were analyzed for matrix interference evaluation. Results were within method acceptance criteria.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.
Samples D227-02, -03 and -04 were reported from dilution 5 due to failed internal standards in non-dilution runs. All raw data were reviewed and submitted.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG NO. : 12D227
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMD044WB	1	NA	05/01/1217:25	04/30/1214:50	F6E01084	F6E01082	IMD044W	Method Blank
LCS1W	IMD044WL	1	NA	05/01/1217:29	04/30/1214:50	F6E01085	F6E01082	IMD044W	Lab Control Sample (LCS)
LCD1W	IMD044WC	1	NA	05/01/1217:33	04/30/1214:50	F6E01086	F6E01082	IMD044W	LCS Duplicate
MW-54-085-186AS	D227-01A	1	NA	05/01/1218:49	04/30/1214:50	F6E01104	F6E01102	IMD044W	Analytical Spike Sample
MW-54-085-186	D227-01	1	NA	05/01/1218:54	04/30/1214:50	F6E01105	F6E01102	IMD044W	Field Sample
MW-54-085-186DL	D227-01J	5	NA	05/01/1218:58	04/30/1214:50	F6E01106	F6E01102	IMD044W	Diluted Sample
MW-54-140-186	D227-02	1	NA	05/01/1219:02	04/30/1214:50	F6E01107	F6E01102	IMD044W	Field Sample
MW-54-140-186	D227-02T	5	NA	05/04/1214:53	04/30/1214:50	F6E05019	F6E05017	IMD044W	Diluted Sample
MW-54-195-186	D227-03T	5	NA	05/04/1214:57	04/30/1214:50	F6E05020	F6E05017	IMD044W	Diluted Sample
MW-90-195-186	D227-04T	5	NA	05/04/1215:01	04/30/1214:50	F6E05021	F6E05017	IMD044W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

Revised Report
Tod

METHOD 200.8
DISSOLVED METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	04/24/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/25/12
SDG NO.	: 12D227	Date Extracted:	04/30/12 14:50
Sample ID	: MW-54-085-186	Date Analyzed:	05/01/12 18:54
Lab Samp ID	: D227-01	Dilution Factor:	1
Lab File ID	: F6E01105	Matrix :	WATER
Ext Btch ID	: IMD044W	% Moisture :	NA
Calib. Ref.	: F6E01102	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.9	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	774	5.00	0.200

Revised Report

7603

METHOD 200.8
DISSOLVED METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 04/24/12
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received: 04/25/12
SDG NO. : 12D227	Date Extracted: 04/30/12 14:50
Sample ID: MW-54-140-186	Date Analyzed: 05/01/12 19:02 # 05/04/12 14:53
Lab Samp ID: D227-02 #D227-02T	Dilution Factor: 1 # 5
Lab File ID: F6E01107 #F6E05019	Matrix : WATER
Ext Btch ID: IMD044W	% Moisture : NA
Calib. Ref.: F6E01102 #F6E05017	Instrument ID : T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Arsenic	ND	5.00	1.00
Chromium	ND	1.00	0.200
Manganese	179	5.00	0.200

Members of the Associated File

Revised Report

7007

METHOD 200.8
DISSOLVED METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	04/24/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/25/12
SDG NO.	: 12D227	Date Extracted:	04/30/12 14:50
Sample ID:	MW-54-195-186	Date Analyzed:	05/04/12 14:57
Lab Samp ID:	D227-03T	Dilution Factor:	5
Lab File ID:	F6E05020	Matrix :	WATER
Ext Btch ID:	IMD044W	% Moisture :	NA
Calib. Ref.:	F6E05017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	1.00
Chromium	ND	5.00	1.00
Manganese	519	25.0	1.00

Revised Report

7005

METHOD 200.8
DISSOLVED METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	04/24/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/25/12
SDG NO.	: 12D227	Date Extracted:	04/30/12 14:50
Sample ID:	MW-90-195-186	Date Analyzed:	05/04/12 15:01
Lab Samp ID:	D227-04T	Dilution Factor:	5
Lab File ID:	F6E05021	Matrix :	WATER
Ext Btch ID:	IMD044W	% Moisture :	NA
Calib. Ref.:	F6E05017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	1.00
Chromium	ND	5.00	1.00
Manganese	522	25.0	1.00

Revised Report

7006

METHOD 200.8
DISSOLVED METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	NA
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	04/30/12
SDG NO.	: 12D227	Date Extracted:	04/30/12 14:50
Sample ID:	MBLK1W	Date Analyzed:	05/01/12 17:25
Lab Samp ID:	IMD044WB	Dilution Factor:	1
Lab File ID:	F6E01084	Matrix :	WATER
Ext Btch ID:	IMD044W	% Moisture :	NA
Calib. Ref.:	F6E01082	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	ND	5.00	0.200

Revised Report

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EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO.: 12D227
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMD044WB	IMD044WL	IMD044WC		
LAB FILE ID:	F6E01084	F6E01085	F6E01086		
DATIME EXTRCTD:	04/30/1214:50	04/30/1214:50	04/30/1214:50	DATE COLLECTED:	NA
DATIME ANALYZD:	05/01/1217:25	05/01/1217:29	05/01/1217:33	DATE RECEIVED:	04/30/12
PREP. BATCH:	IMD044W	IMD044W	IMD044W		
CALIB. REF:	F6E01082	F6E01082	F6E01082		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Arsenic	ND	25.0	25.7	103	25.0	26.3	105	2	85-115	20
Chromium	ND	25.0	25.0	100	25.0	26.2	105	5	85-115	20
Manganese	ND	25.0	25.7	103	25.0	26.7	107	4	85-115	20

7008

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D227
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-54-085-186	MW-54-085-186DL		
EMAX SAMP ID:	D227-01	D227-01J		
LAB FILE ID:	F6E01105	F6E01106		
DATE EXTRACTED:	04/30/1214:50	04/30/1214:50	DATE COLLECTED:	04/24/12
DATE ANALYZED:	05/01/1218:54	05/01/1218:58	DATE RECEIVED:	04/25/12
PREP. BATCH:	IMD044W	IMD044W		
CALIB. REF:	F6E01102	F6E01102		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Arsenic	4.85	5.00	3	10
Chromium	ND	ND	0	10
Manganese	774	832	7	10

Revised Report

7009

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO.: 12D227
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-54-085-186			
CONTROL NO.:	D227-01	D227-01A		
LAB FILE ID:	F6E01105	F6E01104		
DATIME EXTRCTD:	04/30/1214:50	04/30/1214:50	DATE COLLECTED:	04/24/12
DATIME ANALYZD:	05/01/1218:54	05/01/1218:49	DATE RECEIVED:	04/25/12
PREP. BATCH:	IMD044W	IMD044W		
CALIB. REF:	F6E01102	F6E01102		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Arsenic	4.85	25.0	29.8	100	75-125
Chromium	ND	25.0	23.1	92	75-125
Manganese	774	25.0	783	35*	75-125

Revised Report

7010

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12D227

METHOD 218.6
HEXAVALENT CHROMIUM

A total of four (4) water samples were received on 04/25/12 for Chromium Hexavalent by IC analysis, Method 218.6 in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and Project SAP.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source. Continuing calibration verifications were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for HCE001WL/C were all within QC limits.

Matrix QC Sample
Matrix QC samples were analyzed at the frequency prescribed by the project.
Percent recoveries were within project QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.
All samples were initially analyzed at 1x, however, only sample D227-01 was reported as is.
Sample D227-02 & -02U were reported from 5x runs because the detected Hexavalent Chromium in the matrix spike from the straight run was out of the retention time window.
Samples D227-03, -03U, -04 & -04U were reported from 5x dilutions because the matrix spikes in the non-dilution runs did not yield any recovery.
Raw data from all runs were reviewed and reported.

METHOD 218.6
HEXAVALENT CHROMIUM

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT
Batch No. : 12D227

Matrix : WATER
Instrument ID : I59

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HCE001WB	ND	1	NA	0.200	0.100	05/01/1211:31	NA	IE01003	IE01001	HCE001W	NA	NA
LCS1W	HCE001WL	2.01	1	NA	0.200	0.100	05/01/1211:41	NA	IE01004	IE01001	HCE001W	NA	NA
LCD1W	HCE001WC	2.03	1	NA	0.200	0.100	05/01/1211:51	NA	IE01005	IE01001	HCE001W	NA	NA
MW-54-085-186	D227-01	ND	1	NA	0.200	0.100	05/01/1212:02	NA	IE01006	IE01001	HCE001W	04/24/1212:40	04/25/12
MW-54-085-186MS	D227-01M	0.930	1	NA	0.200	0.100	05/01/1212:12	NA	IE01007	IE01001	HCE001W	04/24/1212:40	04/25/12
MW-54-140-186	D227-02	ND	5	NA	1.00	0.500	05/01/1214:07	NA	IE01018	IE01013	HCE001W	04/24/1211:39	04/25/12
MW-54-140-186MS	D227-02U	5.00	5	NA	1.00	0.500	05/01/1214:17	NA	IE01019	IE01013	HCE001W	04/24/1211:39	04/25/12
MW-54-195-186	D227-03	ND	5	NA	1.00	0.500	05/01/1214:27	NA	IE01020	IE01013	HCE001W	04/24/1211:59	04/25/12
MW-54-195-186MS	D227-03U	5.03	5	NA	1.00	0.500	05/01/1214:38	NA	IE01021	IE01013	HCE001W	04/24/1211:59	04/25/12
MW-90-195-186	D227-04	ND	5	NA	1.00	0.500	05/01/1214:48	NA	IE01022	IE01013	HCE001W	04/24/1217:15	04/25/12
MW-90-195-186MS	D227-04U	4.99	5	NA	1.00	0.500	05/01/1214:59	NA	IE01023	IE01013	HCE001W	04/24/1217:15	04/25/12

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D227
METHOD: METHOD 218.6

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HCE001WB	HCE001WL	HCE001WC		
LAB FILE ID:	IE01003	IE01004	IE01005		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	05/01/1211:31	05/01/1211:41	05/01/1211:51	DATE RECEIVED:	NA
PREP. BATCH:	HCE001W	HCE001W	HCE001W		
CALIB. REF:	IE01001	IE01001	IE01001		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Hexavalent Chromium	ND	2.00	2.01	101	2.00	2.03	102	1	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D227
METHOD: METHOD 218.6

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MW-54-085-186			
LAB SAMP ID:	D227-01	D227-01M		
LAB FILE ID:	IE01006	IE01007		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	04/24/12 12:40
DATE ANALYZED:	05/01/1212:02	05/01/1212:12	DATE RECEIVED:	04/25/12
PREP. BATCH:	HCE001W	HCE001W		
CALIB. REF:	IE01001	IE01001		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	1.00	0.930	93	90-110

8262

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D227
METHOD: METHOD 218.6

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	MW-54-140-186			
LAB SAMP ID:	D227-02	D227-02U		
LAB FILE ID:	IE01018	IE01019		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	04/24/12 11:39
DATE ANALYZED:	05/01/1214:07	05/01/1214:17	DATE RECEIVED:	04/25/12
PREP. BATCH:	HCE001W	HCE001W		
CALIB. REF:	IE01013	IE01013		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	5.00	5.00	100	90-110

12D227

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D227
METHOD: METHOD 218.6

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	MW-54-195-186			
LAB SAMP ID:	D227-03	D227-03U		
LAB FILE ID:	IE01020	IE01021		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	04/24/12 11:59
DATE ANALYZED:	05/01/1214:27	05/01/1214:38	DATE RECEIVED:	04/25/12
PREP. BATCH:	HCE001W	HCE001W		
CALIB. REF:	IE01013	IE01013		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	5.00	5.03	101	90-110

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12D227
METHOD: METHOD 218.6

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID: MW-90-195-186
LAB SAMP ID: D227-04 D227-04U
LAB FILE ID: IE01022 IE01023
DATE EXTRACTED: NA NA DATE COLLECTED: 04/24/12 17:15
DATE ANALYZED: 05/01/1214:48 05/01/1214:59 DATE RECEIVED: 04/25/12
PREP. BATCH: HCE001W HCE001W
CALIB. REF: IE01013 IE01013

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	5.00	4.99	100	90-110

8525

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12D227

METHOD 120.1
SPECIFIC CONDUCTANCE

A total of four (4) water samples were received on 04/25/12 for Specific Conductance analysis, Method 120.1 in accordance with Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/4-79/020).

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method. All calibration requirements were within acceptance criteria.

Matrix QC Sample
No matrix QC sample was designated for this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.

METHOD 120.1
SPECIFIC CONDUCTANCE

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT
Batch No. : 12D227

Matrix : WATER
Instrument ID : D4

SAMPLE ID	EMAX SAMPLE ID	RESULTS (umhos/cm)	DLF	MOIST	RL (umhos/cm)	MDL (umhos/cm)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MW-54-085-186	D227-01	10000	1	NA	2.00	2.00	04/26/1218:56	NA	12ECD002W03	NA	ECD002W	04/24/1212:40	04/25/12
MW-54-140-186	D227-02	12600	1	NA	2.00	2.00	04/26/1218:57	NA	12ECD002W04	NA	ECD002W	04/24/1211:39	04/25/12
MW-54-195-186	D227-03	19400	1	NA	2.00	2.00	04/26/1219:00	NA	12ECD002W05	NA	ECD002W	04/24/1211:59	04/25/12
MW-90-195-186	D227-04	19100	1	NA	2.00	2.00	04/26/1219:01	NA	12ECD002W06	NA	ECD002W	04/24/1217:15	04/25/12

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 06-06-2012
EMAX Batch No.: 12E181

Attn: Shawn Duffy

CH2M HILL
2525 Airpark Drive
Redding CA 96001

Subject: Laboratory Report
Project: PG&E's Topock Gas Compressor Stat

Enclosed is the Laboratory report for samples received on 05/23/12.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-56D-186	E181-01	05/17/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC
MW-56M-186	E181-02	05/17/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC
MW-56S-186	E181-03	05/17/12	WATER	SPECIFIC CONDUCTANCE
				DISSOLVED METALS IN WATER/WASTE
				CHROMIUM HEXAVALENT BY IC

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

12E181

CH2MHILL CW_0408_

CHAIN OF CUSTODY RECORD

5/17/2012 4:28:05 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.05.AZ
Task Order
Project 2012-GMP-186-AZ
Turnaround Time 12 Days
Shipping Date: 5/22/2012
COC Number: 2

	DATE	TIME	Matrix	Container:	2x250 ml Poly	500 ml Poly	1 Liter Poly		Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C			
				Filtered:	Field	Field	NA			
				Holding Time:	28	180	2			
					Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)			
1	MW-56D-186	5/17/2012	13:15	Water	X	X	X		4	
2	MW-56M-186	5/17/2012	13:57	Water	X	X	X		4	
3	MW-56S-186	5/17/2012	14:38	Water	X	X	X		4	
								TOTAL NUMBER OF CONTAINERS	12	

T = 2.4°C

	Signatures	Date/Time
Approved by		
Sampled by		5-22-12 1520
Relinquished by		5-22-12 15:20
Received by		5-22-12 21:30
Relinquished by		5/22/12 21:30
Received by	Linda	

Del-Shed: TLI, Linda, 5/23/12 9:35 Keith Stout 5/23/12 9:35 Keith Stout 5/23/12 1418

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

ATTN:
Sample Custody

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

5/23/12 1418

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 12E181
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient -LWNA
☑ EMAX Courier ☐ Client Delivery		Date 5/23/12 Time 1418

COC Inspection

☑ Client Name ☑ Client PM/FC ☑ Sampler Name ☑ Sampling Date/Time/Location ☑ Sample ID ☑ Matrix

☐ Address ☑ Tel # / Fax # ☑ Courier Signature ☑ Analysis Required ☑ Preservative (if any) ☑ TAT

Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container ☑ Cooler ☐ Box ☐ Other

Condition ☐ Custody Seal ☑ Intact ☐ Damaged

Packaging ☐ Bubble Pack ☐ Styrofoam ☐ Popcorn ☑ Sufficient ☐

Temperatures (Cool, ≤6 °C but not frozen) A ☑ Cooler 1 2.4 °C ☐ Cooler 2 ____ °C ☐ Cooler 3 ____ °C ☐ Cooler 4 ____ °C ☐ Cooler 5 ____ °C

☐ Cooler 6 ____ °C ☐ Cooler 7 ____ °C ☐ Cooler 8 ____ °C ☐ Cooler 9 ____ °C ☐ Cooler 10 ____ °C

Thermometer: A - S/N 101541371 B - S/N 101541382

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS Sample Labeling [signature] Date 5/23/12 [signature] 5/23/12 SRF [signature] Date 5/24/12 PM [signature] Date 5/24/12

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Project Management
A1	Analysis is not indicated in COC.	G1	Sample indicated in COC is not received.	R1	Hold sample(s); wait for further instructions
A2	Analysis is not indicated in label.	G2	MS/MSD is not indicated in COC.	R2	Proceed as indicated in COC and inform client.
A3	Analysis is inconsistent in COC vis-à-vis label.	G3	No identified trip blank, proceed as indicated in COC.	R3	Refer to attached instruction
B1	Sample ID is not indicated in COC.	G4	Trip Blank is designated in SDG _____	R4	Cancel the analysis
B2	Sample ID is not indicated in label.	G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.	R5	Inform client.
B3	Sample ID is inconsistent in COC vis-à-vis label.	H1		R6	Proceed as indicated in COC
C1	Improper container				
C2	Broken container				
C3	Leaking container				
D1	Date and/or time is not indicated in COC.				
D2	Date and/or time is not indicated in label.				
D3	Date and/or time is inconsistent in COC vis-à-vis label.				
F1	Improper preservation				
F2	Insufficient Sample				
F3	Bubble is > 6mm. Use vial with smallest bubble first.				
F4	Bubble is > 6mm in all vials.				
F5	>20 % solid particle				
F6	Out of Holding Time				

CLIENT: CH2M HILL
PROJECT: TOPOCK

SDG: 12E181

Analyst names:

1. D200.8: Chris Capulong
2. 218-6 : Cherry Dam
3. 120.1 : Mary Jane Mendoza

1002A

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12E181

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

A total of three (3) water samples were received on 05/23/12 for Dissolved Metals In Water/Waste analysis, Method 200.8 in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and Project SAP.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source. Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for IMF002WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated for this SDG. Analytical spike and serial dilution were analyzed for matrix interference evaluation. Results were within method acceptance criteria.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG NO. : 12E181
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMF002WB	1	NA	06/04/1216:46	06/01/1210:30	F6F02066	F6F02064	IMF002W	Method Blank
LCS1W	IMF002WL	1	NA	06/04/1216:50	06/01/1210:30	F6F02067	F6F02064	IMF002W	Lab Control Sample (LCS)
LCD1W	IMF002WC	1	NA	06/04/1216:54	06/01/1210:30	F6F02068	F6F02064	IMF002W	LCS Duplicate
MW-56D-186AS	E181-01A	1	NA	06/04/1216:58	06/01/1210:30	F6F02069	F6F02064	IMF002W	Analytical Spike Sample
MW-56D-186	E181-01	1	NA	06/04/1217:03	06/01/1210:30	F6F02070	F6F02064	IMF002W	Field Sample
MW-56D-186DL	E181-01J	5	NA	06/04/1217:07	06/01/1210:30	F6F02071	F6F02064	IMF002W	Diluted Sample
MW-56M-186	E181-02	1	NA	06/04/1217:11	06/01/1210:30	F6F02072	F6F02064	IMF002W	Field Sample
MW-56S-186	E181-03	1	NA	06/04/1217:15	06/01/1210:30	F6F02073	F6F02064	IMF002W	Field Sample

FN - Filename
% Moist - Percent Moisture

6552

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	05/17/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	05/23/12
SDG NO.	: 12E181	Date Extracted:	06/01/12 10:30
Sample ID:	MW-56D-186	Date Analyzed:	06/04/12 17:03
Lab Samp ID:	E181-01	Dilution Factor:	1
Lab File ID:	F6F02070	Matrix :	WATER
Ext Btch ID:	IMF002W	% Moisture :	NA
Calib. Ref.:	F6F02064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	05/17/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	05/23/12
SDG NO.	: 12E181	Date Extracted:	06/01/12 10:30
Sample ID:	MW-56M-186	Date Analyzed:	06/04/12 17:11
Lab Samp ID:	E181-02	Dilution Factor:	1
Lab File ID:	F6F02072	Matrix :	WATER
Ext Btch ID:	IMF002W	% Moisture :	NA
Calib. Ref.:	F6F02064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	05/17/12
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	05/23/12
SDG NO.	: 12E181	Date Extracted:	06/01/12 10:30
Sample ID	: MW-56S-186	Date Analyzed:	06/04/12 17:15
Lab Samp ID	: E181-03	Dilution Factor:	1
Lab File ID	: F6F02073	Matrix :	WATER
Ext Btch ID	: IMF002W	% Moisture :	NA
Calib. Ref.	: F6F02064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD 200.8
DISSOLVED CHROMIUM BY ICP-MS

Client	: CH2M HILL	Date Collected:	NA
Project	: PG&E'S TOPOCK GAS COMPRESSOR STAT	Date Received:	06/01/12
SDG NO.	: 12E181	Date Extracted:	06/01/12 10:30
Sample ID:	MBLK1W	Date Analyzed:	06/04/12 16:46
Lab Samp ID:	IMF002WB	Dilution Factor:	1
Lab File ID:	F6F02066	Matrix :	WATER
Ext Btch ID:	IMF002W	% Moisture :	NA
Calib. Ref.:	F6F02064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

8085

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO.: 12E181
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMF002WB	IMF002WL	IMF002WC		
LAB FILE ID:	F6F02066	F6F02067	F6F02068		
DATIME EXTRCTD:	06/01/1210:30	06/01/1210:30	06/01/1210:30	DATE COLLECTED:	NA
DATIME ANALYZD:	06/04/1216:46	06/04/1216:50	06/04/1216:54	DATE RECEIVED:	06/01/12
PREP. BATCH:	IMF002W	IMF002W	IMF002W		
CALIB. REF:	F6F02064	F6F02064	F6F02064		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Chromium	ND	25.0	24.6	98	25.0	24.9	100	1	85-115	20

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12E181
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-56D-186	MW-56D-186DL		
EMAX SAMP ID:	E181-01	E181-01J		
LAB FILE ID:	F6F02070	F6F02071		
DATE EXTRACTED:	06/01/1210:30	06/01/1210:30	DATE COLLECTED:	05/17/12
DATE ANALYZED:	06/04/1217:03	06/04/1217:07	DATE RECEIVED:	05/23/12
PREP. BATCH:	IMF002W	IMF002W		
CALIB. REF:	F6F02064	F6F02064		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Chromium	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
SDG NO.: 12E181
METHOD: METHOD 200.8 (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-56D-186			
CONTROL NO.:	E181-01	E181-01A		
LAB FILE ID:	F6F02070	F6F02069		
DATIME EXTRCTD:	06/01/1210:30	06/01/1210:30	DATE COLLECTED:	05/17/12
DATIME ANALYZD:	06/04/1217:03	06/04/1216:58	DATE RECEIVED:	05/23/12
PREP. BATCH:	IMF002W	IMF002W		
CALIB. REF:	F6F02064	F6F02064		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Chromium	ND	25.0	21.9	88	75-125

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12E181

METHOD 218.6
HEXAVALENT CHROMIUM

A total of three (3) water samples were received on 05/23/12 for Chromium Hexavalent by IC analysis, Method 218.6 in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and Project SAP.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source. Continuing calibration verifications were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for HCE033WL/C were all within QC limits.

Matrix QC Sample
Matrix QC samples were analyzed at the frequency prescribed by the project.
Percent recoveries for Matrix Spike were all within QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.
Sample E181-01 and its spike were initially analyzed at 1x. However, due to the spike failed to recover at 1x, the sample was re-analyzed and reported at 5x dilution.
Sample E181-02 and its spike were initially analyzed at 1x. However, the spike result was out of retention time window. The sample was re-analyzed and reported at 5x dilution.

METHOD 218.6
HEXAVALENT CHROMIUM

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT
Batch No. : 12E181
Matrix : WATER
Instrument ID : I59

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HCE033WB	ND	1	NA	0.200	0.100	05/25/1215:33	NA	IE26013	IE26011	HCE033W	NA	NA
LCS1W	HCE033WL	1.94	1	NA	0.200	0.100	05/25/1215:43	NA	IE26014	IE26011	HCE033W	NA	NA
LCD1W	HCE033WC	1.96	1	NA	0.200	0.100	05/25/1215:54	NA	IE26015	IE26011	HCE033W	NA	NA
MW-56D-186	E181-01	ND	5	NA	1.00	0.500	05/25/1217:30	NA	IE26024	IE26022	HCE033W	05/17/1213:15	05/23/12
MW-56D-186MS	E181-01U	5.03	5	NA	1.00	0.500	05/25/1217:41	NA	IE26025	IE26022	HCE033W	05/17/1213:15	05/23/12
MW-56M-186	E181-02	ND	5	NA	1.00	0.500	05/25/1217:51	NA	IE26026	IE26022	HCE033W	05/17/1213:57	05/23/12
MW-56M-186MS	E181-02U	4.78	5	NA	1.00	0.500	05/25/1218:02	NA	IE26027	IE26022	HCE033W	05/17/1213:57	05/23/12
MW-56S-186	E181-03	ND	1	NA	0.200	0.100	05/25/1216:46	NA	IE26020	IE26011	HCE033W	05/17/1214:38	05/23/12
MW-56S-186MS	E181-03M	1.03	1	NA	0.200	0.100	05/25/1216:56	NA	IE26021	IE26011	HCE033W	05/17/1214:38	05/23/12

6/7/12

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12E181
METHOD: METHOD 218.6

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HCE033WB	HCE033WL	HCE033WC		
LAB FILE ID:	IE26013	IE26014	IE26015		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	05/25/1215:33	05/25/1215:43	05/25/1215:54	DATE RECEIVED:	NA
PREP. BATCH:	HCE033W	HCE033W	HCE033W		
CALIB. REF:	IE26011	IE26011	IE26011		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Hexavalent Chromium	ND	2.00	1.94	97	2.00	1.96	98	1	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12E181
METHOD: METHOD 218.6

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID: MW-56D-186
LAB SAMP ID: E181-01 E181-01U
LAB FILE ID: IE26024 IE26025
DATE EXTRACTED: NA NA DATE COLLECTED: 05/17/12 13:15
DATE ANALYZED: 05/25/1217:30 05/25/1217:41 DATE RECEIVED: 05/23/12
PREP. BATCH: HCE033W HCE033W
CALIB. REF: IE26022 IE26022

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	5.00	5.03	101	90-110

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12E181
METHOD: METHOD 218.6

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	MW-56M-186			
LAB SAMP ID:	E181-02	E181-02U		
LAB FILE ID:	IE26026	IE26027		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	05/17/12 13:57
DATE ANALYZED:	05/25/1217:51	05/25/1218:02	DATE RECEIVED:	05/23/12
PREP. BATCH:	HCE033W	HCE033W		
CALIB. REF:	IE26022	IE26022		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	5.00	4.78	96	90-110

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
BATCH NO.: 12E181
METHOD: METHOD 218.6

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MW-56S-186
LAB SAMP ID: E181-03 E181-03M
LAB FILE ID: IE26020 IE26021
DATE EXTRACTED: NA NA DATE COLLECTED: 05/17/12 14:38
DATE ANALYZED: 05/25/1216:46 05/25/1216:56 DATE RECEIVED: 05/23/12
PREP. BATCH: HCE033W HCE033W
CALIB. REF: IE26011 IE26011

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Hexavalent Chromium	ND	1.00	1.03	103	90-110

CASE NARRATIVE

Client : CH2M HILL

Project : PG&E'S TOPOCK GAS COMPRESSOR STAT

SDG : 12E181

METHOD 120.1
SPECIFIC CONDUCTANCE

A total of three (3) water samples were received on 05/23/12 for Specific Conductance analysis, Method 120.1 in accordance with Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/4-79/020).

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method. All calibration requirements were within acceptance criteria.

Matrix QC Sample
No matrix QC sample was designated for this SDG. However, sample duplicate was analyzed with the samples. RPD was within project limit.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.

METHOD 120.1
SPECIFIC CONDUCTANCE

Client : CH2M HILL
Project : PG&E'S TOPOCK GAS COMPRESSOR STAT
Batch No. : 12E181

Matrix : WATER
Instrument ID : D4

SAMPLE ID	EMAX SAMPLE ID	RESULTS (umhos/cm)	DLF	MOIST	RL (umhos/cm)	MDL (umhos/cm)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Receive DATETIM
MW-56D-186	E181-01	21800	1	NA	2.00	2.00	05/24/1217:36	NA	12ECE003W02	NA	ECE003W	05/17/1213:15	05/23/1
MW-56D-186DUP	E181-01D	21800	1	NA	2.00	2.00	05/24/1217:36	NA	12ECE003W03	NA	ECE003W	05/17/1213:15	05/23/1
MW-56M-186	E181-02	14900	1	NA	2.00	2.00	05/24/1217:37	NA	12ECE003W04	NA	ECE003W	05/17/1213:57	05/23/1
MW-56S-186	E181-03	6160	1	NA	2.00	2.00	05/24/1217:39	NA	12ECE003W05	NA	ECE003W	05/17/1214:38	05/23/1

EMAX QUALITY CONTROL DATA
DUPLICATE ANALYSIS

CLIENT: CH2M HILL
PROJECT: PG&E'S TOPOCK GAS COMPRESSOR STAT
METHOD: METHOD 120.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 12E181
SAMPLE ID: MW-56D-186DUP
CONTROL NO.: E181-01D

DATE RECEIVED: 05/23/12
DATE EXTRACTED: NA
DATE ANALYZED: 05/24/12 17:36

ACCESSION:

PARAMETER	SAMPLE (umhos/cm)	DUP. SAMPLE (umhos/cm)	RPD (%)	RPD LIMIT (%)
Specific Conductivity	21800	21800	0	5

Dr. Yi Wang
Director of ZymaX Forensics Isotope
600 S. Andreasen Dr., Suite B
Escondido, CA 92029
Tel: 760.781.3338 ext 43
Fax: 760.781.3339
Cell: 609.721.2843
Email: yi.wang@zymaxusa.com

REPORT OF ISOTOPE ANALYSES

Report Date: March 16th, 2012

Samples from Shawn Duffy (CH2M HILL) and Matt Ringler (E2) for $\delta^{18}O$ and δD (‰ VSMOW) analysis

ZymaX ID	Sample ID	$\delta^{18}O$	δD	ZymaX ID	$\delta^{18}O$	δD
42558-1	HNWR-01-003	-10.2	-73.8	QC-01	-4.7	-35.9
				QC-02	-4.8	-35.3
				Mean	-4.8	-35.6
	Analytical Precision (1σ)	0.1	0.4	**STDEV**	0.1	0.4

ZYMAX FORENSICS ISOTOPE LABORATORY ANALYSES

Gas

^{13}C and D of C1 to C4; ^{13}C of CO_2; C-14 of Methane and CO_2; ^{34}S of H_2S; ^{15}N and ^{18}O of N_2O gas

Oil, Extract, Fraction and Kerogen

Compound-Specific ^{13}C and D of MTBE,Chlorinated Solvents,PAH,Gasoline,Oil; Bulk ^{13}C, D/H, ^{34}S, and ^{15}N

Water

D and ^{18}O; ^{34}S and ^{18}O of dissolved sulfate; ^{34}S of dissolved H_2S; ^{37}Cl, ^{13}C and D of chlorinated solvents

^{15}N and ^{18}O of dissolved Nitrate; ^{15}N of Ammonia; ^{13}C of dissolved CO_2 and Carbonate/Bicarbonate

Soil and Minerals:

^{13}C, ^{15}N, ^{34}S, D/H, ^{18}O; C-14 of carbonate or organics

CH2MHILL CHAIN OF CUSTODY RECORD Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-003
Turnaround Time 10 Days
Shipping Date: 2/23/2012
COC Number: ZYM-HNWR003

Container: 250 ml Poly
Preservatives: 4°C
Filtered: NA
Holding Time: NA

DATE	TIME	Matrix	Oxy_Deut (CF-IRMS)		Number of Containers	COMMENTS
HNWR-01-003	2-23-12	1531	water	X	42558-1	1	
					TOTAL NUMBER OF CONTAINERS	1	

	Signatures	Date/Time
Approved by		2-24-12
Sampled by		0945
Relinquished by		
Received by	DMGaleg	2/24/12 0945
Relinquished by	DMGaleg	2/24/12 1630
Received by	Ryan Woon	2/27/12 13:26

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 2.2°C
Airbill No: 1KH22
Lab Name: Zymax Envirotechnology
Lab Phone: (805) 544-4696

ATTN:
Sample Custody
and
Michael Ng

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

EPA Method 8290
Dioxins/Furans by GC-HRMS
Case Narrative

ARF: 67701

Project: 423575.MP.02.GM.0 2012-GMP-186-Q2

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: 05233CA (HW)

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

The water samples were received on May 8, 2012, at 3.0°C. The samples were assigned Analytical Request Form (ARF) number 67701. The sample numbers and requested analysis were compared to the chain of custody. A container count discrepancy was noted, and reported to the client. No other exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
MW-71-035-186B	AY60711	WATER	05/03/12	05/08/12
AB-01-186	AY60712	WATER	05/03/12	05/08/12

The samples were screened for responses down to the EMPC or EDL, in accordance with the EPA 8290 method.

Sample Preparation:

The samples were extracted and cleaned up according to the EPA 8290 method. All holding times were met.

Analysis Information:

The samples were analyzed according to the EPA 8290, using a Waters Inc. Autospec Premier High Resolution Mass Spectrometer. The results were reported in accordance with EPA 8290 guidelines, as follows:

1. For analytes that had no chromatographic response in the samples, the EDL (Estimated Detection Limit) was reported in the EDL / EMPC column on the Form 1.

AMENDED PAGE

2. For analytes that exhibited chromatographic peaks in the samples (but did not meet the method requirements for positive identification), the EMPC (Estimated Maximum Potential Concentration) was reported in the EDL / EMPC column.
3. For the positively identified analytes the concentration was reported in the "Results" column, and EMPC was reported in the EDL / EMPC column. The EMPC is equal to the detected concentration.

The TEQ was calculated using the TEF values provided by the World Health Organization "Toxicity Equivalency Factor Table 2005".

In accordance with the client's instructions, a sample exhibiting J-value responses below the PQL was re-injected for confirmation purposes. The higher of the two results was reported on the Form 1. For J-value responses in which the confirmation result was "not detected", the analyte was reported as not detected with an EMPC from the J-value detection, according to the client's instructions.

Quality Control/Assurance

Calibrations:

Calibrations and Resolution Checks were performed according to the method. All calibration acceptance criteria were met.

Blanks:

The method blank contained no target analyte at or above one-half the PQL.

Spikes:

A Laboratory Control Spike (LCS) was used for quality control. All LCS recoveries met acceptance criteria.

No sample was designated by the client for MS/MSD analysis.

Surrogate Recoveries (C13 Internal Standards):

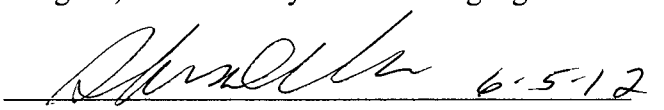
C13 Internal Standards were added to the extracts in accordance with the method and reported on the Form 1s as surrogate recoveries. All recoveries met acceptance criteria.

Summary:

All data were acceptable. No analytical exception is noted.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.



Sharon Dehmlow, Laboratory Director / Date

APPL - Analysis Request Form 67701

Client: **CH2M Hill**
Address: **2525 Airpark Dr.**
Redding, CA 96001
Attn: **Shawn Duffy**
Phone: **530-229-3303** Fax: **530-339-3303**
Job: **417981.ER.02.DM 2012-East Ravine-GWINV**
PO #: **417981-1004**
Chain of Custody (Y/N): **Y** #
RAD Screen (Y/N): **Y** pH (Y/N): **N**
Turn Around Type: **2 WEEKS**

Received by: **TBV**
Date Received: **05/08/12** Time: **14:19**
Delivered by: **GSO**
Shuttle Custody Seals (Y/N): **N** Time Zone: **-7**
Chest Temp(s): **3.0°C**
Color: **A-GRN**
Samples Chilled until Placed in Refrig/Freezer: **Y**
Project Manager: **Cynthia Clark**
QC Report Type: **DVP4/CA/L7EDD**
Due Date: **05/22/12**

Comments:
Hard copy to Shawn Duffy
edd and pdf via email (split file if needed) to Shawn.Duffy@CH2M.com & edata@CH2M.com
EDD: LS7-2011, checked, to Shawn.Duffy@CH2M.com & edata@CH2M.com
8290 Report 'PC' or 'DL' on Form 1
Gross up for %M before extraction
reanalyze any detections < 5x s/n ,J flag confirmed, U flag non-confirmed per QAPP

Sample Distribution:
Extractions: 2-_SEP8290
Other: 2-$8290W

Charges:

Invoice To:
Attn: Accounts Payable
P. O. Box 241329
Denver, CO 80224

	Client ID	APPL ID	Sampled	Analyses Requested
1.	MW-71-035-186B	AY60711W	05/03/12 15:20	$8290W
2.	AB-01-186	AY60712W	05/03/12 15:25	$8290W

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -7 UTC

APPL Sample Receipt Form

ARF# **67701**

Sample	Container Type	Count	pH
AY60711	[17] Amber Liter	2	NA
AY60712	[17] Amber Liter	1	NA

Sample	Container Type	Count	pH

CH2MHILL **CHAIN OF CUSTODY RECORD** *5/3/2012 4:08:19 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/3/2012
COC Number: 13

	Container:	1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	2 X 1L Amber			
	Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
	Filtered:	NA	Field	Field	NA	NA	NA			
	Holding Time:	30	180	180	2	2	7			
		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered / Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Dioxins/Furans (SW8290)		Number of Containers	COMMENTS
MW-57-070-186	5/3/2012 8:33 Water		X	X	X	X		N0077798-001	2	
MW-60-125-186	5/3/2012 11:17 Water		X	X	X	X		-2	2	
MW-61-110-186	5/3/2012 9:43 Water		X	X	X	X		-3	2	
MW-67-185-186	5/3/2012 14:31 Water	X	X	X	X	X		-4	3	
MW-68-240-186	5/3/2012 13:29 Water	X	X	X	X	X		-5	3	
MW-71-035-186 B	5/3/2012 15:20 Water						X	-6	2	
AB-01-186	5-3-12 1525 11						X	-7	TOTAL NUMBER OF CONTAINERS 14	1

15 BEL

AMENDED PAGE

	Signatures	Date/Time
Approved by		
Sampled by		5-3-12 1611
Relinquished by		5/3/12 @ 1623
Received by		
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: yes / no 1.8°C
Airbill No: 1CE 1844 2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

COOLER RECEIPT FORM

1) Project: NA Date Received: 5/8/12

2) Coolers: Number of Coolers: 1

3) YES NO Were coolers and samples screened for radioactivity?

4) YES NO Were custody seals on outside of cooler? How many? _____ Date on seal? _____

5) Name on seal? _____

6) YES NO NA Were custody seals unbroken and intact at the time of arrival?

7) YES NO Did the cooler come with a shipping slip (air bill, etc.)? Carrier name: Golden State Overnight

8) Shipping slip numbers: 1) 5190546 53 2) _____ 3) _____

9) YES NO NA Was the shipping slip scanned into the database?

10) YES NO NA If cooler belongs to APPL, has it been logged into the ice chest database?

11) Describe type of packing in cooler (bubble wrap, popcorn, type of ice, etc.): bubble bag, Ziploc in wet and gel ice

12) YES NO NA For hand delivered samples was sufficient ice present to start the cooling process?

13) YES NO Was a temperature blank included in the cooler?

14) Serial number of certified NIST thermometer used: 439267 Correction factor: 0

15) Cooler temp(s): 1) 3.0°C 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____

Chain of custody:

16) YES NO Was a chain of custody received?

17) YES NO Were the custody papers signed in the appropriate places?

18) YES NO Was the project identifiable from custody papers?

19) YES NO Did the chain of custody include date and time of sampling?

20) YES NO Is location where sample was taken listed on the chain of custody?

Sample Labels:

21) YES NO Were container labels in good condition?

22) YES NO Was the client ID on the label?

23) YES NO Was the date of sampling on the label?

24) YES NO Was the time of sampling on the label?

25) YES NO Did all container labels agree with custody papers?

Sample Containers:

26) YES NO Were all containers sealed in separate bags?

27) YES NO Did all containers arrive unbroken?

28) YES NO Was there any leakage from samples?

29) YES NO Were any of the lids cracked or broken?

30) YES NO Were correct containers used for the tests indicated?

31) YES NO Was a sufficient amount of sample sent for tests indicated?

32) YES NO NA Were bubbles present in volatile samples? If yes, the following were received with air bubbles:

Larger than a pea: _____

Smaller than a pea: _____

Preservation & Hold time:

33) YES NO NA Was a sufficient amount of holding time remaining to analyze the samples?

34) YES NO NA Do the sample containers contain the same preservative as what is stated on the COC?

35) YES NO NA Was the pH taken of all non-VOA preserved samples and written on the sample container?

36) YES NO NA Was the pH of acid preserved non-VOA samples < 2 & sodium hydroxide preserved samples > 12?

37) YES NO NA Unpreserved VOA Vials received? _____

38) YES NO NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF? _____

Lab notified if pH was not adequate: _____

Deficiencies: COC listed 1 container for Sample N007798-006A/MW-71-035-186B but received total of two.

Signature of personnel receiving samples: _____ Second reviewer: _____

Signature of project manager notified: Renée Date and Time of notification: 5-8-12

Name of client notified: _____ Date and Time of notification: _____

Information given to client: _____

_____ by whom (Initials): _____

Method Blank

EPA 8290 - Dioxins and Furans

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **120515W-60711 - 167373**
Batch ID: $8290W-120515A

Sample Type	Analyte	Result	PQL	EDL/EMPC	Units	Ext Date	Analysis Date
BLANK	1,2,3,4,6,7,8-HPCDD	6.8PC U	125.0	6.8PC	pg/L	05/15/12	05/26/12
BLANK	1,2,3,4,6,7,8-HPCDF	2.6PC U	125.0	2.6PC	pg/L	05/15/12	05/26/12
BLANK	1,2,3,4,7,8,9-HPCDF	2.1DL U	125.0	2.1DL	pg/L	05/15/12	05/26/12
BLANK	1,2,3,4,7,8-HXCDD	1.5DL U	125.0	1.5DL	pg/L	05/15/12	05/26/12
BLANK	1,2,3,4,7,8-HXCDF	0.91DL U	125.0	0.91DL	pg/L	05/15/12	05/26/12
BLANK	1,2,3,6,7,8-HXCDD	1.4DL U	125.0	1.4DL	pg/L	05/15/12	05/26/12
BLANK	1,2,3,6,7,8-HXCDF	0.79DL U	125.0	0.79DL	pg/L	05/15/12	05/26/12
BLANK	1,2,3,7,8,9-HXCDD	0.57PC U	125.0	0.57PC	pg/L	05/15/12	05/26/12
BLANK	1,2,3,7,8,9-HXCDF	0.82PC U	125.0	0.82PC	pg/L	05/15/12	05/26/12
BLANK	1,2,3,7,8-PECDD	1.6DL U	125.0	1.6DL	pg/L	05/15/12	05/26/12
BLANK	1,2,3,7,8-PECDF	0.67PC U	125.0	0.67PC	pg/L	05/15/12	05/26/12
BLANK	2,3,4,6,7,8-HXCDF	1.2PC U	125.0	1.2PC	pg/L	05/15/12	05/26/12
BLANK	2,3,4,7,8-PECDF	0.67DL U	125.0	0.67DL	pg/L	05/15/12	05/26/12
BLANK	2,3,7,8-TCDD	0.87DL U	50.0	0.87DL	pg/L	05/15/12	05/26/12
BLANK	2,3,7,8-TCDF	0.50DL U	50.0	0.50DL	pg/L	05/15/12	05/26/12
BLANK	OCDD	26PC U	250.0	26PC	pg/L	05/15/12	05/26/12
BLANK	OCDF	7.5PC U	250.0	7.5PC	pg/L	05/15/12	05/26/12
BLANK	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S)	89.5	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S)	84.7	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)	84.6	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)	76.6	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-1,2,3,7,8-PECDD (S)	75.6	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-1,2,3,7,8-PECDF (S)	90.3	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-2,3,7,8-TCDD (S)	74.5	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-2,3,7,8-TCDF (S)	79.9	40-135		%	05/15/12	05/26/12
BLANK	SURROGATE: 13C-OCDD (S)	82.2	40-135		%	05/15/12	05/26/12

Quant Method: 8290_120525
Run #: 120525_HR_16
Instrument: Magneto
Sequence: 120525
Initials: RP

Printed: 05/30/12 8:04:17 AM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 67701

Case No: 67701 Date Analyzed: 05/26/12

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S)			SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
120515A-LCS	Lab Control Spike	40-135	88.2		40-135	77.8	
120515A-BLK	Blank	40-135	89.5		40-135	84.7	
AY60711	MW-71-035-186B	40-135	82.5		40-135	80.8	
AY60712	AB-01-186	40-135	87.0		40-135	79.0	

Comments: Batch: #8290W-120515A

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 67701

Case No: 67701 Date Analyzed: 05/26/12

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)			SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
120515A-LCS	Lab Control Spike	40-135	81.8		40-135	75.4	
120515A-BLK	Blank	40-135	84.6		40-135	76.6	
AY60711	MW-71-035-186B	40-135	84.9		40-135	76.9	
AY60712	AB-01-186	40-135	84.4		40-135	75.3	

Comments: Batch: #8290W-120515A

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 67701

Case No: 67701 Date Analyzed: 05/26/12

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-1,2,3,7,8-PECDD (S)			SURROGATE: 13C-1,2,3,7,8-PECDF (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
120515A-LCS	Lab Control Spike	40-135	76.0		40-135	85.5	
120515A-BLK	Blank	40-135	75.6		40-135	90.3	
AY60711	MW-71-035-186B	40-135	72.0		40-135	82.0	
AY60712	AB-01-186	40-135	78.6		40-135	91.7	

Comments: Batch: #8290W-120515A

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 67701

Case No: 67701 Date Analyzed: 05/26/12

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-2,3,7,8-TCDD (S)			SURROGATE: 13C-2,3,7,8-TCDF (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
120515A-LCS	Lab Control Spike	40-135	69.5		40-135	77.5	
120515A-BLK	Blank	40-135	74.5		40-135	79.9	
AY60711	MW-71-035-186B	40-135	71.3		40-135	79.9	
AY60712	AB-01-186	40-135	77.1		40-135	78.5	

Comments: Batch: #8290W-120515A

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 67701

Case No: 67701 Date Analyzed: 05/26/12

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-OCDD (S)					
		Limits	Result	Qualifier	Limits	Result	Qualifier
120515A-LCS	Lab Control Spike	40-135	85.5				
120515A-BLK	Blank	40-135	82.2				
AY60711	MW-71-035-186B	40-135	71.7				
AY60712	AB-01-186	40-135	82.3				

Comments: Batch: #8290W-120515A

Laboratory Control Spike Recovery

EPA 8290 - Dioxins and Furans

APPL ID: **120515W-60711 LCS - 167373**
Batch ID: #8290W-120515A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level pg/L	SPK Result pg/L	SPK % Recovery	Recovery Limits
1,2,3,4,6,7,8-HPCDD	1250	1250	100	70-130
1,2,3,4,6,7,8-HPCDF	1250	1350	108	70-130
1,2,3,4,7,8,9-HPCDF	1250	1290	103	70-130
1,2,3,4,7,8-HXCDD	1250	1370	110	70-130
1,2,3,4,7,8-HXCDF	1250	1210	96.8	70-130
1,2,3,6,7,8-HXCDD	1250	1380	110	70-130
1,2,3,6,7,8-HXCDF	1250	1220	97.6	70-130
1,2,3,7,8,9-HXCDD	1250	1390	111	70-130
1,2,3,7,8,9-HXCDF	1250	1220	97.6	70-130
1,2,3,7,8-PECDD	1250	1310	105	70-130
1,2,3,7,8-PECDF	1250	1280	102	70-130
2,3,4,6,7,8-HXCDF	1250	1300	104	70-130
2,3,4,7,8-PECDF	1250	1160	92.8	70-130
2,3,7,8-TCDD	500	523	105	70-130
2,3,7,8-TCDF	500	508	102	70-130
OCDD	2500	2590	104	70-130
OCDF	2500	2370	94.8	70-130
SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD	5000	4410	88.2	40-135
SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF	5000	3890	77.8	40-135
SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S	5000	4090	81.8	40-135
SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S	5000	3770	75.4	40-135
SURROGATE: 13C-1,2,3,7,8-PECDD (S)	2000	1520	76.0	40-135
SURROGATE: 13C-1,2,3,7,8-PECDF (S)	2000	1710	85.5	40-135
SURROGATE: 13C-2,3,7,8-TCDD (S)	2000	1390	69.5	40-135
SURROGATE: 13C-2,3,7,8-TCDF (S)	2000	1550	77.5	40-135
SURROGATE: 13C-OCDD (S)	10000	8550	85.5	40-135

Comments: _____

Primary	SPK
Quant Method :	8290_120525
Extraction Date :	05/15/12
Analysis Date :	05/26/12
Instrument :	Magneto
Run :	120525_HR_14
Initials :	RP

Printed: 05/30/12 8:04:12 AM
APPL Standard LCS

EPA 8290

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 67701

Case No: 67701 Date Analyzed: 05/26/12

Matrix: WATER Instrument: Magneto

Blank ID: 120515A-BLK Time Analyzed: 0511

APPL ID.	Client Sample No.	File ID.	Date Analyzed
120515A-LCS	Lab Control Spike	120525_HR_14	05/26/12 0258
120515A-BLK	Blank	120525_HR_16	05/26/12 0511
AY60711	MW-71-035-186B	120525_HR_17	05/26/12 0626
AY60712	AB-01-186	120525_HR_18	05/26/12 0732

Comments: Batch: #8290W-120515A

Printed: 05/30/12 8:04:05 AM
Form 4, Blank Summary

EPA 8290 - Dioxins and Furans

CH2M Hill
2525 Airpark Dr.
Redding, CA 96001

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Shawn Duffy

Project: 423575.MP.02.GM.0 2012-GMP-186-Q2

ARF: 67701

Sample ID: MW-71-035-186B

APPL ID: AY60711

Sample Collection Date: 05/03/12

QCG: $8290W-120515A-167373

Method	Analyte	Result	PQL	EDL/EMPC	Units	Ext Date	Analysis Date
EPA 8290	1,2,3,4,6,7,8-HPCDD	9.6PC U	125.0	9.6PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,6,7,8-HPCDF	6.6 J	125.0	6.6PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,7,8,9-HPCDF	3.5DL U	125.0	3.5DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,7,8-HXCDD	2.9DL U	125.0	2.9DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,7,8-HXCDF	1.5DL U	125.0	1.5DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,6,7,8-HXCDD	2.7DL U	125.0	2.7DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,6,7,8-HXCDF	1.3DL U	125.0	1.3DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8,9-HXCDD	1.6PC U	125.0	1.6PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8,9-HXCDF	4.7PC U	125.0	4.7PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8-PECDD	3.2DL U	125.0	3.2DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8-PECDF	1.2DL U	125.0	1.2DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,4,6,7,8-HXCDF	1.5DL U	125.0	1.5DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,4,7,8-PECDF	1.3DL U	125.0	1.3DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,7,8-TCDD	1.1DL U	50.0	1.1DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,7,8-TCDF	0.86DL U	50.0	0.86DL	pg/L	05/15/12	05/26/12
EPA 8290	OCDD	41 J	250.0	41PC	pg/L	05/15/12	05/26/12
EPA 8290	OCDF	9.8PC U	250.0	9.8PC	pg/L	05/15/12	05/26/12
EPA 8290	TEQ	0.078	NA		pg/L	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S	82.5	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S	80.8	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)	84.9	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)	76.9	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,7,8-PECDD (S)	72.0	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,7,8-PECDF (S)	82.0	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-2,3,7,8-TCDD (S)	71.3	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-2,3,7,8-TCDF (S)	79.9	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-OCDD (S)	71.7	40-135		%	05/15/12	05/26/12

J = Estimated value.

Quant Method: 8290_120525
Run #: 120525_HR_17
Instrument: Magneto
Sequence: 120525
Dilution Factor: 1
Initials: RP

Printed: 06/18/12 12:03:58 PM
Form 1 - APPL Standard GC - No MC

AMENDED PAGE

EPA 8290 - Dioxins and Furans

CH2M Hill
2525 Airpark Dr.
Redding, CA 96001

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Shawn Duffy

Project: 423575.MP.02.GM.0 2012-GMP-186-Q2

ARF: 67701

Sample ID: AB-01-186

APPL ID: AY60712

Sample Collection Date: 05/03/12

QCG: $8290W-120515A-167373

Method	Analyte	Result	PQL	EDL/EMPC	Units	Ext Date	Analysis Date
EPA 8290	1,2,3,4,6,7,8-HPCDD	5.4 J	125.0	5.4PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,6,7,8-HPCDF	1.6DL U	125.0	1.6DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,7,8,9-HPCDF	1.9PC U	125.0	1.9PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,7,8-HXCDD	1.6DL U	125.0	1.6DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,4,7,8-HXCDF	0.98DL U	125.0	0.98DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,6,7,8-HXCDD	1.5DL U	125.0	1.5DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,6,7,8-HXCDF	0.99PC U	125.0	0.99PC	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8,9-HXCDD	1.4DL U	125.0	1.4DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8,9-HXCDF	1.2DL U	125.0	1.2DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8-PECDD	1.9DL U	125.0	1.9DL	pg/L	05/15/12	05/26/12
EPA 8290	1,2,3,7,8-PECDF	0.75DL U	125.0	0.75DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,4,6,7,8-HXCDF	1.0DL U	125.0	1.0DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,4,7,8-PECDF	0.43DL U	125.0	0.43DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,7,8-TCDD	0.87DL U	50.0	0.87DL	pg/L	05/15/12	05/26/12
EPA 8290	2,3,7,8-TCDF	0.56DL U	50.0	0.56DL	pg/L	05/15/12	05/26/12
EPA 8290	OCDD	32 J	250.0	32PC	pg/L	05/15/12	05/26/12
EPA 8290	OCDF	13 J	250.0	13PC	pg/L	05/15/12	05/26/12
EPA 8290	TEQ	0.068	NA		pg/L	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S	87.0	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S	79.0	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)	84.4	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)	75.3	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,7,8-PECDD (S)	78.6	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-1,2,3,7,8-PECDF (S)	91.7	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-2,3,7,8-TCDD (S)	77.1	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-2,3,7,8-TCDF (S)	78.5	40-135		%	05/15/12	05/26/12
EPA 8290	SURROGATE: 13C-OCDD (S)	82.3	40-135		%	05/15/12	05/26/12

J = Estimated value.

Quant Method: 8290_120525
Run #: 120525_HR_18
Instrument: Magneto
Sequence: 120525
Dilution Factor: 1
Initials: RP

Printed: 06/18/12 12:03:58 PM
Form 1 - APPL Standard GC - No MC

AMENDED PAGE

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

April 17, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-193, GROUNDWATER MONITORING PROJECT, TLI NO.: 800830

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-193 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, 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 on April 3, 2012, 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.

The sample times on the containers were the reverse of what was on the chain-of-custody. The sample times on the containers were: 13:40 for PE-01-193 and 13:33 for TW-03D-193 (except the Hexavalent Chromium container which had 13:40) versus the chain-of-custody sample times of 13:33 and 13:40, respectively. Mr. Chris Knight verified that the sample times on the COC were correct.

Per Mr. Shawn Duffy's request, the pH analysis was cancelled.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy.

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.

Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

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

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 424973.01.DM

Laboratory No.: 800830
Date: April 17, 2012
Collected: April 3, 2012
Received: April 3, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Kim Luck
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / Melissa Scharfe / George Wahba
SM 3500-CrB	Hexavalent Chromium	Kim Luck

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Laboratory No.: 800830
Date Received: April 3, 2012

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800830-001	PE-01-193	E120.1	NONE	4/3/2012	13:33	EC	4910	umhos/cm	2.00
800830-001	PE-01-193	E200.8	LABFLT	4/3/2012	13:33	Chromium	7.5	ug/L	1.0
800830-001	PE-01-193	E218.6	LABFLT	4/3/2012	13:33	Chromium, hexavalent	7.4	ug/L	0.20
800830-001	PE-01-193	SM2540C	NONE	4/3/2012	13:33	Total Dissolved Solids	2800	mg/L	125
800830-002	TW-03D-193	E120.1	NONE	4/3/2012	13:40	EC	8450	umhos/cm	2.00
800830-002	TW-03D-193	E200.8	LABFLT	4/3/2012	13:40	Chromium	929	ug/L	2.0
800830-002	TW-03D-193	SM2540C	NONE	4/3/2012	13:40	Total Dissolved Solids	5300	mg/L	250
800830-002	TW-03D-193	SM3500-CrB	LABFLT	4/3/2012	13:40	Chromium, hexavalent	937	ug/L	100

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01 will have two (2) significant figures.
Result above or equal to 0.01 will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

900

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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: 424973.01.DM
P.O. Number: 424973.01.DM
Release Number:

Laboratory No. 800830

Printed 4/17/2012

Samples Received on 4/3/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-193	800830-001	04/03/2012 13:33	Water
TW-03D-193	800830-002	04/03/2012 13:40	Water

Specific Conductivity - EPA 120.1

Batch 04EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	4910
800830-002 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	8450

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7750	7760	0.129	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	701	706	99.3	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	960.	998	96.2	90 - 110

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Chrome VI by EPA 218.6

Batch 04CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Chromium, Hexavalent	ug/L	04/04/2012 12:50	1.00	0.0260	0.20	7.4

Method Blank

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

Duplicate — Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.36	7.36	0.0367	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	97.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100.	90 - 110

Matrix Spike — Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.2	17.4(10.0)	98.4	90 - 110

Matrix Spike — Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.11	5.09(5.00)	100.	90 - 110

Matrix Spike — Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.09(1.00)	94.5	90 - 110

Matrix Spike — Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1720	1770(1000)	94.8	90 - 110

Matrix Spike — Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	11.1	11.1(10.0)	99.7	90 - 110

Matrix Spike — Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

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Matrix Spike — Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.89	5.87(5.00)	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.03	5.00	101.	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

Chromium, Hexavalent by SM 3500-Cr B

Batch 04CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-002 Chromium, Hexavalent	ug/L	04/04/2012 15:33	10.0	15.0	100.	937.

Method Blank

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

Duplicate — Lab ID = 800830-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	937.	937	0.0213	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	108.	100.	108.	90 - 110

Matrix Spike — Lab ID = 800830-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	1920	1940(1000)	98.9	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.6	60.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	56.3	60.0	93.8	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 4/17/2012

Total Dissolved Solids by SM 2540 C

Batch 04TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	125	2800
800830-002 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	250.	5300

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate — Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4520	4430	2.01	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	455	500.	91.0	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Metals by EPA 200.8, Dissolved

Batch 041012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Chromium	ug/L	04/10/2012 20:00	5.00	0.110	1.0	7.5
800830-002 Chromium	ug/L	04/10/2012 20:28	10.0	0.220	2.0	929.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	7.15	7.52	5.09	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.176	0.200	88.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	90.7	100.	90.7	85 - 115

Matrix Spike — Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.8	108.(100.)	92.3	75 - 125

Matrix Spike Duplicate — Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	108.(100.)	93.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.64	10.0	96.4	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.58	10.0	95.8	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	80 - 120

Serial Dilution — Lab ID = 800830-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	917.	929	1.28	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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E2 SC

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS12A

Date Calculated: 4/4/12

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	109.0687	109.0691	109.0689	0.0002	No	0.0002	2.0	25.0	ND	1
800804-16	100	72.3936	72.4530	72.4528	0.0002	No	0.0592	592.0	25.0	592.0	1
800813-11	100	75.3045	75.3621	75.3618	0.0003	No	0.0573	573.0	25.0	573.0	1
800813-12	100	75.6546	75.7109	75.7105	0.0004	No	0.0559	559.0	25.0	559.0	1
800830-1	20	71.3052	71.3615	71.3613	0.0002	No	0.0561	2805.0	125.0	2805.0	1
800830-2	10	75.6757	75.7291	75.7287	0.0004	No	0.0530	5300.0	250.0	5300.0	1
800831-1	10	50.1641	50.2086	50.2084	0.0002	No	0.0443	4430.0	250.0	4430.0	1
800831-2	10	49.6824	49.7271	49.7268	0.0003	No	0.0444	4440.0	250.0	4440.0	1
800831-3	2	50.1269	50.1895	50.1892	0.0003	No	0.0623	31150.0	1250.0	31150.0	1
800831-1D	10	51.5081	51.5536	51.5533	0.0003	No	0.0452	4520.0	250.0	4520.0	1
LCS	100	110.9525	110.9988	110.998	0.0008	Yes	0.0455	455.0	25.0	455.0	1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A-B}{C}\right) x\,1\,0^{6}$$

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)

Lucie — Analyst Printed Name

Analyst Signature

Hope — Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS12A

Date Calculated: 4/4/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
800804-16	762	0.78	495.3	1.20
800813-11	915	0.63	594.75	0.96
800813-12	897	0.62	583.05	0.96
800830-1	4910	0.57	3191.5	0.88
800830-2	8450	0.63	5492.5	0.96
800831-1	7510	0.59	4881.5	0.91
800831-2	7750	0.57	5037.5	0.88
800831-3	40700	0.77	26455	1.18
800831-1D	7510	0.60	4881.5	0.93

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CHAIN OF CUSTODY RECORD

[IM3Plant-EW-193] 800830

COC Number

TURNAROUND TIME 10 Days

DATE 04/03/12 PAGE 1 OF 1

COMPANY CH2M HILL /E2

PROJECT NAME PG&E Topock IM3Plant-EW

PHONE 530-229-3303 FAX 530-339-3303

ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612

P.O. NUMBER 424973.01.DM

SAMPLERS (SIGNATURE C. Knight

	SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)										NUMBER OF CONTAINERS	COMMENTS
-1	PE-01-193	04/03/12	13:33	Ground water	X		X	X	X										4	pH=6 } 200.7
-2	TW-03D-193	04/03/12	13:40	Ground water	X	X	X	X											4	pH=6 }
																			8	TOTAL NUMBER OF CONTAINERS

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	C. Knight	Printed Name	C. Knight	Company/ Agency	CH2MHILL	Date/ Time	4/3/12 15:45
Signature (Received)	[signature]	Printed Name	Hipolito	Company/ Agency	TLI	Date/ Time	4-3-12 15:45
Signature (Relinquished)	[signature]	Printed Name	Hipolito	Company/ Agency	TLI	Date/ Time	4-3-12 21:30
Signature (Received)	[signature]	Printed Name	Shabunina	Company/ Agency	TLI	Date/ Time	4/3/12 21:30
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 3.4 °C

CUSTODY SEALED YES ☐ NO ☑

SPECIAL REQUIREMENTS:

040

Subject: FW: Topock COC discrepancy - SDG 800830
From: "Shawn.Duffy@CH2M.com" <Shawn.Duffy@CH2M.com>
Date: Wed, 4 Apr 2012 19:39:30 -0400
To: Sean Condon <seanc@truesdail.com>

See response below from Chris.

Shawn

-----Original Message-----
From: Knight, Chris/TCK
Sent: Wednesday, April 04, 2012 3:57 PM
To: Duffy, Shawn/RDD
Subject: RE: Topock COC discrepancy - SDG 800830

Shawn - The times on the COC are the correct times. Our printer went down yesterday and we had to use a desk jet to print the labels where any amount of moisture causes the ink to run. We printed the labels twice and I guess they got confused transfering information. So PE-1 was sampled at 13:33 and TW-3D was sampled at 13:40.

Chris

-----Original Message-----
From: Duffy, Shawn/RDD
Sent: Wednesday, April 04, 2012 1:35 PM
To: Knight, Chris/TCK
Subject: FW: Topock COC discrepancy - SDG 800830

See issue of COC vs labels below... Can you clarify?

Shawn

-----Original Message-----
From: Sean Condon [mailto:seanc@truesdail.com]
Sent: Wednesday, April 04, 2012 1:14 PM
To: Duffy, Shawn/RDD
Subject: Topock COC discrepancy - SDG 800830

Hi Shawn,

I have attached the COC for SDG 800830 (IM3Plant-EW-193). The sample times on the containers were the reverse of what is on the COC. The sample times on the containers are:

PE-01-193 - All have 13:40 (COC is 13:33)
TW-03D-193 - All have 13:33 except the Cr6 container which has 13:40 (COC is 13:40)

Also, most of the sample information on the labels was washed off and illegible except for the hand written sample time, date, and sampler.

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

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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
3/16/12	800534-1	9.5	N/A	N/A	N/A	MG
	-2					
	-3					
	-4					
	-5					
	-6					
3/21/12	800584	7.0	5mL	9.5	10:15am	MG
3/23/12	800651-1	9.5	NA	NA	NA	MG
	-2					
	-3					
3/28/12	800732	7.0	5mL	9.5	9:25am	MG
3/28/12	800732	7	5mL	9.5	9:30 Am	GW
3/28/12	800742	7.0	5mL	9.5	10:35am	MG
3/29/12	800756	9.5	NA	NA	NA N/A	MG
3/30/12	800770-1	9.5	NA	NA	7:50am	MG
	-2				N/A	
	-3				N/A	
4/4/12	800830 -1	7.0	2mL	9.5	9:30am	MG
4/4/12	800830 -2	7.0	2mL	9.5	9:45am	MG
4/4/12	800831 -1	7.0	2mL	9.5	10:00am	MG
	-2				10:10am	
	-3				10:20am	

GW 4/2/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800646	>2	<2	3/26/12	KK	YES	KK 3/30/12 3010A
800648	↓	↓	↓	↓	↓	↓
800679	↓	↓	↓	↓	↓	↓
800680	<1	<2	3-27-12	BE	NO	NO
800691	<1	<2	↓	↓	↓	↓
800692	↓	↓	↓	↓	↓	↓
800700	<1	>2	↓	↓	↓	Yes 14:00
800701	↓	↓	↓	↓	↓	↓
800707(1-5)	<1	1-4 <2 5 >2	3-28-12	BE	NO	5 → Yes 9:45
800709	↓	<2	↓	↓	↓	NO
800708(1-5)	↓	5 >2	↓	↓	↓	5 → Yes 9:45 AM
800710(1-5	↓	5 >2	↓	↓	↓	5 → Yes 9:45 "
800711(1-8)	↓	7 8 >2	↓	↓	↓	7 8 → Yes 9:45 "
800712(1-8	↓	7,8 >2	↓	↓	↓	7,8 → Yes 9:45 "
800713(1-8)	↓	7,8 >2	↓	↓	↓	7,8 → Yes 9:45 "
800714(1-8)	↓	7,8 >2	↓	↓	↓	7,8 → Yes 9:45 "
800715(1-10)	↓	>2	↓	↓	↓	Yes 9:45 AM
800722(1-8)	↓	7,8 >2	↓	↓	↓	7,8 → Yes 9:45 "
800720	↓	~~<2 >2~~ <2	BE 3-28-12	↓	↓	NO
800721	↓	~~<2 >2~~ <2	BE 3-28-12	↓	↓	↓
800717	>1	<2 ~~>2~~	BE 3-28-12	↓	Yes	3010A
800718	↓	↓	↓	↓	↓	↓
800719	↓	↓	↓	↓	↓	↓
800732	BE ~~>1~~ <1	>2	↓	↓	Yes	3010A Yes 10:00 AM
800742	~~<1~~	BE ~~<2~~ >2	3/29/12	BE	NO	Yes 7:15AM
800747	>1	↓	↓	↓	Yes	3010A ↓
800750(10-12)	<1	>2	↓	↓	NO	Yes 7:15
800751	<1	<2 BE 3-27-12	↓	↓	NO	NO
800756	<1	~~<2 >2~~ 3-30-12 BE	3-30-12	BE	Yes	3010A ~~Yes 7:15~~ BE
800770(1-2)	<1	~~<2 >2~~	3-30-12	BE	Yes	3010A ~~Yes 7:15AM~~ 3-30
800778(1-2)	~~<1~~ >1 BE 4-2-12	>2	4-2-12	BE	~~Yes~~ NO BE 4-2-12	~~3010A Yes~~ 7:35AM
800781	<1	<2	↓	↓	NO	NO
800788	<1	<2	4-3-12	BE	NO	NO
800789	<1	<2	↓	↓	↓	↓
800797	<1	>2	↓	↓	↓	Yes 12:45PM
800804	<1 ~~BE~~ 4-3-12	>2	↓	↓	↓	Yes 15:PM
800830(1,2)	<1	>2	4-4-12	BE	Yes	3010A Yes 7:45AM
800831(~~2~~3)	<1	-2 >2	↓	↓	↓	-2 → Yes 7:45
800807	>1	<2			Yes	3010
800808	↓				↓	↓
800811	↓				↓	↓
800809	<1				NO	NO
800810	↓				↓	↓
800812	↓				↓	↓
800816	↓				↓	↓
800826-4	↓				↓	↓
800827	↓	↓	↓	↓	↓	↓
800823	↓	>2	↓	↓	↓	Yes 10:00 AM
800824(1-3)	↓	↓	↓	↓	↓	↓
800831(1,3)	<1	<2	4-4-12	↓	Yes	3010A

BE 4-4-12

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 120830

Date Delivered: 04/03/12 **Time:** 21:30 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3.4° C
7. Were samples received intact ☒Yes ☐No ☐N/A
   (i.e. broken bottles, leaks, air bubbles, etc..)?
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? ☐Yes ☐No ☒N/A
    Preserved (if yes) by: ☐**Truesdail** ☐Client
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? ☒Yes ☐No ☐N/A
    If not, notify Project Manager.
14. Have Project due dates been checked and accepted? ☒Yes ☐No ☐N/A
    Turn Around Time (TAT): ☐ **RUSH** ☒Std
15. **Sample Matrix:** ☐Liquid ☐Drinking Water ☒Ground Water ☐Waste Water
    ☐Sludge ☐Soil ☐Wipe ☐Paint ☐Solid ☐Other_____
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Stabucius

ALERT !! Level III QC

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

April 24, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 800968

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 April 10, 2012, 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.

No 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.

f.- Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

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

Laboratory No.: 800968
Date Received: April 10, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800968-001	MW-125-186	E218.6	FLDFLT	4/9/2012	13:21	Chromium, hexavalent	11.6	ug/L	1.0
800968-001	MW-125-186	SW6020	FLDFLT	4/9/2012	13:21	Chromium	11.3	ug/L	1.0
800968-002	MW-27-085-186	E218.6	FLDFLT	4/9/2012	8:55	Chromium, hexavalent	ND	ug/L	1.0
800968-002	MW-27-085-186	SW6020	FLDFLT	4/9/2012	8:55	Chromium	ND	ug/L	1.0
800968-003	MW-32-035-186	E218.6	FLDFLT	4/9/2012	14:13	Chromium, hexavalent	ND	ug/L	1.0
800968-003	MW-32-035-186	SW6020	FLDFLT	4/9/2012	14:13	Chromium	ND	ug/L	1.0
800968-004	MW-34-080-186	E218.6	FLDFLT	4/9/2012	10:53	Chromium, hexavalent	ND	ug/L	1.0
800968-004	MW-34-080-186	SW6020	FLDFLT	4/9/2012	10:53	Chromium	ND	ug/L	1.0
800968-005	MW-34-100-186	E218.6	FLDFLT	4/9/2012	13:22	Chromium, hexavalent	11.5	ug/L	1.0
800968-005	MW-34-100-186	SW6020	FLDFLT	4/9/2012	13:22	Chromium	12.4	ug/L	1.0
800968-006	MW-42-055-186	E218.6	FLDFLT	4/9/2012	15:28	Chromium, hexavalent	ND	ug/L	0.20
800968-006	MW-42-055-186	SW6020	FLDFLT	4/9/2012	15:28	Chromium	ND	ug/L	1.0
800968-007	MW-42-065-186	E218.6	FLDFLT	4/9/2012	16:00	Chromium, hexavalent	ND	ug/L	1.0
800968-007	MW-42-065-186	SW6020	FLDFLT	4/9/2012	16:00	Chromium	ND	ug/L	1.0
800968-008	MW-123-186	E218.6	FLDFLT	4/10/2012	8:20	Chromium, hexavalent	ND	ug/L	1.0
800968-008	MW-123-186	SW6020	FLDFLT	4/10/2012	8:20	Chromium	ND	ug/L	1.0
800968-009	MW-28-025-186	E218.6	FLDFLT	4/10/2012	8:56	Chromium, hexavalent	ND	ug/L	0.20
800968-009	MW-28-025-186	SW6020	FLDFLT	4/10/2012	8:56	Chromium	ND	ug/L	1.0
800968-010	MW-28-090-186	E218.6	FLDFLT	4/10/2012	8:19	Chromium, hexavalent	ND	ug/L	0.20
800968-010	MW-28-090-186	SW6020	FLDFLT	4/10/2012	8:19	Chromium	ND	ug/L	1.0
800968-011	MW-29-186	E218.6	FLDFLT	4/10/2012	10:22	Chromium, hexavalent	ND	ug/L	0.20
800968-011	MW-29-186	SW6020	FLDFLT	4/10/2012	10:22	Chromium	1.3	ug/L	1.0
800968-012	MW-30-030-186	E218.6	FLDFLT	4/10/2012	13:40	Chromium, hexavalent	ND	ug/L	1.0
800968-012	MW-30-030-186	SW6020	FLDFLT	4/10/2012	13:40	Chromium	ND	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800968-013	MW-36-090-186	E218.6	FLDFLT	4/10/2012	11:51	Chromium, hexavalent	ND	ug/L	0.20
800968-013	MW-36-090-186	SW6020	FLDFLT	4/10/2012	11:51	Chromium	ND	ug/L	1.0
800968-014	MW-36-100-186	E218.6	FLDFLT	4/10/2012	12:56	Chromium, hexavalent	59.8	ug/L	1.0
800968-014	MW-36-100-186	SW6020	FLDFLT	4/10/2012	12:56	Chromium	70.8	ug/L	1.0
800968-015	MW-34-080-186-EB	E218.6	FLDFLT	4/9/2012	9:29	Chromium, hexavalent	ND	ug/L	0.20
800968-016	MW-30-030-186-EB	E218.6	FLDFLT	4/10/2012	13:17	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.

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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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 800968

Printed 4/24/2012

Samples Received on 4/10/2012 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-125-186	800968-001	04/09/2012 13:21	Water
MW-27-085-186	800968-002	04/09/2012 08:55	Water
MW-32-035-186	800968-003	04/09/2012 14:13	Water
MW-34-080-186	800968-004	04/09/2012 10:53	Water
MW-34-100-186	800968-005	04/09/2012 13:22	Water
MW-42-055-186	800968-006	04/09/2012 15:28	Water
MW-42-065-186	800968-007	04/09/2012 16:00	Water
MW-123-186	800968-008	04/10/2012 08:20	Water
MW-28-025-186	800968-009	04/10/2012 08:56	Water
MW-28-090-186	800968-010	04/10/2012 08:19	Water
MW-29-186	800968-011	04/10/2012 10:22	Water
MW-30-030-186	800968-012	04/10/2012 13:40	Water
MW-36-090-186	800968-013	04/10/2012 11:51	Water
MW-36-100-186	800968-014	04/10/2012 12:56	Water
MW-34-080-186-EB	800968-015	04/09/2012 09:29	Water
MW-30-030-186-EB	800968-016	04/10/2012 13:17	Water

Chrome VI by EPA 218.6 Batch 04CrH12O

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800968-001 Chromium, Hexavalent	ug/L	04/18/2012 15:11	5.00	0.130	1.0	11.6
800968-002 Chromium, Hexavalent	ug/L	04/18/2012 15:22	5.00	0.130	1.0	ND
800968-003 Chromium, Hexavalent	ug/L	04/18/2012 15:32	5.00	0.130	1.0	ND
800968-004 Chromium, Hexavalent	ug/L	04/18/2012 17:37	5.00	0.130	1.0	ND
800968-005 Chromium, Hexavalent	ug/L	04/18/2012 18:50	5.00	0.130	1.0	11.5
800968-006 Chromium, Hexavalent	ug/L	04/18/2012 12:38	1.00	0.0260	0.20	ND
800968-007 Chromium, Hexavalent	ug/L	04/18/2012 17:16	5.00	0.130	1.0	ND
800968-008 Chromium, Hexavalent	ug/L	04/18/2012 17:26	5.00	0.130	1.0	ND
800968-009 Chromium, Hexavalent	ug/L	04/18/2012 13:31	1.00	0.0260	0.20	ND

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Method Blank

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

Duplicate — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	11.2	11.6	3.03	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.195	0.200	97.3	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100.	90 - 110

Matrix Spike — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	37.2	36.6(25.0)	102.	90 - 110

Matrix Spike — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	25.4	26.4(15.0)	93.4	90 - 110

Matrix Spike — Lab ID = 800968-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.365	1.00(1.00)	36.5	90 - 110

Matrix Spike — Lab ID = 800968-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.74	5.00(5.00)	94.9	90 - 110

Matrix Spike — Lab ID = 800968-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 800968-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.62	5.00(5.00)	92.4	90 - 110

Matrix Spike — Lab ID = 800968-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.77	5.00(5.00)	95.4	90 - 110

Matrix Spike — Lab ID = 800968-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.827	1.00(1.00)	82.7	90 - 110

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Matrix Spike — Lab ID = 800968-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	25.9	26.2(15.0)	98.2	90 - 110

Matrix Spike — Lab ID = 800968-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	36.9	36.5(25.0)	102.	90 - 110

Matrix Spike — Lab ID = 800968-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.970	1.00(1.00)	97.0	90 - 110

Matrix Spike — Lab ID = 800968-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.67	5.00(5.00)	93.4	90 - 110

Matrix Spike — Lab ID = 800968-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.815	1.00(1.00)	81.5	90 - 110

Matrix Spike — Lab ID = 800968-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.796	1.10(1.00)	70.1	90 - 110

Matrix Spike — Lab ID = 800968-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.70	5.00(5.00)	94.0	90 - 110

Matrix Spike — Lab ID = 800968-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.980	1.00(1.00)	98.0	90 - 110

Matrix Spike — Lab ID = 801119-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.81	8.71(5.00)	102.	90 - 110

Matrix Spike — Lab ID = 801119-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.62	8.58(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 801119-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.61	8.58(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 801119-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.38	9.31(5.00)	101.	90 - 110

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Chrome VI by EPA 218.6

Batch 04CrH12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800968-010 Chromium, Hexavalent	ug/L	04/19/2012 12:47	1.00	0.0260	0.20	ND
800968-011 Chromium, Hexavalent	ug/L	04/19/2012 12:57	1.00	0.0260	0.20	ND
800968-012 Chromium, Hexavalent	ug/L	04/19/2012 15:44	5.00	0.130	1.0	ND
800968-013 Chromium, Hexavalent	ug/L	04/19/2012 13:18	1.00	0.0260	0.20	ND
800968-014 Chromium, Hexavalent	ug/L	04/19/2012 13:28	5.00	0.130	1.0	59.8
800968-015 Chromium, Hexavalent	ug/L	04/19/2012 13:39	1.00	0.0260	0.20	ND
800968-016 Chromium, Hexavalent	ug/L	04/19/2012 13:49	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 800968-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	59.5	59.8	0.528	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.202	0.200	101.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.15	5.00	103.	90 - 110

Matrix Spike — Lab ID = 800968-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.00(1.00)	98.6	90 - 110

Matrix Spike — Lab ID = 800968-011

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 = 800968-012

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 = 800968-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.34	5.00(5.00)	107.	90 - 110

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Matrix Spike — Lab ID = 800968-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.03(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 800968-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	136.	135.(75.0)	102.	90 - 110

Matrix Spike — Lab ID = 800968-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.00(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 800968-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.996	1.00(1.00)	99.6	90 - 110

Matrix Spike — Lab ID = 801118-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.97	7.81(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 801118-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.95	7.74(5.00)	104.	90 - 110

Matrix Spike — Lab ID = 801118-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.65	8.46(5.00)	104.	90 - 110

Matrix Spike — Lab ID = 801120-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.53	1.55(1.00)	97.8	90 - 110

Matrix Spike — Lab ID = 801120-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.984	1.00(1.00)	98.4	90 - 110

Matrix Spike — Lab ID = 801120-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.87	1.89(1.00)	98.1	90 - 110

Matrix Spike — Lab ID = 801120-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.16	6.02(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 801120-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.11	6.95(5.00)	103.	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 041912A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800968-001 Chromium	ug/L	04/19/2012 21:50	5.00	0.195	1.0	11.3
800968-002 Chromium	ug/L	04/19/2012 22:19	5.00	0.195	1.0	ND
800968-003 Chromium	ug/L	04/19/2012 22:26	5.00	0.195	1.0	ND
800968-004 Chromium	ug/L	04/19/2012 22:33	5.00	0.195	1.0	ND
800968-005 Chromium	ug/L	04/19/2012 22:54	5.00	0.195	1.0	12.4
800968-006 Chromium	ug/L	04/19/2012 23:01	5.00	0.195	1.0	ND
800968-007 Chromium	ug/L	04/19/2012 23:09	5.00	0.195	1.0	ND
800968-008 Chromium	ug/L	04/19/2012 23:16	5.00	0.195	1.0	ND
800968-009 Chromium	ug/L	04/19/2012 23:23	5.00	0.195	1.0	ND
800968-010 Chromium	ug/L	04/19/2012 23:30	5.00	0.195	1.0	ND
800968-011 Chromium	ug/L	04/19/2012 23:37	5.00	0.195	1.0	1.3
800968-012 Chromium	ug/L	04/19/2012 23:44	5.00	0.195	1.0	ND
800968-013 Chromium	ug/L	04/20/2012 00:13	5.00	0.195	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	11.6	11.3	2.96	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.182	0.200	90.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.0	100.	98.0	85 - 115

Matrix Spike — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	114.	111.(100.)	102.	75 - 125

Matrix Spike Duplicate — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	113.	111.(100.)	101.	75 - 125

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Metals by EPA 6020A, Dissolved

Batch 042012B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800968-014 Chromium	ug/L	04/20/2012 20:06	5.00	0.195	1.0	70.8

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	13.1	13.2	1.07	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.211	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.2	100.	99.2	85 - 115

Matrix Spike — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	120.	113.(100.)	107.	75 - 125

Matrix Spike Duplicate — Lab ID = 800968-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	130.	113.(100.)	117.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.7	10.0	107.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

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Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.96	10.0	99.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.92	10.0	99.2	80 - 120

Serial Dilution Lab ID = 800968-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	65.7	70.8	7.43	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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CH2MHILL **CHAIN OF CUSTODY RECORD** 800968 4/10/2012 3:20:46 PM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/10/2012
COC Number: 2

	DATE	TIME	Matrix	Container: 250 ml Poly	Preservatives: (NH4)2SO4/NH4OH, 4°C	Filtered: Field	Holding Time: 28	Cr6 (E218.6) Field Filtered	Container: 2x250 ml Poly	Preservatives: (NH4)2SO4/NH4OH, 4°C	Filtered: Field	Holding Time: 28	Cr6 (E218.6R) Field Filtered	Container: 500 ml Poly	Preservatives: HNO3, 4°C	Filtered: Field	Holding Time: 180	Metals (6020AFF) Field Filtered Chromium	Number of Containers	COMMENTS
1 MW-125-186	4/9/2012	13:21	Water					X										X	2	pH=2
2 MW-27-085-186	4/9/2012	8:55	Water										X					X	3	pH=2
MW-27-085-186-EB	4/9/2012	7:45	Water	X															1	Hold
3 MW-32-035-186	4/9/2012	14:13	Water										X					X	3	pH=2
MW-32-035-186-EB	4/9/2012	13:30	Water	X															1	Hold
4 MW-34-060-186	4/9/2012	10:53	Water										X					X	3	?
5 MW-34-100-186	4/9/2012	13:22	Water	X														X	2	pH=2
6 MW-42-055-186	4/9/2012	15:28	Water										X					X	3	
MW-42-055-186-EB	4/9/2012	15:03	Water	X															1	Hold
7 MW-42-065-186	4/9/2012	16:00	Water										X					X	3	pH=2
MW-42-065-186-EB	4/9/2012	15:35	Water	X															1	Hold
MW-80-186	4/9/2012	16:50	Water	X															1	Hold
8 MW-123-186	4/10/2012	8:20	Water										X					X	3	
9 MW-28-025-186	4/10/2012	8:56	Water										X					X	3	pH=2

* Where provided w/2 Cr6 bottles, please analyze one + hold one

pH for 6020A

ALERT !! Level III QC

For Sample Conditions See Form Attached

Signatures	Date/Time	Shipping Details	ATTN:	Special Instructions:
Approved by				
Sampled by				
Relinquished by	4-10-12 1550	Method of Shipment: courier		April 9 to May 11, 2012
Received by	4-10-12 1550	On Ice: yes / no	Sample Custody	
Relinquished by	4-10-12 2200	Airbill No:		
Received by	4/11/12 2210	Lab Name: Truesdail Laboratories, Inc.		Report Copy to
		Lab Phone: (714) 730-6239		Shawn Duffy (530) 229-3303

800968

CH2MHILL **CHAIN OF CUSTODY RECORD** 4/10/2012 3:20:46 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.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/10/2012
COC Number: 2

	DATE	TIME	Matrix	Container: 250 ml Poly	2x250 ml Poly	500 ml Poly	Number of Containers	COMMENTS
				Preservatives: (NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C		
				Filtered: Field	Field	Field		
				Holding Time: 28	28	180		
				Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium		
MW-28-025-186-EB	4/10/2012	8:25	Water	X			1	Hold
-10 MW-28-090-186	4/10/2012	8:19	Water		X	X	3	pH=2
MW-28-090-186-EB	4/10/2012	7:30	Water	X			1	Hold
-11 MW-29-186	4/10/2012	10:22	Water		X	X	3	pH=2
MW-29-186-EB	4/10/2012	9:52	Water	X			1	Hold
-12 MW-30-030-186	4/10/2012	13:40	Water	X		X	2	
-13 MW-36-090-186	4/10/2012	11:51	Water	X		X	2	pH=2
-14 MW-36-100-186	4/10/2012	12:56	Water	X		X	2	
MW-81-186	4/9/2012	16:45	Water	X			1	Hold
MW-82-186	4/10/2012	14:45	Water	X			1	Hold
MW-83-186	4/10/2012	14:47	Water	X			1	Hold
-15 MW-34-080-186-EB	4-9-12	0924	"	X			1	
-16 MW-30-030-186-EB	4-10-12	1317	"	X				
						TOTAL NUMBER OF CONTAINERS	~~40~~ 50	

* Where provided w/2 Cr6 bottles, please analyze one + hold one

ALERT !! Level III QC

	Signatures	Date/Time
Approved by		
Sampled by		4-10-12 1550
Relinquished by		
Received by		4-10-12 1550
Relinquished by		4-10-12 2200
Received by		4/10/12 22:00

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
4/11/2012	800968-1	9.5	NA	NA	NA	MJ
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
	-15					
	-16					
~~4/12/12~~	~~800~~					
4/13/12	801057-1	9.5	N/A	N/A	N/A	MG
	-2					
	-3					
	-4					
	-5					
	-6					
	801058-1					
	-2					
	-3					

MVH
4/13/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800853 (11-13)	<1	>2	4-5-12	BE	NO	YES 7:30AM
800861 (1-2, 4-9)	<1	<2			YES	30%A
800875-4	<1	<2			NO	YES
800866	>1	>2			YES	30%A YES 14:30
800878	↓	<2			YES	30%A ~~YES 14:30~~ BE 4-5-12
800880	<1	↓			NO	
800879	>1	↓			YES	30%A
~~800891~~ 800907	>1	<2	4-6-12	BE	YES	30%A
800895 (1-5)	<1	<2			↓	↓
800809	>1	<2	↓	↓	↓	↓
800121 (1-2)	<1	<2	↓	↓	YES	30%A
800913	>1	<2	4-9-12	BE	YES	30%A
800914	>1	↓	↓	↓	↓	↓
800915 (1-33)	<1	>2			NO	YES 7:45AM
800916 (1-18)	↓	↓	↓	↓	↓	↓
800917 (1-17)	↓	↓	↓	↓	↓	↓
800918 (1-18)	↓	↓	↓	↓	↓	↓
800926	<1	<2	4-10-12	BE	NO	NO
800929	↓	↓	↓	↓	↓	↓
800930	↓	>2	↓	↓	BE 4-10-12 YES	30%A YES 7:30AM
800931 (1-4)	-2,3 >1	<2	↓	↓	-2,3 YES	30%A
800934 (1-9, 11-13)	<1	↓	↓	↓	YES	30%A
800936 (1-7)	↓	↓	↓	↓	↓	↓
800935 (1-6)	↓	↓	↓	↓	↓	↓
800939	↓	↓	↓	↓	YES 30%A NO	↓
800964 (1-10)	<1	<2	4-11-12	BE	YES	30%A
800963-1	↓	↓	↓	↓	↓	↓
800965 (1-8)	↓	↓	↓	↓	↓	↓
800966 (1-9)	↓	↓	↓	↓	↓	↓
800967	↓	>2	↓	↓	↓	YES 8:30AM
800968 (1-14)	-1,2 >1	<2	↓	↓	↓	↓
800935 (1-3	<1	>2	↓	↓	NO	YES 14:00
BE 4-11-12 800949 ~~800949~~	>1	<2	↓	↓	YES	30%A
800950	↓	↓	↓	↓	↓	↓
800970	↓	↓	↓	↓	↓	↓
800974-4	↓	↓	↓	↓	↓	↓
800972	<1	↓	↓	↓	NO	NO
800971	↓	↓	↓	↓	YES	30%A BE 4-11-12
800982 (1-3)	<1	>2	4-12-12	BE	NO	YES 8:30
800986 (1-3)	-2 >1	<2	↓	↓	-2 YES	30%A -2
800998 (1-28)	<1	1-12 >2	↓	↓	NO	1-12 YES 8:45
800999 (1-24)	<1	<2	↓	↓	NO	NO
800997 (1-28)	<1	<2	↓	↓	NO	NO
800989	<1	<2	↓	↓	NO	NO
800990	>1	<2	↓	↓	YES	30%A
800991	>1	>2	↓	↓	YES	30%A YES 10:AM
800992	<1	>2	↓	↓	NO	YES 10:00AM
800807	>1	<2	↓	↓	YES	30%A
800808	>1	<2	4-13-12	BE	YES	30%A

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 120968

Date Delivered: 04/12/12 **Time:** 12:00 **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: L. Stabenfeldt

Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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

May 17, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801084

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 April 16, 2012, 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.

Due to the discrepancy between the Total Dissolved Chromium (17.9 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample MW-44-125-186-Q2, Mr. Shawn Duffy was notified. Mr. Duffy requested that sample from the Hexavalent Chromium sample container be digested and analyzed for Total Dissolved Chromium. The result was 9.4 ug/L. The original results were reported.

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

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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

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

Laboratory No.: 801084
Date Received: April 16, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801084-001	MW-22-186	E218.6	FLDFLT	4/11/2012	15:04	Chromium, hexavalent	ND	ug/L	1.0
801084-001	MW-22-186	SW6020	FLDFLT	4/11/2012	15:04	Chromium	ND	ug/L	1.0
801084-002	MW-52D-186	E218.6	FLDFLT	4/11/2012	10:35	Chromium, hexavalent	ND	ug/L	1.0
801084-002	MW-52D-186	SW6020	FLDFLT	4/11/2012	10:35	Chromium	ND	ug/L	1.0
801084-003	MW-52M-186	E218.6	FLDFLT	4/11/2012	9:34	Chromium, hexavalent	ND	ug/L	1.0
801084-003	MW-52M-186	SW6020	FLDFLT	4/11/2012	9:34	Chromium	ND	ug/L	1.0
801084-004	MW-52S-186	E218.6	FLDFLT	4/11/2012	8:18	Chromium, hexavalent	ND	ug/L	0.20
801084-004	MW-52S-186	SW6020	FLDFLT	4/11/2012	8:18	Chromium	ND	ug/L	1.0
801084-005	MW-53D-186	E218.6	FLDFLT	4/11/2012	13:39	Chromium, hexavalent	ND	ug/L	1.0
801084-005	MW-53D-186	SW6020	FLDFLT	4/11/2012	13:39	Chromium	ND	ug/L	1.0
801084-006	MW-53M-186	E218.6	FLDFLT	4/11/2012	12:33	Chromium, hexavalent	ND	ug/L	1.0
801084-006	MW-53M-186	SW6020	FLDFLT	4/11/2012	12:33	Chromium	ND	ug/L	1.0
801084-007	MW-126-186	E218.6	FLDFLT	4/12/2012	14:16	Chromium, hexavalent	124	ug/L	2.00
801084-007	MW-126-186	SW6020	FLDFLT	4/12/2012	14:16	Chromium	125	ug/L	1.0
801084-008	MW-44-070-186	E218.6	FLDFLT	4/12/2012	12:53	Chromium, hexavalent	ND	ug/L	0.20
801084-008	MW-44-070-186	SW6020	FLDFLT	4/12/2012	12:53	Chromium	ND	ug/L	1.0
801084-009	MW-44-115-186	E218.6	FLDFLT	4/12/2012	14:14	Chromium, hexavalent	122	ug/L	2.0
801084-009	MW-44-115-186	SW6020	FLDFLT	4/12/2012	14:14	Chromium	134	ug/L	1.0
801084-010	MW-44-125-186	E218.6	FLDFLT	4/12/2012	11:55	Chromium, hexavalent	ND	ug/L	0.20
801084-010	MW-44-125-186	SW6020	FLDFLT	4/12/2012	11:55	Chromium	17.9	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801084-011	MW-46-205-186	E218.6	FLDFLT	4/12/2012	15:47	Chromium, hexavalent	5.1	ug/L	1.0
801084-011	MW-46-205-186	SW6020	FLDFLT	4/12/2012	15:47	Chromium	5.9	ug/L	1.0

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.

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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

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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801084

Printed 5/17/2012

Samples Received on 4/16/2012 10:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-22-186	801084-001	04/11/2012 15:04	Water
MW-52D-186	801084-002	04/11/2012 10:35	Water
MW-52M-186	801084-003	04/11/2012 09:34	Water
MW-52S-186	801084-004	04/11/2012 08:18	Water
MW-53D-186	801084-005	04/11/2012 13:39	Water
MW-53M-186	801084-006	04/11/2012 12:33	Water
MW-126-186	801084-007	04/12/2012 14:16	Water
MW-44-070-186	801084-008	04/12/2012 12:53	Water
MW-44-115-186	801084-009	04/12/2012 14:14	Water
MW-44-125-186	801084-010	04/12/2012 11:55	Water
MW-46-205-186	801084-011	04/12/2012 15:47	Water

Chrome VI by EPA 218.6 Batch 05CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801084-001 Chromium, Hexavalent	ug/L	05/01/2012 16:50	5.00	0.125	1.0	ND
801084-002 Chromium, Hexavalent	ug/L	05/01/2012 17:00	5.00	0.125	1.0	ND
801084-003 Chromium, Hexavalent	ug/L	05/01/2012 17:11	5.00	0.125	1.0	ND
801084-004 Chromium, Hexavalent	ug/L	05/01/2012 15:27	1.00	0.0250	0.20	ND
801084-005 Chromium, Hexavalent	ug/L	05/01/2012 20:22	5.00	0.125	1.0	ND
801084-006 Chromium, Hexavalent	ug/L	05/01/2012 20:32	5.00	0.125	1.0	ND
801084-007 Chromium, Hexavalent	ug/L	05/01/2012 19:49	10.0	0.250	2.0	124.
801084-008 Chromium, Hexavalent	ug/L	05/01/2012 21:18	1.00	0.0250	0.20	ND
801084-009 Chromium, Hexavalent	ug/L	05/01/2012 21:49	10.0	0.250	2.0	122.
801084-010 Chromium, Hexavalent	ug/L	05/01/2012 22:00	1.00	0.0250	0.20	ND
801084-011 Chromium, Hexavalent	ug/L	05/01/2012 22:52	5.00	0.125	1.0	5.1

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Method Blank

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

Duplicate — Lab ID = 801084-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	ND	0.00	0	0 - 20

Duplicate — Lab ID = 801084-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.198	0.200	99.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.03	5.00	100.	90 - 110

Matrix Spike — Lab ID = 801084-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.959	1.00(1.00)	95.9	90 - 110

Matrix Spike — Lab ID = 801084-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.82	5.00(5.00)	96.3	90 - 110

Matrix Spike — Lab ID = 801084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 801084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.89	5.00(5.00)	97.8	90 - 110

Matrix Spike — Lab ID = 801084-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.805	1.00(1.00)	80.5	90 - 110

Matrix Spike — Lab ID = 801084-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.80	5.00(5.00)	96.0	90 - 110

Matrix Spike — Lab ID = 801084-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.979	1.00(1.00)	97.9	90 - 110

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Matrix Spike — Lab ID = 801084-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 801084-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.98	5.00(5.00)	99.6	90 - 110

Matrix Spike — Lab ID = 801084-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.97	5.00(5.00)	99.5	90 - 110

Matrix Spike — Lab ID = 801084-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 801084-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	274.	274(150.)	100.	90 - 110

Matrix Spike — Lab ID = 801084-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	01000	1.00(1.00)	100.0	90 - 110

Matrix Spike — Lab ID = 801084-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	277.	272(150.)	103.	90 - 110

Matrix Spike — Lab ID = 801084-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.07	1.08(1.00)	98.7	90 - 110

Matrix Spike — Lab ID = 801084-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	29.9	30.1(25.0)	99.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.00	5.00	100.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

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Metals by EPA 6020A, Dissolved

Batch 042312B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801084-001 Chromium	ug/L	04/23/2012 22:04	5.00	0.195	1.0	ND
801084-002 Chromium	ug/L	04/23/2012 22:11	5.00	0.195	1.0	ND
801084-003 Chromium	ug/L	04/23/2012 22:18	5.00	0.195	1.0	ND
801084-004 Chromium	ug/L	04/23/2012 22:25	5.00	0.195	1.0	ND
801084-005 Chromium	ug/L	04/23/2012 22:32	5.00	0.195	1.0	ND
801084-006 Chromium	ug/L	04/23/2012 22:39	5.00	0.195	1.0	ND
801084-008 Chromium	ug/L	04/23/2012 23:07	5.00	0.195	1.0	ND
801084-010 Chromium	ug/L	04/23/2012 23:22	5.00	0.195	1.0	17.9
801084-011 Chromium	ug/L	04/23/2012 23:29	5.00	0.195	1.0	5.9

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.174	0.200	87.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.7	100.	97.7	85 - 115

Matrix Spike — Lab ID = 801081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	109.	102.(100.)	107.	75 - 125

Matrix Spike Duplicate — Lab ID = 801081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	114.	102.(100.)	112.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.79	10.0	97.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.97	10.0	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

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Metals by EPA 6020A, Dissolved Batch 042512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801084-007 Chromium	ug/L	04/25/2012 16:45	5.00	0.195	1.0	125.
801084-009 Chromium	ug/L	04/25/2012 16:59	5.00	0.195	1.0	134

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801081-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	1.96	2.16	9.91	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.218	0.200	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.	100.	85 - 115

Matrix Spike — Lab ID = 801081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	121.	102.(100.)	119.	75 - 125

Matrix Spike Duplicate — Lab ID = 801081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	126.	102.(100.)	124.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.90	10.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.3	10.0	103.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.93	10.0	99.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.3	10.0	103.	80 - 120

Serial Dilution Lab ID = 801084-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	120.	125	3.92	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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801084

Rec'd 04/16/12
~~SCA~~ 801084

CH2MHILL

CHAIN OF CUSTODY RECORD

4/16/2012 4:09:30 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/17/2012
COC Number: 4

	Container:	250 ml Poly	2x250 ml Poly	500 ml Poly
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C
	Filtered:	Field	Field	Field
	Holding Time:	28	28	180
		Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium

* Where provided w/ 2 Cr6 bottles, please analyze one + hold one.

ALERT !!
Level III QC

Sample Conditions Form Attached

		DATE	TIME	Matrix				Number of Containers	COMMENTS
1	MW-22-186	4/11/2012	15:04	Water	X		X	2	pH for 6020A
2	MW-52D-186	4/11/2012	10:35	Water		X	X	3	
3	MW-52M-186	4/11/2012	9:34	Water		X	X	3	
4	MW-52S-186	4/11/2012	8:18	Water		X	X	3	pH 2
5	MW-53D-186	4/11/2012	13:39	Water		X	X	3	
6	MW-53M-186	4/11/2012	12:33	Water		X	X	3	
7	MW-126-186	4/12/2012	14:16	Water	X		X	2	
8	MW-44-070-186	4/12/2012	12:53	Water		X	X	3	
	MW-44-070-186-EB	4/12/2012	12:01	Water	X			1	Hold
9	MW-44-115-186	4/12/2012	14:14	Water	X		X	2	
10	MW-44-125-186	4/12/2012	11:55	Water	X		X	2	pH 2
11	MW-46-205-186	4/12/2012	15:47	Water	X		X	2	
	MW-84-186	4/12/2012	16:32	Water	X			1	Hold
							TOTAL NUMBER OF CONTAINERS	30	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		4-16-12 1650
Received by		1655
Relinquished by		4/16/12 2230
Received by		4-16-12 22:30

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
4/17/12	801081-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
4/17/12	801084-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
4/17/12	801082-1	9.5	N/A	N/A	N/A	MG
4/17/12	801083-	7	2mL	9.5	7:30	MG

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1013-4	>1	<2	4-13-12	BE	Yes	3010A
80 1014	<1	↓	↓	↓	NO	NO
80 1023 (1-8	<1	↓	↓	↓	Yes	3010A
80 1017	>1	↓	↓	↓	↓	↓
80 1018	<1	↓	↓	↓	NO	NO
80 1056 (1-2)	<1	<2	4-16-12	BE	Yes	3010A
80 1057 (1-5)	↓	↓	↓	↓	↓	↓
80 1043 (1,3)	>1	↓	↓	↓	↓	↓
80 1045 (1-24)	<1	>2	↓	↓	NO	Yes 8:00 AM
80 1046 (1-50)	↓	↓	↓	↓	↓	8:00 AM
80 1048 (1-80)	↓	↓	↓	↓	↓	8:45 AM
80 1047 (1-93)	↓	1-23<2 24-93>2	↓	↓	↓	Yes 24-93 9:15AM
80 1050	>1	<2	↓	↓	Yes	3010A
80 1044 (1-34)	<1	>2	↓	↓	NO	Yes 10:15AM
80 1059	>1	>2	↓	↓	Yes	3010A Yes 11:15
80 1068	<1	<2	4-17-12	BE	NO	NO
80 1067	↓	↓	↓	↓	↓	↓
80 1075	↓	>2	↓	↓	↓	Yes 9:30AM
80 1081 (1-3,5)	↓	<2	↓	↓	Yes	3010A
80 1082-1	>1	<2	↓	↓	↓	↓
80 1084 (1-11	<1	↓	↓	↓	↓	↓
80 1083	↓	>2	↓	↓	↓	Yes 9:30AM
80 1077	<1	<2	4-19-12	BE	NO	NO
80 1078 (1,2)	>1	<2	↓	↓	Yes	3010A
80 1079 (1-2)	↓	↓	↓	↓	↓	↓
80 1103 (1-3)	<1	>2	↓	↓	NO	Yes 8:00 AM
80 1110	↓	<2	↓	↓	↓	NO
80 1111	↓	↓	↓	↓	↓	↓
80 1112	↓	↓	↓	↓	↓	↓
80 1113	↓	↓	↓	↓	↓	↓
80 1114	↓	↓	↓	↓	↓	↓
80 1115	↓	↓	↓	↓	Yes	3010A
80 1116	↓	↓	↓	↓	NO	↓
80 1118 (1-7)	↓	↓	↓	↓	Yes	3010A
80 1119 (1-5, 7-8)	↓	↓	↓	↓	↓	↓
80 1120 (193-1)	↓	↓	↓	↓	↓	↓
80 1129 (1-9)	↓	>2	↓	↓	NO	Yes 8:30AM
80 1134 (10-12)	↓	>2	BE 4-19-12	↓	↓	↓
80 1136 (192-7)	↓	<2	↓	↓	Yes	3010A
80 1137 (1-3	↓	↓	↓	↓	↓	↓
80 1138 (1-8)	↓	↓	↓	↓	↓	↓
80 1144 (1-7	<1	>2	↓	↓	NO	Yes 17:15
80 1145 (1-7)	↓	↓	↓	↓	↓	↓
80 1146 (1-10)	↓	<2	↓	↓	NO	NO
80 1147 (1-10)	↓	>2	↓	↓	↓	Yes 17:15
80 1148 (1-10)	↓	↓	↓	↓	↓	↓
80 1149 (1-5	↓	↓	↓	↓	↓	↓
80 1142 (1-2)	>1	<2	↓	↓	Yes	3010A
80 1135	<1	>2	↓	↓	NO	Yes 17:15

TRUESDAIL LABORATORIES, INC.

ALERT !! Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801084

Date Delivered: 4/16/12 **Time:** 22:30 **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)? 4 °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 COC	☒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: Hez

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

June 19, 2012

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801217

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 April 24, 2012, 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.

Due to the discrepancy between the Total Dissolved Chromium (2.1 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample MW-64BR-UPR-150-186-Q2, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were 2.2 ug/L and 1.4 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 2.3 ug/L. The original results were reported.

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

Laboratory No.: 801217
Date Received: April 24, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801217-001	MW-64BR-UPR-150-186	E218.6	FLDFLT	4/16/2012	15:35	Chromium, hexavalent	ND	ug/L	1.0
801217-001	MW-64BR-UPR-150-186	SW6020	FLDFLT	4/16/2012	15:35	Chromium	2.1	ug/L	1.0
801217-002	MW-64BR-LWR-150-186	E218.6	FLDFLT	4/19/2012	10:25	Chromium, hexavalent	21.9	ug/L	1.0
801217-002	MW-64BR-LWR-150-186	SW6020	FLDFLT	4/19/2012	10:25	Chromium	23.2	ug/L	1.0
801217-003	MW-124-186	E218.6	FLDFLT	4/23/2012	7:15	Chromium, hexavalent	11.5	ug/L	1.0
801217-003	MW-124-186	SW6020	FLDFLT	4/23/2012	7:15	Chromium	12.1	ug/L	1.0
801217-004	MW-33-040-186	E218.6	FLDFLT	4/23/2012	9:17	Chromium, hexavalent	ND	ug/L	0.20
801217-004	MW-33-040-186	SW6020	FLDFLT	4/23/2012	9:17	Chromium	ND	ug/L	1.0
801217-005	MW-33-150-186	E218.6	FLDFLT	4/23/2012	10:22	Chromium, hexavalent	11.3	ug/L	1.0
801217-005	MW-33-150-186	SW6020	FLDFLT	4/23/2012	10:22	Chromium	12.0	ug/L	1.0
801217-006	MW-33-210-186	E218.6	FLDFLT	4/23/2012	14:49	Chromium, hexavalent	10.5	ug/L	1.0
801217-006	MW-33-210-186	SW6020	FLDFLT	4/23/2012	14:49	Chromium	11.0	ug/L	1.0
801217-007	MW-46-175-186	E218.6	FLDFLT	4/23/2012	13:23	Chromium, hexavalent	34.4	ug/L	1.0
801217-007	MW-46-175-186	SW6020	FLDFLT	4/23/2012	13:23	Chromium	40.5	ug/L	1.0
801217-008	MW-85-186	E218.6	FLDFLT	4/24/2012	8:50	Chromium, hexavalent	ND	ug/L	0.20
801217-009	MW-86-186	E218.6	FLDFLT	4/24/2012	8:53	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.

004

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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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801217

Printed 5/24/2012

Samples Received on 4/24/2012 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-64BR-UPR-150-'	801217-001	04/16/2012 15:35	Water
MW-64BR-LWR-150-	801217-002	04/19/2012 10:25	Water
MW-124-186	801217-003	04/23/2012 07:15	Water
MW-33-040-186	801217-004	04/23/2012 09:17	Water
MW-33-150-186	801217-005	04/23/2012 10:22	Water
MW-33-210-186	801217-006	04/23/2012 14:49	Water
MW-46-175-186	801217-007	04/23/2012 13:23	Water
MW-85-186	801217-008	04/24/2012 08:50	Water
MW-86-186	801217-009	04/24/2012 08:53	Water

Chrome VI by EPA 218.6

Batch 04CrH12W

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801217-001 Chromium, Hexavalent	ug/L	04/26/2012 19:16	5.00	0.125	1.0	ND
801217-002 Chromium, Hexavalent	ug/L	04/26/2012 19:26	5.00	0.125	1.0	21.9
801217-003 Chromium, Hexavalent	ug/L	04/26/2012 22:21	5.00	0.125	1.0	11.5
801217-004 Chromium, Hexavalent	ug/L	04/26/2012 14:15	1.00	0.0250	0.20	ND
801217-005 Chromium, Hexavalent	ug/L	04/26/2012 20:33	5.00	0.125	1.0	11.3
801217-006 Chromium, Hexavalent	ug/L	04/26/2012 20:44	5.00	0.125	1.0	10.5
801217-007 Chromium, Hexavalent	ug/L	04/26/2012 20:54	5.00	0.125	1.0	34.4
801217-008 Chromium, Hexavalent	ug/L	04/26/2012 16:27	1.00	0.0250	0.20	ND

Method Blank

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

Duplicate — Lab ID = 801219-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.88	2.89	0.423	0 - 20

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Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.213	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.66	5.00	93.2	90 - 110

Matrix Spike — Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.88	5.06(5.00)	96.2	90 - 110

Matrix Spike — Lab ID = 801217-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	46.7	46.9(25.0)	99.2	90 - 110

Matrix Spike — Lab ID = 801217-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	37.0	36.5(25.0)	102.	90 - 110

Matrix Spike — Lab ID = 801217-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.03(1.00)	98.5	90 - 110

Matrix Spike — Lab ID = 801217-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	36.0	36.3(25.0)	98.8	90 - 110

Matrix Spike — Lab ID = 801217-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	35.1	35.5(25.0)	98.3	90 - 110

Matrix Spike — Lab ID = 801217-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	84.3	84.4(50.0)	99.7	90 - 110

Matrix Spike — Lab ID = 801217-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.01(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 801219-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.10	1.09(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 801219-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.998	1.01(1.00)	98.8	90 - 110

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Chrome VI by EPA 218.6

Batch 04CrH12X

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801217-009 Chromium, Hexavalent	ug/L	04/27/2012 19:32	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 801218-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.06	1.00	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.185	0.200	92.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.76	5.00	95.3	90 - 110

Matrix Spike — Lab ID = 801216-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.12	5.09(5.00)	100.	90 - 110

Matrix Spike — Lab ID = 801216-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.09(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 801217-009

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

Matrix Spike — Lab ID = 801218-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.04	6.06(5.00)	99.7	90 - 110

Matrix Spike — Lab ID = 801218-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.15	6.15(5.00)	100.	90 - 110

Matrix Spike — Lab ID = 801218-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.98	6.92(5.00)	101.	90 - 110

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Metals by EPA 6020A, Dissolved Batch 050912C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801217-001 Chromium	ug/L	05/10/2012 08:16	5.00	0.195	1.0	2.1
801217-002 Chromium	ug/L	05/10/2012 09:13	5.00	0.195	1.0	23.2
801217-003 Chromium	ug/L	05/10/2012 09:20	5.00	0.195	1.0	12.1
801217-004 Chromium	ug/L	05/10/2012 09:27	5.00	0.195	1.0	ND
801217-005 Chromium	ug/L	05/10/2012 09:35	5.00	0.195	1.0	12.0
801217-006 Chromium	ug/L	05/10/2012 09:42	5.00	0.195	1.0	11.0

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
Selenium	ug/L	1.00	ND
Vanadium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.221	0.200	110.	70 - 130
Barium	ug/L	1.00	1.00	1.00	100.	70 - 130
Beryllium	ug/L	1.00	0.216	0.200	108.	70 - 130
Cadmium	ug/L	1.00	0.206	0.200	103.	70 - 130
Cobalt	ug/L	1.00	0.953	1.00	95.3	70 - 130
Chromium	ug/L	1.00	0.238	0.200	119.	70 - 130
Mercury	ug/L	1.00	0.195	0.200	97.4	70 - 130
Selenium	ug/L	1.00	1.01	1.00	101.	70 - 130
Vanadium	ug/L	1.00	1.08	1.00	108	70 - 130
Manganese	ug/L	1.00	0.199	0.200	99.6	70 - 130
Molybdenum	ug/L	1.00	0.923	1.00	92.3	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	89.6	100.	89.6	85 - 115
Barium	ug/L	5.00	91.4	100.	91.4	85 - 115
Beryllium	ug/L	5.00	88.7	100.	88.7	85 - 115
Cadmium	ug/L	5.00	88.6	100.	88.6	85 - 115
Cobalt	ug/L	5.00	89.6	100.	89.6	85 - 115
Chromium	ug/L	5.00	91.3	100.	91.3	85 - 115
Mercury	ug/L	5.00	18.3	20.0	91.4	85 - 115
Selenium	ug/L	5.00	84.7	100.	84.7	85 - 115
Vanadium	ug/L	5.00	92.4	100.	92.4	85 - 115
Manganese	ug/L	5.00	87.1	100.	87.1	85 - 115
Molybdenum	ug/L	5.00	90.2	100.	90.2	85 - 115

Matrix Spike Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	95.5	102.(100.)	93.6	75 - 125
Barium	ug/L	5.00	165.	164.(100.)	101.	75 - 125
Beryllium	ug/L	5.00	93.8	100.(100.)	93.8	75 - 125
Cadmium	ug/L	5.00	82.2	100.(100.)	82.2	75 - 125
Cobalt	ug/L	5.00	95.4	100.(100.)	95.4	75 - 125
Chromium	ug/L	5.00	102.	102.(100.)	100.	75 - 125
Mercury	ug/L	5.00	17.5	20.0(20.0)	87.6	75 - 125
Selenium	ug/L	5.00	86.0	100.(100.)	86.0	75 - 125
Vanadium	ug/L	5.00	106.	100.(100.)	106.	75 - 125
Manganese	ug/L	5.00	511.	490.(100.)	121.	75 - 125
Molybdenum	ug/L	5.00	146.	148(100.)	98.2	75 - 125

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Matrix Spike Duplicate Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	96.3	102.(100.)	94.4	75 - 125
Barium	ug/L	5.00	169.	164.(100.)	105.	75 - 125
Beryllium	ug/L	5.00	94.5	100.(100.)	94.5	75 - 125
Cadmium	ug/L	5.00	82.7	100.(100.)	82.7	75 - 125
Cobalt	ug/L	5.00	96.2	100.(100.)	96.2	75 - 125
Chromium	ug/L	5.00	104.	102.(100.)	102.	75 - 125
Mercury	ug/L	5.00	18.1	20.0(20.0)	90.6	75 - 125
Selenium	ug/L	5.00	88.4	100.(100.)	88.4	75 - 125
Vanadium	ug/L	5.00	108.	100.(100.)	108.	75 - 125
Manganese	ug/L	5.00	515.	490.(100.)	125.	75 - 125
Molybdenum	ug/L	5.00	148.	148(100.)	100.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.6	10.0	106.	90 - 110
Barium	ug/L	1.00	10.0	10.0	100.	90 - 110
Beryllium	ug/L	1.00	9.84	10.0	98.4	90 - 110
Cadmium	ug/L	1.00	9.99	10.0	99.9	90 - 110
Cobalt	ug/L	1.00	9.82	10.0	98.2	90 - 110
Chromium	ug/L	1.00	10.7	10.0	107.	90 - 110
Mercury	ug/L	1.00	1.99	2.00	99.6	90 - 110
Selenium	ug/L	1.00	9.22	10.0	92.2	90 - 110
Vanadium	ug/L	1.00	10.9	10.0	109.	90 - 110
Manganese	ug/L	1.00	9.53	10.0	95.3	90 - 110
Molybdenum	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.93	10.0	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.84	10.0	98.4	90 - 110

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Serial Dilution Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	69.1	64.5	6.89	0 - 10
Manganese	ug/L	25.0	384.	390.	1.58	0 - 10
Molybdenum	ug/L	25.0	50.8	48.0	5.77	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 051412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801217-007 Chromium	ug/L	05/15/2012 11:10	5.00	0.195	1.0	40.5

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.71	2.70	0.370	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.208	0.200	104	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	88.1	100.	88.1	85 - 115

Matrix Spike — Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	109.	103.(100.)	106.	75 - 125

Matrix Spike Duplicate — Lab ID = 801217-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	117.	103.(100.)	114	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.86	10.0	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.89	10.0	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.79	10.0	97.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.90	10.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.74	10.0	97.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	80 - 120

Serial Dilution — Lab ID = 801373-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	577.	580.	0.467	0 - 10

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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801217

CH2MHILL

CHAIN OF CUSTODY RECORD

4/24/2012 3:17:52 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/24/2012
COC Number: 6

Rec'd 4/24/12
s 801217

ALERT !!
Level III QC

	DATE	TIME	Matrix	Container:	250 ml Poly	2x250 ml Poly	500 ml Poly		Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	Field			
				Holding Time:	28	28	180			
					Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium			
1	MW-64BR-UPR-150-1	4/16/2012	15:35	Water	X		X		2	
2	MW-64BR-LWR-150-	4/19/2012	10:25	Water	X		X		2	
3	MW-124-186	4/23/2012	7:15	Water	X		X		2	
4	MW-33-040-186	4/23/2012	9:17	Water		X	X		3	pH=2 6020A
5	MW-33-150-186	4/23/2012	10:22	Water	X		X		2	
6	MW-33-210-186	4/23/2012	14:49	Water	X		X		2	
7	MW-46-175-186	4/23/2012	13:23	Water	X		X		2	
8	MW-85-186	4/24/2012	8:50	Water	X				1	
9	MW-86-186	4/24/2012	8:53	Water	X				1	
								TOTAL NUMBER OF CONTAINERS	17	

or Sample Conditions
See Form Attached

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		4-24-12 1520
Received by	B. Dayog	4-24-12 1520
Relinquished by	B. Dayog	4-24-12 2030
Received by	Linda	4/24/12 20:30

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
4/25/12	801216	7	2mL	9.5	11 Am	GW
4/25/12	801217-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
4/25/12	801218-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
4/25/12	801219-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					

GW 5/3/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801141	<1	<2	4-19-12	BE	STLC	NO
801162 (1,3-6)					xes	3010A
801163 (1-5)						
801164 (1-7)						
801157	<1	<2	4-23-12	BE	NO	NO ~~xes~~ BE 4-23-12
Total 801188		>2			xes	3010A xes 9:15AM
801186 (1-6)		<2				
801187 (1-7)						
801191	<1	<2	4-24-12	BE	NO	NO
801192	>1				xes	3010A
801199					xes	
801216	<1	>2	4-25-12	BE	xes	3010A xes ≈ 11:00
801218 (1-5)		<2				
801217 (1-7						
801219 (1,3-12)						
801220 (1-6, 8-11)						
801221 (1-8, 10)						
801222	>1	<2				
801225	<1				NO	NO
801226						
801224	>1				xes	3010A
801236	<1	>2	4-26-12	BE	NO	xes 7:45 AM
801239 (15)						
801238 (12)						
801240 (12)						
801241 (9)						
801249	<1	<2			xes	3010A
801250 (1-8)						
801251 (1-6, 8-10)						
801252 ~~801251~~ (1-8, 10)		BE 4-26-12				
BE 4-19-12 801245 (1-3)	<1	>2 ~~<2~~			NO	xes 11:15
801264 (1-7)	<1	<2	4-27-12	BE	xes	3010A
801265 (1-6)						
801266 (1,2-11)						
801267 (1-8)						
801276	>1	<2	4-30-12	BE	yes	3010A
801275	<1				NO	NO
801277						
801278						
801301	>1	<2			xes	3010A
801298 (1-6, 8-9)	<1					
801299 (1-3, 5-8)						
801300 (1,2-5)						
801303 (1-10)					NO	NO
801304 (1-10)						
801307	<1	<2				
801308	>1				yes	3010A
801309						
801252-11	<1					

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 80127

Date Delivered: 04/24/12 **Time:** 20:30 **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? ☑Yes ☐No ☐N/A
   Temperature (if yes)? 4.4 °C
7. Were samples received intact ☑Yes ☐No ☐N/A
   (i.e. broken bottles, leaks, air bubbles, etc..)?
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? ☑Yes ☐No ☐N/A
    Preserved (if yes) by: ☑Truesdail ☐Client
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? ☐Yes ☐No ☐N/A
    if not, notify Project Manager.
14. Have Project due dates been checked and accepted? ☑Yes ☐No ☐N/A
    Turn Around Time (TAT): ☐ RUSH ☑ Std
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: L. Shabunina

ALERT !! Level III QC

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

June 8, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-194, GROUNDWATER MONITORING PROJECT, TLI NO.: 801338

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-194 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, 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 on May 1, 2012, 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.

Per Mr. Shawn Duffy's request, the pH analysis was cancelled.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy.

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

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 424973.01.DM

Laboratory No.: 801338
Date: June 8, 2012
Collected: May 1, 2012
Received: May 1, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / George Wahba
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

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www.truesdail.com

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: 424973.01.DM
P.O. Number: 424973.01.DM
Release Number:

Laboratory No. 801338

Printed 6/8/2012

Samples Received on 5/1/2012 8:40:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-194	801338-001	05/01/2012 14:45	Water
TW-03D-194	801338-002	05/01/2012 14:45	Water

Specific Conductivity - EPA 120.1

Batch 05EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801338-001 Specific Conductivity	umhos/cm	05/04/2012	1.00	0.0950	2.00	5040
801338-002 Specific Conductivity	umhos/cm	05/04/2012	1.00	0.0950	2.00	8470

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7780	7770	0.129	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	700.	706	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	978	998	98.0	90 - 110

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Chrome VI by EPA 218.6

Batch 05CrH12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801338-001 Chromium, Hexavalent	ug/L	05/02/2012 15:46	1.00	0.0260	0.20	6.9

Method Blank

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

Duplicate — Lab ID = 801252-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.90	2.91	0.417	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	98.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.08	5.00	102.	90 - 110

Matrix Spike — Lab ID = 801252-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.12	7.04(5.00)	102.	90 - 110

Matrix Spike — Lab ID = 801252-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.86	7.91(5.00)	99.0	90 - 110

Matrix Spike — Lab ID = 801252-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.13	8.23(5.00)	98.1	90 - 110

Matrix Spike — Lab ID = 801252-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.12	8.20(5.00)	98.3	90 - 110

Matrix Spike — Lab ID = 801252-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.01	8.75(5.00)	105.	90 - 110

Matrix Spike — Lab ID = 801252-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.6	15.3(10.0)	102.	90 - 110

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Matrix Spike — Lab ID = 801252-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.04	8.15(5.00)	97.8	90 - 110

Matrix Spike — Lab ID = 801252-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.00(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 801252-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.8	18.8(10.0)	90.2	90 - 110

Matrix Spike — Lab ID = 801320-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	9.77(5.00)	110.	90 - 110

Matrix Spike — Lab ID = 801320-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.9	17.2(10.0)	107.	90 - 110

Matrix Spike — Lab ID = 801321-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.07	1.00(1.00)	107.	90 - 110

Matrix Spike — Lab ID = 801338-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.8	16.9(10.0)	98.9	90 - 110

Matrix Spike — Lab ID = 801339-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.12	1.13(1.00)	99.2	90 - 110

Matrix Spike — Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1790	1780(1000)	102.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.06	5.00	101.	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

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MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

Chromium, Hexavalent by SM 3500-Cr B Batch 05CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801338-002 Chromium, Hexavalent	ug/L	05/09/2012 16:33	26.2	39.3	262	951.

Method Blank

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

Duplicate — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	951.	951	0.0105	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	98.3	100.	98.3	90 - 110

Matrix Spike — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	3660	3570(2620)	103.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	62.0	60.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101.	90 - 110

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Total Dissolved Solids by SM 2540 C

Batch 05TDS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801338-001 Total Dissolved Solids	mg/L	05/04/2012	1.00	0.400	125	2960
801338-002 Total Dissolved Solids	mg/L	05/04/2012	1.00	0.400	250.	5230

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate — Lab ID = 801373-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4640	4420	4.86	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	490.	500.	98.0	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.

Metals by EPA 200.8, Dissolved

Batch 060512B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801338-001 Chromium	ug/L	06/06/2012 14:19	5.00	0.195	1.0	7.7
801338-002 Chromium	ug/L	06/06/2012 14:26	5.00	0.195	1.0	990.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800964-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	6.56	6.42	2.17	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.159	0.200	79.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.4	100.	97.4	85 - 115

Matrix Spike — Lab ID = 800964-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	106.(100.)	102.	75 - 125

Matrix Spike Duplicate — Lab ID = 800964-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	109.	106.(100.)	102.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.70	10.0	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.91	10.0	99.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.88	10.0	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.90	10.0	99.0	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.71	10.0	97.1	80 - 120

Serial Dilution — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	988.	990.	0.232	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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E2 SC

Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12D
Date Analyzed: 5/9/12

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	67.7812	67.7816	67.7815	0.0001	No	0.0003	3.0	25.0	ND	1
801338-1	20	51.4877	51.5469	51.5469	0.0000	No	0.0592	2960.0	125.0	2960.0	1
801338-2	10	51.4257	51.4781	51.478	0.0001	No	0.0523	5230.0	250.0	5230.0	1
801339-1	10	49.2776	49.3233	49.3233	0.0000	No	0.0457	4570.0	250.0	4570.0	1
801339-2	10	49.6827	49.7304	49.7302	0.0002	No	0.0475	4750.0	250.0	4750.0	1
801367-1	100	68.5128	68.5391	68.5388	0.0003	No	0.0260	260.0	25.0	260.0	1
801373-1	10	51.1901	51.2339	51.2335	0.0004	No	0.0434	4340.0	250.0	4340.0	1
801373-2	10	48.1840	48.2281	48.2277	0.0004	No	0.0437	4370.0	250.0	4370.0	1
801373-3	10	48.0115	48.0559	48.0557	0.0002	No	0.0442	4420.0	250.0	4420.0	1
801421-2	200	108.5309	108.5487	108.5487	0.0000	No	0.0178	89.0	12.5	89.0	1
801421-4	100	67.0572	67.0705	67.0701	0.0004	No	0.0129	129.0	25.0	129.0	1
801373-3D	10	49.0186	49.0653	49.065	0.0003	No	0.0464	4640.0	250.0	4640.0	1
LCS	100	108.5868	108.6359	108.6358	0.0001	No	0.0490	490.0	25.0	490.0	1
801432	495	167.3462	167.3489	167.3485	0.0004	No	0.0023	4.6	5.1	ND	1
801428-17	50	67.2132	67.2502	67.2498	0.0004	No	0.0366	732.0	50.0	732.0	1
QC1304	100	67.1053	67.1389	67.1389	0.0000	No	0.0336	336.0	25.0	336.0	1
QC	100	74.7344	74.7688	74.7687	0.0001	No	0.0343	343.0	25.0	343.0	1
QC	100	73.1398	73.1732	73.1728	0.0004	No	0.0330	330.0	25.0	330.0	1
PE1304	100	74.7105	74.744	74.744	0.0000	No	0.0335	335.0	25.0	335.0	1
PE	100	76.5483	76.5822	76.5819	0.0003	No	0.0336	336.0	25.0	336.0	1
PE	100	78.4005	78.4347	78.4347	0.0000	No	0.0342	342.0	25.0	342.0	1

Calculation as follows:

Filterable residue (TDS), mg/L = $\left(\frac{A-B}{C}\right) x\, 10^6$

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.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	490	500	98.0%	90-110%	Yes
LCSD					

LCS Recovery

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

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?
801373-3	0.0442	0.0464	2.4%	≤5%	Yes

Duplicate Determination Difference

$\%\ Difference = \frac{|A \text{ or } B - C|}{C} x\, 100$

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

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Jenny T.
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12D
Date Analyzed: 5/9/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801338-1	5110	0.58	3321.5	0.89
801338-2	8590	0.61	5583.5	0.94
801339-1	7590	0.60	4933.5	0.93
801339-2	7920	0.60	5148	0.92
801367-1	401	0.65	260.65	1.00
801373-1	7660	0.57	4979	0.87
801373-2	7760	0.56	5044	0.87
801373-3	7740	0.57	5031	0.88
801421-2	154	0.58	100.1	0.89
801421-4	205	0.63	133.25	0.97
801373-3D	7740	0.60	5031	0.92
LCS				
801432	9.21	ND	5.9865	ND
801428-17	1292	0.57	839.8	0.87
QC1304	586	0.57	380.9	0.88
QC	586	0.59	380.9	0.90
QC	586	0.56	380.9	0.87
PE1304	618	0.54	401.7	0.83
PE	618	0.54	401.7	0.84
PE	618	0.55	401.7	0.85

TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714)730-6239 FAX: (714) 730-6462
www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-194]

801338

COC Number

TURNAROUND TIME 10 Days

DATE 05/01/12 PAGE 1 OF 1

COMPANY CH2M HILL /E2

PROJECT NAME PG&E Topock IM3Plant-EW

PHONE 530-229-3303 FAX 530-339-3303

ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612

P.O. NUMBER 424973.01.DM

SAMPLERS (SIGNATURE 1445 C. Knight

Rec'd 05/01/12
S 801338

	SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)									NUMBER OF CONTAINERS	COMMENTS
-1	PE-01-194	05/01/12	14:45	Ground water	X		X	X	X									4	pH=7 (200.7)
-2	TW-03D-194	05/01/12	14:45	Ground water	X	X	X	X										4	
																		8	TOTAL NUMBER OF CONTAINERS

For Sample Conditions
See Form Attached

ALERT !!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/ Agency	Date/ Time
(Relinquished) C. Knight	C. Knight	CH2M HILL	5-1-12 15:38
(Received) B. Dayag	B. DAYAG	TLI	5-1-12 1538
(Relinquished) B. Dayag	B. DAYAG	TLI	5-1-12 2040
(Received) Linda	Shabunina	TLI	5/1/12 20:40
(Relinquished)			
(Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 3.0 °C

CUSTODY SEALED YES ☐ NO ☑

SPECIAL REQUIREMENTS:

039

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
5/2/12	801338-1	7	2 mL	9.5	11 Am	
↓	↓ -2	↓	↓	↓	11:10 Am	↓
5/2/12	801339-1	7	2 mL	9.5	11:30 Am	
↓	↓ -2	↓	↓	↓	11:35 Am	↓

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801312(1-2,4)	<1	>2	4-30-12	BE	NO	xes 15:45
801320(1,2)	<1	<2	5-2-12	BE	xes	3 o A
801321(1-3, 5-8)	↓	↓	↓	↓	↓	↓
801329(1-10)		↓			NO	NO
801330	↓	>2			NO	xes 7:45 AM
801334	>1	<2			xes	3 o A
801338(1-2)	<1	>2			↓	↓
801339(1-2)	↓	<2				
801339(12)		>2				
801340(1-22)	↓	<2			↓	↓
801344(1-69)	<1	<2			NO	NO
801345(1-10)	↓	↓	↓	↓	↓	↓
801346(1-18)		>2				xes 14:00
801347(1-18)		>2				↓ ↓
801348(1-94)		<2				NO
801349(1-33)		>2				xes 14:00
801350(1-33)		>2				↓ ↓
801341(1-2)	↓	<2			↓	NO
801351	>1	↓			xes	3 o A
801358(7-9)	<1	>2			NO	xes 15:00
801358	>1	↓			xes	3 o A xes
801373(1-3)	>1	>2	5-3-12	BE	yes	3 o A
801366(10-12)	<1	>2			NO	xes 7:30
801368	<1	<2			NO	NO
801371(1-2)	↓	↓	↓	↓	↓	↓
801370-4	>1	↓	↓	↓	xes	3 o A
801394(1-3)	<1	>2	5-4-12	BE	NO	xes
801330	<1	<2	5-7-12	BE	NO	NO
801412	↓	↓	↓	↓	↓	↓
801421(1,24)	<1	>2	5-8-12	BE	NO	xes 9:00 AM
801428(17,24)	<1	↓	↓	↓	↓	↓
801427	↓	<2	↓	↓	↓	NO
801426	↓	↓	↓	↓	↓	↓
801437(1-2)	↓	>2	↓	↓	↓	xes 15:00
801432	↓	↓	↓	↓	↓	↓
801433-8	↓	↓	↓	↓	↓	↓
~~801445~~ 5-9-12 BE	~~>1~~	~~>2~~	~~5-9-12~~	~~BE~~	~~yes~~	~~3 o A~~
~~801447~~ 5-9-12 BE	↓	↓				
801445	>1	<2	5-9-12	BE	xes	3 o A
801447	>1	↓	↓	↓	↓	↓
801446	<1	↓	↓	↓	NO	NO
801448	↓	↓	↓	↓	↓	↓
801449	↓	↓	↓	↓	↓	↓
801450	↓	↓	↓	↓	↓	↓
801460	>1	>2			xes	3 o A yes 15:00
801461	<1	>2	↓	↓	xes	3 o A ↓
801471	<1	>2	5-10-12	BE	NO	xes 8:30
801472(10-12)	↓	↓	↓	↓	↓	↓
801462(1-19)	↓	<2	↓	↓	xes	3 o A

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801338

Date Delivered: 05/01/12 **Time:** 20:40 **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 °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

ALERT !! Level III QC

15. **Sample Matrix:** ☐Liquid ☐Drinking Water ☑Ground Water ☐Waste Water ☐Sludge ☐Soil ☐Wipe ☐Paint ☐Solid ☐Other_____

16. Comments: _____

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Linda Shakespeare

TRUESDAIL LABORATORIES, INC.

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Established 1931

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www.truesdail.com

June 14, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801340

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 May 1, 2012, 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.

Due to the discrepancy between the Total Dissolved Chromium (1.8 ug/L) and Hexavalent Chromium (0.56 ug/L) results for sample MW-21-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were both 2.1 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of 2.1 ug/L. The original results were reported.

Due to the discrepancy between the Total Dissolved Chromium (3.0 ug/L) and Hexavalent Chromium (2.2 ug/L) results for sample MW-41D-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were 3.2 ug/L and 4.0 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 3.6 ug/L. The original results were reported.

Due to the discrepancy between the Total Dissolved Chromium (8.2 ug/L) and Hexavalent Chromium (6.0 ug/L) results for sample MW-23-080-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were 9.2 ug/L and 8.4 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 9.0 ug/L. The original results were reported.

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

Laboratory No.: 801340
Date Received: May 1, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801340-001	MW-16-186	E218.6	FLDFLT	4/24/2012	15:56	Chromium, hexavalent	10.0	ug/L	0.20
801340-001	MW-16-186	SW6020	FLDFLT	4/24/2012	15:56	Chromium	10.6	ug/L	1.0
801340-002	MW-127-186	E218.6	FLDFLT	4/25/2012	7:25	Chromium, hexavalent	14.6	ug/L	0.20
801340-002	MW-127-186	SW6020	FLDFLT	4/25/2012	7:25	Chromium	15.5	ug/L	1.0
801340-003	MW-17-186	E218.6	FLDFLT	4/25/2012	12:08	Chromium, hexavalent	13.3	ug/L	0.20
801340-003	MW-17-186	SW6020	FLDFLT	4/25/2012	12:08	Chromium	13.3	ug/L	1.0
801340-004	MW-47-055-186	E218.6	FLDFLT	4/25/2012	13:44	Chromium, hexavalent	16.5	ug/L	0.20
801340-004	MW-47-055-186	SW6020	FLDFLT	4/25/2012	13:44	Chromium	16.6	ug/L	1.0
801340-005	MW-47-115-186	E218.6	FLDFLT	4/25/2012	10:30	Chromium, hexavalent	22.7	ug/L	1.0
801340-005	MW-47-115-186	SW6020	FLDFLT	4/25/2012	10:30	Chromium	23.6	ug/L	1.0
801340-006	MW-48-186	E218.6	FLDFLT	4/25/2012	15:30	Chromium, hexavalent	ND	ug/L	1.0
801340-006	MW-48-186	SW6020	FLDFLT	4/25/2012	15:30	Chromium	ND	ug/L	1.0
801340-007	MW-50-095-186	E218.6	FLDFLT	4/25/2012	14:54	Chromium, hexavalent	14.7	ug/L	0.20
801340-007	MW-50-095-186	SW6020	FLDFLT	4/25/2012	14:54	Chromium	15.4	ug/L	1.0
801340-008	MW-21-186	E218.6	FLDFLT	4/26/2012	8:20	Chromium, hexavalent	0.56	ug/L	0.20
801340-008	MW-21-186	SW6020	FLDFLT	4/26/2012	8:20	Chromium	1.8	ug/L	1.0
801340-009	MW-35-060-186	E218.6	FLDFLT	4/26/2012	11:42	Chromium, hexavalent	32.6	ug/L	1.0
801340-009	MW-35-060-186	SW6020	FLDFLT	4/26/2012	11:42	Chromium	32.1	ug/L	1.0
801340-010	MW-35-135-186	E218.6	FLDFLT	4/26/2012	13:21	Chromium, hexavalent	28.6	ug/L	1.0
801340-010	MW-35-135-186	SW6020	FLDFLT	4/26/2012	13:21	Chromium	30.2	ug/L	1.0
801340-011	MW-41D-186	E218.6	FLDFLT	4/26/2012	10:42	Chromium, hexavalent	2.2	ug/L	1.0
801340-011	MW-41D-186	SW6020	FLDFLT	4/26/2012	10:42	Chromium	3.0	ug/L	1.0
801340-012	MW-63-065-186	E218.6	FLDFLT	4/26/2012	15:17	Chromium, hexavalent	0.76	ug/L	0.20
801340-012	MW-63-065-186	SW6020	FLDFLT	4/26/2012	15:17	Chromium	1.5	ug/L	1.0
801340-013	MW-122-186	E218.6	FLDFLT	4/30/2012	7:20	Chromium, hexavalent	29.9	ug/L	1.0
801340-013	MW-122-186	SW6020	FLDFLT	4/30/2012	7:20	Chromium	33.4	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801340-014	MW-23-060-186	E218.6	FLDFLT	4/30/2012	15:03	Chromium, hexavalent	29.7	ug/L	1.0
801340-014	MW-23-060-186	SW6020	FLDFLT	4/30/2012	15:03	Chromium	32.4	ug/L	1.0
801340-015	MW-23-080-186	E218.6	FLDFLT	4/30/2012	16:07	Chromium, hexavalent	6.0	ug/L	1.0
801340-015	MW-23-080-186	SW6020	FLDFLT	4/30/2012	16:07	Chromium	8.2	ug/L	1.0
801340-016	MW-33-090-186	E218.6	FLDFLT	4/30/2012	9:35	Chromium, hexavalent	16.4	ug/L	1.0
801340-016	MW-33-090-186	SW6020	FLDFLT	4/30/2012	9:35	Chromium	17.2	ug/L	1.0
801340-017	MW-57-185-186	E218.6	FLDFLT	4/30/2012	13:04	Chromium, hexavalent	7.1	ug/L	1.0
801340-017	MW-57-185-186	SW6020	FLDFLT	4/30/2012	13:04	Chromium	8.6	ug/L	1.0
801340-018	MW-121-186	SM3500-CrB	FLDFLT	5/1/2012	7:25	Chromium, hexavalent	368	ug/L	20.0
801340-018	MW-121-186	SW6020	FLDFLT	5/1/2012	7:25	Chromium	364	ug/L	1.0
801340-019	MW-19-186	SM3500-CrB	FLDFLT	5/1/2012	14:31	Chromium, hexavalent	363	ug/L	20.0
801340-019	MW-19-186	SW6020	FLDFLT	5/1/2012	14:31	Chromium	353	ug/L	1.0
801340-020	MW-65-160-186	E218.6	FLDFLT	5/1/2012	11:34	Chromium, hexavalent	51.0	ug/L	1.0
801340-020	MW-65-160-186	SW6020	FLDFLT	5/1/2012	11:34	Chromium	54.6	ug/L	1.0
801340-021	MW-70-105-186	E218.6	FLDFLT	5/1/2012	8:21	Chromium, hexavalent	76.3	ug/L	1.0
801340-021	MW-70-105-186	SW6020	FLDFLT	5/1/2012	8:21	Chromium	77.9	ug/L	1.0
801340-022	MW-72-080-186	E218.6	FLDFLT	5/1/2012	13:05	Chromium, hexavalent	87.6	ug/L	1.0
801340-022	MW-72-080-186	SW6020	FLDFLT	5/1/2012	13:05	Chromium	89.0	ug/L	1.0

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.

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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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801340

Printed 6/14/2012

Samples Received on 5/1/2012 8:40:00 PM

Field ID	Lab ID	Collected	Matrix
MW-16-186	801340-001	04/24/2012 15:56	Water
MW-127-186	801340-002	04/25/2012 07:25	Water
MW-17-186	801340-003	04/25/2012 12:08	Water
MW-47-055-186	801340-004	04/25/2012 13:44	Water
MW-47-115-186	801340-005	04/25/2012 10:30	Water
MW-48-186	801340-006	04/25/2012 15:30	Water
MW-50-095-186	801340-007	04/25/2012 14:54	Water
MW-21-186	801340-008	04/26/2012 08:20	Water
MW-35-060-186	801340-009	04/26/2012 11:42	Water
MW-35-135-186	801340-010	04/26/2012 13:21	Water
MW-41D-186	801340-011	04/26/2012 10:42	Water
MW-63-065-186	801340-012	04/26/2012 15:17	Water
MW-122-186	801340-013	04/30/2012 07:20	Water
MW-23-060-186	801340-014	04/30/2012 15:03	Water
MW-23-080-186	801340-015	04/30/2012 16:07	Water
MW-33-090-186	801340-016	04/30/2012 09:35	Water
MW-57-185-186	801340-017	04/30/2012 13:04	Water
MW-121-186	801340-018	05/01/2012 07:25	Water
MW-19-186	801340-019	05/01/2012 14:31	Water
MW-65-160-186	801340-020	05/01/2012 11:34	Water
MW-70-105-186	801340-021	05/01/2012 08:21	Water
MW-72-080-186	801340-022	05/01/2012 13:05	Water

Chrome VI by EPA 218.6 Batch 05CrH12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801340-013 Chromium, Hexavalent	ug/L	05/09/2012 12:16	5.00	0.125	1.0	29.9
801340-014 Chromium, Hexavalent	ug/L	05/09/2012 11:14	5.00	0.125	1.0	29.7
801340-015 Chromium, Hexavalent	ug/L	05/09/2012 12:48	5.00	0.125	1.0	6.0
801340-016 Chromium, Hexavalent	ug/L	05/09/2012 12:58	5.00	0.125	1.0	16.4
801340-017 Chromium, Hexavalent	ug/L	05/09/2012 15:13	5.00	0.125	1.0	7.1

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801340-020 Chromium, Hexavalent	ug/L	05/09/2012 15:24	5.00	0.125	1.0	51.0
801340-021 Chromium, Hexavalent	ug/L	05/09/2012 15:34	5.00	0.125	1.0	76.3
801340-022 Chromium, Hexavalent	ug/L	05/09/2012 15:44	5.00	0.125	1.0	87.6

Method Blank

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

Duplicate — Lab ID = 801340-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	29.5	29.7	0.571	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	97.1	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.83	5.00	96.6	90 - 110

Matrix Spike — Lab ID = 801340-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	77.8	79.9(50.0)	95.7	90 - 110

Matrix Spike — Lab ID = 801340-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	78.0	79.7(50.0)	96.7	90 - 110

Matrix Spike — Lab ID = 801340-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	30.1	31.0(25.0)	96.2	90 - 110

Matrix Spike — Lab ID = 801340-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	41.0	41.4(25.0)	98.4	90 - 110

Matrix Spike — Lab ID = 801340-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	31.4	32.1(25.0)	97.4	90 - 110

Matrix Spike — Lab ID = 801340-020

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	126.	126(75.0)	99.6	90 - 110

Matrix Spike — Lab ID = 801340-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	173.	176.(100.)	96.9	90 - 110

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Matrix Spike — Lab ID = 801340-022

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	184.	188.(100.)	96.5	90 - 110

Matrix Spike — Lab ID = 801461-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.943	1.06(1.00)	87.8	90 - 110

Matrix Spike — Lab ID = 801461-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.63	5.07(5.00)	91.1	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.66	10.0	96.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.69	10.0	96.9	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.71	10.0	97.1	95 - 105

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Chrome VI by EPA 218.6

Batch 05CrH12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801340-001 Chromium, Hexavalent	ug/L	05/08/2012 12:26	1.00	0.0250	0.20	10.0
801340-002 Chromium, Hexavalent	ug/L	05/08/2012 12:37	1.00	0.0250	0.20	14.6
801340-003 Chromium, Hexavalent	ug/L	05/08/2012 12:47	1.00	0.0250	0.20	13.3
801340-004 Chromium, Hexavalent	ug/L	05/08/2012 12:58	1.00	0.0250	0.20	16.5
801340-005 Chromium, Hexavalent	ug/L	05/08/2012 15:23	5.00	0.125	1.0	22.7
801340-006 Chromium, Hexavalent	ug/L	05/08/2012 17:18	5.00	0.125	1.0	ND
801340-007 Chromium, Hexavalent	ug/L	05/08/2012 15:44	1.00	0.0250	0.20	14.7
801340-008 Chromium, Hexavalent	ug/L	05/08/2012 15:54	1.00	0.0250	0.20	0.56
801340-009 Chromium, Hexavalent	ug/L	05/08/2012 19:03	5.00	0.125	1.0	32.6
801340-010 Chromium, Hexavalent	ug/L	05/08/2012 18:10	5.00	0.125	1.0	28.6
801340-011 Chromium, Hexavalent	ug/L	05/08/2012 21:31	5.00	0.125	1.0	2.2

Method Blank

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

Duplicate — Lab ID = 801321-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	14.0	14.0	0.0257	0 - 20

Duplicate — Lab ID = 801340-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.544	0.558	2.48	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.210	0.200	105.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.3	90 - 110

Matrix Spike — Lab ID = 801321-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.00(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 801321-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.15	9.18(5.00)	99.3	90 - 110

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Matrix Spike — Lab ID = 801321-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.74	8.66(5.00)	102.	90 - 110

Matrix Spike — Lab ID = 801321-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.81	1.82(1.00)	99.3	90 - 110

Matrix Spike — Lab ID = 801321-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.20	7.20(5.00)	100.	90 - 110

Matrix Spike — Lab ID = 801340-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	19.8	20.0(10.0)	98.5	90 - 110

Matrix Spike — Lab ID = 801340-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	29.2	29.6(15.0)	97.3	90 - 110

Matrix Spike — Lab ID = 801340-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	27.8	28.3(15.0)	96.9	90 - 110

Matrix Spike — Lab ID = 801340-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	35.7	36.5(20.0)	96.0	90 - 110

Matrix Spike — Lab ID = 801340-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	48.4	47.7(25.0)	103.	90 - 110

Matrix Spike — Lab ID = 801340-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.92	5.14(5.00)	95.6	90 - 110

Matrix Spike — Lab ID = 801340-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.900	1.00(1.00)	90.0	90 - 110

Matrix Spike — Lab ID = 801340-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	29.5	29.7(15.0)	98.4	90 - 110

Matrix Spike — Lab ID = 801340-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.53	1.56(1.00)	97.1	90 - 110

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Matrix Spike — Lab ID = 801340-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	79.4	82.6(50.0)	93.7	90 - 110

Matrix Spike — Lab ID = 801340-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	80.7	78.6(50.0)	104.	90 - 110

Matrix Spike — Lab ID = 801340-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.36	7.24(5.00)	102.	90 - 110

Matrix Spike — Lab ID = 801340-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.85	2.95(1.00)	90.2	90 - 110

Matrix Spike — Lab ID = 801340-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.59	1.70(1.00)	88.9	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.92	5.00	98.4	90 - 110

MRCVS - Primary

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

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.77	10.0	97.7	95 - 105

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Chrome VI by EPA 218.6

Batch 05CrH12L

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801340-012 Chromium, Hexavalent	ug/L	05/16/2012 16:46	1.00	0.0250	0.20	0.76

Method Blank

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

Duplicate — Lab ID = 801603-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.330	0.351	6.23	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.172	0.200	86.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.2	90 - 110

Matrix Spike — Lab ID = 801340-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.78	1.76(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 801603-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.34	1.35(1.00)	98.6	90 - 110

Matrix Spike — Lab ID = 801603-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.39	1.38(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 801603-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.69	1.68(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 801603-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.86	1.84(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 801604-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.55	8.59(5.00)	99.2	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 050712B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801340-021 Chromium	ug/L	05/07/2012 21:20	5.00	0.195	1.0	77.9
801340-022 Chromium	ug/L	05/07/2012 21:27	5.00	0.195	1.0	89.0

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 801320-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	1.20	1.43	17.7	0 - 20
Chromium	ug/L	5.00	4.86	5.41	10.7	0 - 20
Manganese	ug/L	5.00	1.91	1.83	4.17	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.177	0.200	88.5	70 - 130
Chromium	ug/L	1.00	0.222	0.200	111.	70 - 130
Manganese	ug/L	1.00	0.229	0.200	115.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	96.7	100.	96.7	85 - 115
Chromium	ug/L	5.00	98.2	100.	98.2	85 - 115
Manganese	ug/L	5.00	106	100.	106	85 - 115

Matrix Spike

Lab ID = 801320-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	113	101.(100.)	112.	75 - 125
Chromium	ug/L	5.00	95.4	105.(100.)	90.0	75 - 125
Manganese	ug/L	5.00	94.1	102.(100.)	92.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.84	10.0	98.4	90 - 110
Chromium	ug/L	1.00	9.86	10.0	98.6	90 - 110
Manganese	ug/L	1.00	10.5	10.0	105.	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 060112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801340-001 Chromium	ug/L	06/01/2012 18:17	5.00	0.195	1.0	10.6
801340-002 Chromium	ug/L	06/01/2012 19:08	5.00	0.195	1.0	15.5
801340-003 Chromium	ug/L	06/01/2012 19:15	5.00	0.195	1.0	13.3
801340-004 Chromium	ug/L	06/01/2012 19:22	5.00	0.195	1.0	16.6
801340-005 Chromium	ug/L	06/01/2012 19:30	5.00	0.195	1.0	23.6
801340-006 Chromium	ug/L	06/01/2012 19:37	5.00	0.195	1.0	ND
801340-007 Chromium	ug/L	06/01/2012 19:44	5.00	0.195	1.0	15.4
801340-008 Chromium	ug/L	06/01/2012 19:51	5.00	0.195	1.0	1.8
801340-009 Chromium	ug/L	06/01/2012 19:58	5.00	0.195	1.0	32.1
801340-010 Chromium	ug/L	06/01/2012 20:13	5.00	0.195	1.0	30.2
801340-011 Chromium	ug/L	06/01/2012 20:42	5.00	0.195	1.0	3.0
801340-012 Chromium	ug/L	06/01/2012 20:49	5.00	0.195	1.0	1.5
801340-013 Chromium	ug/L	06/01/2012 20:56	5.00	0.195	1.0	33.4
801340-014 Chromium	ug/L	06/01/2012 21:11	5.00	0.195	1.0	32.4
801340-015 Chromium	ug/L	06/01/2012 21:18	5.00	0.195	1.0	8.2
801340-016 Chromium	ug/L	06/01/2012 21:25	5.00	0.195	1.0	17.2
801340-017 Chromium	ug/L	06/01/2012 21:32	5.00	0.195	1.0	8.6
801340-018 Chromium	ug/L	06/01/2012 21:39	5.00	0.195	1.0	364.
801340-019 Chromium	ug/L	06/01/2012 21:47	5.00	0.195	1.0	353.
801340-020 Chromium	ug/L	06/01/2012 22:16	5.00	0.195	1.0	54.6

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801340-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	10.7	10.6	0.845	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.199	0.200	99.3	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.0	100.	99.0	85 - 115

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Matrix Spike — Lab ID = 801340-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	126.	111.(100.)	115.	75 - 125

Matrix Spike Duplicate — Lab ID = 801340-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	109.	111.(100.)	98.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.35	10.0	93.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.20	10.0	92.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.41	10.0	94.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.20	10.0	92.0	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.29	10.0	92.9	80 - 120

Serial Dilution — Lab ID = 801340-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	32.2	32.1	0.280	0 - 10

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Chromium, Hexavalent by SM 3500-Cr B Batch 05CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801340-018 Chromium, Hexavalent	ug/L	05/09/2012 16:34	2.00	3.00	20.0	368.
801340-019 Chromium, Hexavalent	ug/L	05/09/2012 16:35	2.00	3.00	20.0	363.

Method Blank

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

Duplicate — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	951.	951	0.0105	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	98.3	100.	98.3	90 - 110

Matrix Spike — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	3660	3570(2620)	103.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	62.0	60.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101.	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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801340

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/1/2012 3:44:25 PM Page 1 OF 3

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/1/2012
COC Number: 8

					Container:	250 ml Poly	250 ml Poly	2x250 ml Poly	500 ml Poly			
					Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
					Filtered:	Field	Field	Field	Field			
					Holding Time:	28	28	28	180			
		DATE	TIME	Matrix		Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
1	MW-16-186	4/24/2012	15:56	Water		X			X		2	
2	MW-127-186	4/25/2012	7:25	Water		X			X		2	pH=2
3	MW-17-186	4/25/2012	12:08	Water		X			X		2	
	MW-21-186-EB	4/25/2012	8:00	Water		X					1	Hold
4	MW-47-055-186	4/25/2012	13:44	Water		X			X		2	
5	MW-47-115-186	4/25/2012	10:30	Water		X			X		2	pH=2
6	MW-48-186	4/25/2012	15:30	Water		X			X		2	
7	MW-50-095-186	4/25/2012	14:54	Water		X			X		2	
	MW-88-186	4/25/2012	7:10	Water		X					1	Hold
	MW-89-186	4/25/2012	16:06	Water		X					1	Hold
	MW-90-186	4/25/2012	16:05	Water		X					1	Hold
	MW-91-186	4/25/2012	16:08	Water		X					1	Hold
8	MW-21-186	4/26/2012	8:20	Water				X	X		3	pH=2
9	MW-35-060-186	4/26/2012	11:42	Water		X			X		2	

* Where provided w/2 Cr6 bottles, please analyze 1 + hold 1

Rec'd 5/01/12
S 801340

For Sample Conditions See Form Attached

pH for 6020A

ALERT !! Level III QC

Signatures	Date/Time
Approved by	
Sampled by	
Relinquished by	5-1-12 1535
Received by B. Dayag	5-1-12 1555
Relinquished by B. Dayag	5-1-12 2040
Received by linda	5/1/12 2040

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:
April 9 to May 11, 2012

t = 3°C

Report Copy to
Shawn Duffy
(530) 229-3303

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801340

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/1/2012 3:44:26 PM Page 2 OF 3

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/1/2012
COC Number: 8

		DATE	TIME	Matrix	Container: 250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (E218.6) Field Filtered	Container: 250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (SM3500B) Field Filtered	Container: 2x250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (E218.6R) Field Filtered	Container: 500 ml Poly; Preservatives: HNO3, 4°C; Filtered: Field; Holding Time: 180; Metals (6020AFF) Field Filtered Chromium	Number of Containers	COMMENTS
10	MW-35-135-186	4/26/2012	13:21	Water	X			X	2	
11	MW-41D-186	4/26/2012	10:42	Water	X			X	2	pM=2
12	MW-63-065-186	4/26/2012	15:17	Water	X			X	2	
	MW-87-186	4/26/2012	15:55	Water	X				1	Hold
	MW-92-186	4/26/2012	15:55	Water	X				1	Hold
13	MW-122-186	4/30/2012	7:20	Water	X			X	2	
14	MW-23-060-186	4/30/2012	15:03	Water	X			X	2	
15	MW-23-080-186	4/30/2012	16:07	Water	X			X	2	
16	MW-33-090-186	4/30/2012	9:35	Water	X			X	2	pM=2
17	MW-57-185-186	4/30/2012	13:04	Water	X			X	2	
18	MW-121-186	5/1/2012	7:25	Water		X		X	2	
19	MW-19-186	5/1/2012	14:31	Water		X		X	2	
20	MW-65-160-186	5/1/2012	11:34	Water	X			X	2	
21	MW-70-105-186	5/1/2012	8:21	Water	X			X	2	

pH for 6020.7

ALERT II
Level III QC

	Signatures	Date/Time
Approved by		
Sampled by	B. Dayag	5-1-12 1555
Relinquished by		
Received by	B. Dayag	5-1-12 1555
Relinquished by	Lupa	5-1-12 2040
Received by		5/1/12 2040

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

08 01

801340

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/1/2012 3:44:26 PM Page 3 OF 3

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/1/2012
COC Number: 8

	DATE	TIME	Matrix	Container:	250 ml Poly	250 ml Poly	2x250 ml Poly	500 ml Poly		Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	Field	Field			
				Holding Time:	28	28	28	180			
					Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium			
2	MW-72-080-186	5/1/2012	13:05	Water	X			X		2	pH=2
	MW-93-186	5/1/2012	7:07	Water	X					1	Hold
	MW-94-186	5/1/2012	7:00	Water	X					1	Hold
	MW-95-186	5/1/2012	15:30	Water	X					1	Hold
									TOTAL NUMBER OF CONTAINERS	55	

pH for 6020A

ALERT !!
Level III QC

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		5-1-12 1515
Received by	B-Dayag	5-1-12 1555
Relinquished by	B-Dayag	2040
Received by	Linda	5/1/12 2040

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
5/1/12	80320-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
5/1/12	80321-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
5/2/12	80340-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
	-15					
	-16					
	-17					
	-18					
	-19					
	-20					

MW
GW 5/17/12
08/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801312(1-2,4)	<1	>2	4-30-12	BE	No	Yes 15:45
801320(1,2)	<1	<2	5-2-12	BE	Yes	3 to A
801321(1-3, 5-8)	↓	↓	↓	↓	↓	↓
801329(1-10)	↓	↓	↓	↓	No	No
801330	↓	>2	↓	↓	No	Yes 7:45 AM
801334	>1	<2	↓	↓	Yes	3 to A
801338(1-2)	<1	>2	↓	↓	↓	↓
801339(1-2)	↓	<2	↓	↓	↓	↓
801339(2)	↓	>2	↓	↓	↓	↓
801340(1-22)	↓	<2	↓	↓	↓	↓
801344(1-69)	<1	<2	↓	↓	NO	NO
801345(1-10)	↓	↓	↓	↓	↓	↓
801346(1-18)	↓	>2	↓	↓	↓	Yes 14:00
801347(1-18)	↓	>2	↓	↓	↓	↓ ↓
801348(1-94)	↓	<2	↓	↓	↓	No
801349(1-33)	↓	>2	↓	↓	↓	Yes 14:00
801350(1-33)	↓	>2	↓	↓	↓	↓ ↓
801341(1-2)	↓	<2	↓	↓	↓	No
801351	>1	↓	↓	↓	Yes	3 to A
801358(7-9)	<1	>2	↓	↓	No	Yes 15:00
801356	>1	↓	↓	↓	Yes	3 to A Yes ↓
801373(1-3)	>1	>2	5-3-12	BE	Yes	3 to A
801366(10-12)	<1	>2	↓	↓	No	Yes 7:30
801368	<1	<2	↓	↓	No	No
801371(1-2)	↓	↓	↓	↓	↓	↓
801370-4	>1	↓	↓	↓	Yes	3 to A
801394(1-3)	<1	>2	5-4-12	BE	No	Yes
801350	<1	<2	5-7-12	BE	No	No
801412	↓	↓	↓	↓	↓	↓
801421(17,24)	<1	>2	5-8-12	BE	No	Yes 9:00 AM
801428(17,24)	<1	↓	↓	↓	↓	↓
801427	↓	<2	↓	↓	↓	No
801426	↓	↓	↓	↓	↓	↓
801437(1-2)	↓	>2	↓	↓	↓	Yes 15:00
801432	↓	↓	↓	↓	↓	↓
801433-8	↓	↓	↓	↓	↓	↓
~~801445~~ 5-9-12 BE	~~>1~~	~~>2~~	~~5-9-12~~	~~BE~~	~~Yes~~	~~3 to A~~
~~801447~~ 5-9-12 BE	↓	↓				
801445	>1	<2	5-9-12	BE	Yes	3 to A
801447	>1	↓	↓	↓	↓	↓
801446	<1	↓	↓	↓	No	No
801448	↓	↓	↓	↓	↓	↓
801449	↓	↓	↓	↓	↓	↓
801450	↓	↓	↓	↓	↓	↓
801460	>1	>2	↓	↓	Yes	3 to A Yes 15:00
801461	<1	>2	↓	↓	Yes	3 to A ↓
801471	<1	>2	5-10-12	BE	No	Yes 8:30
801472(10-12)	↓	↓	↓	↓	↓	↓
801462(1-19)	↓	<2	↓	↓	Yes	3 to A

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801340

Date Delivered: 05/01/12 **Time:** 20:40 **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 °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 E.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

ALERT !! Level III QC

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: L. Shabenitsa

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

June 17, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801462

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 May 8, 2012, 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.

Due to the discrepancy between the Total Dissolved Chromium (1.4 ug/L) and Hexavalent Chromium (ND<1.0 ug/L) results for sample MW-71-035-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium and re-analysis results.

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

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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.: 801462
Date Received: May 8, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801462-001	MW-62-065-186	E218.6	FLDFLT	5/2/2012	15:12	Chromium, hexavalent	443	ug/L	5.0
801462-001	MW-62-065-186	SW6020	FLDFLT	5/2/2012	15:12	Chromium	433	ug/L	2.0
801462-002	MW-65-225-186	E218.6	FLDFLT	5/2/2012	7:48	Chromium, hexavalent	365	ug/L	5.0
801462-002	MW-65-225-186	SW6020	FLDFLT	5/2/2012	7:48	Chromium	387	ug/L	1.0
801462-003	MW-66-165-186	E218.6	FLDFLT	5/2/2012	13:10	Chromium, hexavalent	651	ug/L	10.0
801462-003	MW-66-165-186	SW6020	FLDFLT	5/2/2012	13:10	Chromium	682	ug/L	1.0
801462-004	MW-69-195-186	E218.6	FLDFLT	5/2/2012	10:40	Chromium, hexavalent	446	ug/L	5.0
801462-004	MW-69-195-186	SW6020	FLDFLT	5/2/2012	10:40	Chromium	488	ug/L	1.0
801462-005	MW-73-080-186	E218.6	FLDFLT	5/2/2012	8:26	Chromium, hexavalent	32.9	ug/L	1.0
801462-005	MW-73-080-186	SW6020	FLDFLT	5/2/2012	8:26	Chromium	38.0	ug/L	1.0
801462-006	MW-57-070-186	E218.6	FLDFLT	5/3/2012	8:33	Chromium, hexavalent	288	ug/L	5.0
801462-006	MW-57-070-186	SW6020	FLDFLT	5/3/2012	8:33	Chromium	314	ug/L	1.0
801462-007	MW-60-125-186	E218.6	FLDFLT	5/3/2012	11:17	Chromium, hexavalent	882	ug/L	10.0
801462-007	MW-60-125-186	SW6020	FLDFLT	5/3/2012	11:17	Chromium	936	ug/L	2.0
801462-008	MW-61-110-186	E218.6	FLDFLT	5/3/2012	9:43	Chromium, hexavalent	486	ug/L	10.0
801462-008	MW-61-110-186	SW6020	FLDFLT	5/3/2012	9:43	Chromium	578	ug/L	1.0
801462-009	MW-67-185-186	E218.6	FLDFLT	5/3/2012	14:31	Chromium, hexavalent	2180	ug/L	20.0
801462-009	MW-67-185-186	SW6020	FLDFLT	5/3/2012	14:31	Chromium	2230	ug/L	4.0
801462-010	MW-68-240-186	E218.6	FLDFLT	5/3/2012	13:29	Chromium, hexavalent	1820	ug/L	20.0
801462-010	MW-68-240-186	SW6020	FLDFLT	5/3/2012	13:29	Chromium	1900	ug/L	4.0
801462-011	MW-71-035-186	E218.6	FLDFLT	5/3/2012	15:20	Chromium, hexavalent	ND	ug/L	1.0
801462-011	MW-71-035-186	SW6020	FLDFLT	5/3/2012	15:20	Chromium	ND	ug/L	1.0
801462-012	MW-12-186	SM3500-CrB	FLDFLT	5/7/2012	13:27	Chromium, hexavalent	3330	ug/L	500
801462-012	MW-12-186	SW6020	FLDFLT	5/7/2012	13:27	Chromium	2880	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
801462-013	MW-20-070-186	SM3500-CrB	FLDFLT	5/7/2012	14:38	Chromium, hexavalent	3330	ug/L	500
801462-013	MW-20-070-186	SW6020	FLDFLT	5/7/2012	14:38	Chromium	3410	ug/L	5.0
801462-014	MW-26-186	SM3500-CrB	FLDFLT	5/7/2012	8:26	Chromium, hexavalent	1810	ug/L	500
801462-014	MW-26-186	SW6020	FLDFLT	5/7/2012	8:26	Chromium	1890	ug/L	5.0
801462-015	MW-67-225-186	E218.6	FLDFLT	5/7/2012	11:12	Chromium, hexavalent	3180	ug/L	40.0
801462-015	MW-67-225-186	SW6020	FLDFLT	5/7/2012	11:12	Chromium	3260	ug/L	4.0
801462-016	MW-67-260-186	E218.6	FLDFLT	5/7/2012	10:16	Chromium, hexavalent	2130	ug/L	20.0
801462-016	MW-67-260-186	SW6020	FLDFLT	5/7/2012	10:16	Chromium	2090	ug/L	4.0
801462-017	MW-20-100-186	SM3500-CrB	FLDFLT	5/8/2012	9:54	Chromium, hexavalent	4740	ug/L	500
801462-017	MW-20-100-186	SW6020	FLDFLT	5/8/2012	9:54	Chromium	5030	ug/L	20.0
801462-018	MW-51-186	SM3500-CrB	FLDFLT	5/8/2012	14:48	Chromium, hexavalent	4740	ug/L	500
801462-018	MW-51-186	SW6020	FLDFLT	5/8/2012	14:48	Chromium	5140	ug/L	10.0
801462-019	MW-59-100-186	E218.6	FLDFLT	5/8/2012	12:00	Chromium, hexavalent	4610	ug/L	40.0
801462-019	MW-59-100-186	SW6020	FLDFLT	5/8/2012	12:00	Chromium	4690	ug/L	20.0

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.

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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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801462

Printed 6/17/2012

Samples Received on 5/8/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-62-065-186	801462-001	05/02/2012 15:12	Water
MW-65-225-186	801462-002	05/02/2012 07:48	Water
MW-66-165-186	801462-003	05/02/2012 13:10	Water
MW-69-195-186	801462-004	05/02/2012 10:40	Water
MW-73-080-186	801462-005	05/02/2012 08:26	Water
MW-57-070-186	801462-006	05/03/2012 08:33	Water
MW-60-125-186	801462-007	05/03/2012 11:17	Water
MW-61-110-186	801462-008	05/03/2012 09:43	Water
MW-67-185-186	801462-009	05/03/2012 14:31	Water
MW-68-240-186	801462-010	05/03/2012 13:29	Water
MW-71-035-186	801462-011	05/03/2012 15:20	Water
MW-12-186	801462-012	05/07/2012 13:27	Water
MW-20-070-186	801462-013	05/07/2012 14:38	Water
MW-26-186	801462-014	05/07/2012 08:26	Water
MW-67-225-186	801462-015	05/07/2012 11:12	Water
MW-67-260-186	801462-016	05/07/2012 10:16	Water
MW-20-100-186	801462-017	05/08/2012 09:54	Water
MW-51-186	801462-018	05/08/2012 14:48	Water
MW-59-100-186	801462-019	05/08/2012 12:00	Water

Chrome VI by EPA 218.6 Batch 05CrH12N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801462-001 Chromium, Hexavalent	ug/L	05/18/2012 12:39	25.0	0.625	5.0	443.
801462-002 Chromium, Hexavalent	ug/L	05/18/2012 11:06	25.0	0.625	5.0	365.
801462-003 Chromium, Hexavalent	ug/L	05/18/2012 11:16	50.0	1.25	10.0	651.
801462-004 Chromium, Hexavalent	ug/L	05/18/2012 12:29	25.0	0.625	5.0	446.
801462-005 Chromium, Hexavalent	ug/L	05/18/2012 14:55	5.00	0.125	1.0	32.9
801462-006 Chromium, Hexavalent	ug/L	05/18/2012 13:11	25.0	0.625	5.0	288.
801462-007 Chromium, Hexavalent	ug/L	05/18/2012 13:21	50.0	1.25	10.0	882.

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801462-008 Chromium, Hexavalent	ug/L	05/18/2012 13:31	50.0	1.25	10.0	486.
801462-009 Chromium, Hexavalent	ug/L	05/18/2012 18:16	100	2.50	20.0	2180
801462-010 Chromium, Hexavalent	ug/L	05/18/2012 20:17	100	2.50	20.0	1820
801462-011 Chromium, Hexavalent	ug/L	05/18/2012 19:24	5.00	0.125	1.0	ND
801462-015 Chromium, Hexavalent	ug/L	05/18/2012 21:38	200	5.00	40.0	3180
801462-016 Chromium, Hexavalent	ug/L	05/18/2012 22:10	100	2.50	20.0	2130
801462-019 Chromium, Hexavalent	ug/L	05/18/2012 18:45	200	5.00	40.0	4610

Method Blank

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

Duplicate — Lab ID = 801462-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	32.7	32.9	0.473	0 - 20

Duplicate — Lab ID = 801526-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.291	0.282	3.18	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.171	0.200	85.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.78	5.00	95.6	90 - 110

Matrix Spike — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	931.	943(500.)	97.7	90 - 110

Matrix Spike — Lab ID = 801462-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	706.	740.(375)	91.0	90 - 110

Matrix Spike — Lab ID = 801462-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1390	1400(750.)	98.8	90 - 110

Matrix Spike — Lab ID = 801462-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	966.	946(500.)	104.	90 - 110

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Matrix Spike — Lab ID = 801462-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	81.4	82.9(50.0)	97.0	90 - 110

Matrix Spike — Lab ID = 801462-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	670.	663(375)	102.	90 - 110

Matrix Spike — Lab ID = 801462-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1840	1880(1000)	96.4	90 - 110

Matrix Spike — Lab ID = 801462-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1030	986(500.)	108.	90 - 110

Matrix Spike — Lab ID = 801462-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	100	4650	4680(2500)	98.7	90 - 110

Matrix Spike — Lab ID = 801462-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.582	1.00(1.00)	58.2	90 - 110

Matrix Spike — Lab ID = 801462-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.78	5.00(5.00)	95.7	90 - 110

Matrix Spike — Lab ID = 801462-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	200	7170	7180(4000)	99.7	90 - 110

Matrix Spike — Lab ID = 801462-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	100	4590	4630(2500)	98.2	90 - 110

Matrix Spike — Lab ID = 801462-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	200	9620	9610(5000)	100.	90 - 110

Matrix Spike — Lab ID = 801526-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.22	1.28(1.00)	94.3	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.82	5.00	96.4	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 060612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801462-001 Chromium	ug/L	06/07/2012 00:14	10.0	0.390	2.0	433.
801462-002 Chromium	ug/L	06/07/2012 01:40	5.00	0.195	1.0	387.
801462-003 Chromium	ug/L	06/07/2012 01:47	5.00	0.195	1.0	682.
801462-004 Chromium	ug/L	06/07/2012 01:55	5.00	0.195	1.0	488.
801462-005 Chromium	ug/L	06/07/2012 02:02	5.00	0.195	1.0	38.0
801462-006 Chromium	ug/L	06/07/2012 02:09	5.00	0.195	1.0	314.
801462-007 Chromium	ug/L	06/07/2012 02:16	10.0	0.390	2.0	936.
801462-008 Chromium	ug/L	06/07/2012 02:31	5.00	0.195	1.0	578.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	440.	433	1.63	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.213	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	919.	933(500.)	97.2	75 - 125

Matrix Spike Duplicate — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	927.	933(500.)	98.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.78	10.0	97.8	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.92	10.0	99.2	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.88	10.0	98.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.73	10.0	97.3	80 - 120

Serial Dilution — Lab ID = 801462-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	953.	936	1.77	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 060712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801462-009 Chromium	ug/L	06/07/2012 14:02	20.0	0.780	4.0	2230
801462-010 Chromium	ug/L	06/07/2012 14:10	20.0	0.780	4.0	1900
801462-012 Chromium	ug/L	06/07/2012 16:42	25.0	0.975	5.0	2880
801462-013 Chromium	ug/L	06/07/2012 16:49	25.0	0.975	5.0	3410
801462-014 Chromium	ug/L	06/07/2012 16:56	25.0	0.975	5.0	1890
801462-015 Chromium	ug/L	06/07/2012 14:53	20.0	0.780	4.0	3260
801462-016 Chromium	ug/L	06/07/2012 15:22	20.0	0.780	4.0	2090
801462-017 Chromium	ug/L	06/07/2012 15:44	100	3.90	20.0	5030
801462-018 Chromium	ug/L	06/07/2012 16:05	50.0	1.95	10.0	5140
801462-019 Chromium	ug/L	06/07/2012 16:13	100	3.90	20.0	4690

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	446	439	1.58	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.149	0.200	74.3	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.0	97.5	100.	97.5	85 - 115

Matrix Spike — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	924.	939(500.)	97.0	75 - 125

Matrix Spike Duplicate — Lab ID = 801462-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	936.	939(500.)	99.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.91	10.0	99.1	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.76	10.0	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.74	10.0	97.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.45	10.0	94.5	80 - 120

Serial Dilution — Lab ID = 801462-016

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	100	2100	2090	0.715	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 061212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801462-011 Chromium	ug/L	06/13/2012 05:29	5.00	0.195	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801990-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.197	0.200	98.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.0	100.	98.0	85 - 115

Matrix Spike — Lab ID = 801990-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.9	100.(100.)	98.9	75 - 125

Matrix Spike Duplicate — Lab ID = 801990-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.0	100.(100.)	99.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.88	10.0	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.51	10.0	95.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.87	10.0	98.7	90 - 110

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Chromium, Hexavalent by SM 3500-Cr B

Batch 05CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801462-012 Chromium, Hexavalent	ug/L	05/09/2012 16:36	50.0	75.0	500.	3330
801462-013 Chromium, Hexavalent	ug/L	05/09/2012 16:37	50.0	75.0	500.	3330
801462-014 Chromium, Hexavalent	ug/L	05/09/2012 16:38	50.0	75.0	500.	1810
801462-017 Chromium, Hexavalent	ug/L	05/09/2012 16:39	50.0	75.0	500.	4740
801462-018 Chromium, Hexavalent	ug/L	05/09/2012 16:44	50.0	75.0	500.	4740

Method Blank

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

Duplicate — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	951.	951	0.0105	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	98.3	100.	98.3	90 - 110

Matrix Spike — Lab ID = 801338-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	3660	3570(2620)	103.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	62.0	60.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101.	90 - 110

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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.

801462

CH2MHILL

CHAIN OF CUSTODY RECORD

5/8/2012 3:47:55 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/7/2012
COC Number: 12

	DATE	TIME	Matrix	Container:	250 ml Poly	250 ml Poly	500 ml Poly		Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	Field			
				Holding Time:	28	28	180			
					Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020AFF) Field Filtered Chromium			
1	MW-62-065-186	5/2/2012	15:12	Water	X		X		2	pH for 6020.7
2	MW-65-225-186	5/2/2012	7:48	Water	X		X		2	
3	MW-66-165-186	5/2/2012	13:10	Water	X		X		2	pH=2
4	MW-69-195-186	5/2/2012	10:40	Water	X		X		2	
5	MW-73-080-186	5/2/2012	8:26	Water	X		X		2	
	MW-96-186	5/2/2012	15:50	Water	X				1	Hold
	MW-97-186	5/2/2012	15:55	Water	X				1	Hold
	MW-100-186	5/3/2012	14:30	Water	X				1	Hold
	MW-101-186	5/3/2012	15:30	Water	X				1	Hold
6	MW-57-070-186	5/3/2012	8:33	Water	X		X		2	
7	MW-60-125-186	5/3/2012	11:17	Water	X		X		2	
8	MW-61-110-186	5/3/2012	9:43	Water	X		X		2	pH=2
9	MW-67-185-186	5/3/2012	14:31	Water	X		X		2	
10	MW-68-240-186	5/3/2012	13:29	Water	X		X		2	

For Sample Conditions
See Form Attached

ALERT !!
Level III QC

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		5-8-12 1550
Received by	B. Day 09	5-8-12 1550
Relinquished by	B. Day 09	5-8-12 2100
Received by	L. Shabunina	5/8/12 21:00

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

801462

CH2MHILL

CHAIN OF CUSTODY RECORD

5/8/2012 3:47:56 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/7/2012
COC Number: 12

Rec'd 05/08/12 801462

ALERT !! Level III QC

	Container:	250 ml Poly	250 ml Poly	500 ml Poly						
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C						
	Filtered:	Field	Field	Field						
	Holding Time:	28	28	180						
		Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020AFF) Field Filtered Chromium					Number of Containers	COMMENTS
										pH fo- 6020A
-11	MW-71-035-186	5/3/2012	15:20	Water	X		X		2	
-12	MW-12-186	5/7/2012	13:27	Water		X	X		2	
-13	MW-20-070-186	5/7/2012	14:38	Water		X	X		2	
-14	MW-26-186	5/7/2012	8:26	Water		X	X		2	pH=2
-15	MW-67-225-186	5/7/2012	11:12	Water	X		X		2	
-16	MW-67-260-186	5/7/2012	10:16	Water	X		X		2	
	MW-98-186	5/7/2012	15:15	Water	X				1	Hold
	MW-99-186	5/7/2012	15:18	Water	X				1	Hold
	MW-102-186	5/8/2012	15:45	Water	X				1	Hold
	MW-103-186	5/8/2012	14:30	Water	X				1	Hold
-17	MW-20-100-186	5/8/2012	9:54	Water		X	X		2	
-18	MW-51-186	5/8/2012	14:48	Water		X	X		2	pH=2
-19	MW-59-100-186	5/8/2012	12:00	Water	X		X		2	
								TOTAL NUMBER OF CONTAINERS	46	

	Signatures	Date/Time
Approved by		5-8-12
Sampled by		1550
Relinquished by		
Received by	B. Dayag	5-8-12 1550
Relinquished by	B. Dayag	5-8-12 2100
Received by	L. Shakeenina	5/8/12 21:00

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
MVG 5/2/12 5/2/12	801372-1	7	0.2 ~~0.5~~mL	9.5	23:00	MG
	-2		↓		23:05	
MVG 5/2/12	-3		2 ~~8~~mL		23:10	
	-4				23:15	
	-5				23:20	
5/3/12	801372-6	7	2mL	9.5	8:30 Am	
	-7				8:40 Am	
	-8				8:50 Am	
	-9				8:55 Am	
	-10				9:05 Am	
	-11				9:15 Am	
5/9/12	801461	7	2mL	9.5	9 Am	
5/9/12	801462-1	9.5	N/A	N/A	N/A	
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-15					
	-16					
	-19					

5/23/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801312 (1-2, 4)	<1	>2	4-30-12	BE	No	yes 15:45
801320 (1, 2)	<1	<2	5-2-12	BE	yes	3010A
801321 (1-3, 5-8)	↓	↓	↓	↓	↓	↓
801329 (1-10)	↓	↓	↓	↓	No	No
801330	↓	>2	↓	↓	No	yes 7:45 AM
801334	>1	<2	↓	↓	yes	3010A
801338 (1-2)	<1	>2	↓	↓	↓	↓
801339 (1-2)	↓	<2	↓	↓	↓	↓
801339 (2)	↓	>2	↓	↓	↓	↓
801340 (1-22)	↓	<2	↓	↓	↓	↓
801344 (1-69)	<1	<2	↓	↓	NO	NO
801345 (1-10)	↓	↓	↓	↓	↓	↓
801346 (1-18)	↓	>2	↓	↓	↓	yes 14:00
801347 (1-18)	↓	>2	↓	↓	↓	↓ ↓
801348 (1-94)	↓	<2	↓	↓	↓	NO
801349 (1-33)	↓	>2	↓	↓	↓	yes 14:00
801350 (1-33)	↓	>2	↓	↓	↓	↓ ↓
801341 (1-2)	↓	<2	↓	↓	↓	NO
801351	>1	↓	↓	↓	yes	3010A
801358 (7-9)	<1	>2	↓	↓	NO	yes 15:00
801356	>1	↓	↓	↓	yes	3010A yes ↓
801373 (1-3)	>1	>2	5-3-12	BE	yes	3010A
801366 (10-12)	<1	>2	↓	↓	NO	yes 7:30
801368	<1	<2	↓	↓	NO	NO
801371 (1-2)	↓	↓	↓	↓	↓	↓
801370-4	>1	↓	↓	↓	yes	3010A
801394 (1-3)	<1	>2	5-4-12	BE	NO	yes
801350	<1	<2	5-7-12	BE	No	NO
801412	↓	↓	↓	↓	↓	↓
801421 (1, 2, 4)	<1	>2	5-8-12	BE	No	yes 9:00 AM
801428 (17, 24)	<1	↓	↓	↓	↓	↓
801427	↓	<2	↓	↓	↓	NO
801426	↓	↓	↓	↓	↓	↓
801437 (1-2)	↓	>2	↓	↓	↓	yes 15:00
801432	↓	↓	↓	↓	↓	↓
801433-8	↓	↓	↓	↓	↓	↓
~~801445~~ 5-9-12 BE	~~>1~~	~~>2~~	~~5-9-12~~	~~BE~~	~~yes~~	~~3010A~~
~~801447~~ 5-9-12 BE	↓	>				
801445	>1	<2	5-9-12	BE	yes	3010A
801447	>1	↓	↓	↓	↓	↓
801446	<1	↓	↓	↓	No	NO
801448	↓	↓	↓	↓	↓	↓
801449	↓	↓	↓	↓	↓	↓
801450	↓	↓	↓	↓	↓	↓
801460	>1	>2	↓	↓	yes	3010A yes 15:00
801461	<1	>2	↓	↓	yes	3010A ↓
801471	<1	>2	5-10-12	BE	NO	yes 8:30
801472 (10-12)	↓	↓	↓	↓	↓	↓
801462 (1-19)	↓	<2	↓	↓	yes	3010A

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801462

Date Delivered: 05/08/12 **Time:** 21:00 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3 °C
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? ☒Yes ☐No ☐N/A
    Preserved (if yes) by: ☒**Truesdail** ☐Client
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? ☒Yes ☐No ☐N/A
    If not, notify Project Manager.
14. Have Project due dates been checked and accepted? ☒Yes ☐No ☐N/A
    Turn Around Time (TAT): ☐ **RUSH** ☒ Std
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: L. Shakemine

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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

July 9, 2012

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801605

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 May 15, 2012, 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.

Due to the discrepancy between the Total Dissolved Chromium (1.9 ug/L) and Hexavalent Chromium (ND<1.0 ug/L) results for sample MW-62-190-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium and re-analysis results.

Due to the discrepancy between the Total Dissolved Chromium (2.9 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample MW-74BR-240-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium and re-analysis results.

On July 9, 2012, Mr. Duffy requested that the sample I.D. for sample 801605-9 be changed from MW-74BR-240-186 to MW-74-240-186 and provided a revised chain-of-custody. The revised report pages are attached.

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

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

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

Laboratory No.: 801605
Date Received: May 15, 2012
Revision 1; July 9, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801605-001	MW-68BR-280-186	E218.6	FLDFLT	5/9/2012	13:54	Chromium, hexavalent	ND	ug/L	1.0
801605-001	MW-68BR-280-186	SW6020	FLDFLT	5/9/2012	13:54	Chromium	ND	ug/L	1.0
801605-002	MW-128-186	E218.6	FLDFLT	5/10/2012	8:00	Chromium, hexavalent	5560	ug/L	50.0
801605-002	MW-128-186	SW6020	FLDFLT	5/10/2012	8:00	Chromium	5720	ug/L	20.0
801605-003	MW-20-130-186	SM3500-CrB	FLDFLT	5/10/2012	12:29	Chromium, hexavalent	10900	ug/L	500
801605-003	MW-20-130-186	SW6020	FLDFLT	5/10/2012	12:29	Chromium	10800	ug/L	40.0
801605-004	MW-50-200-186	SM3500-CrB	FLDFLT	5/10/2012	10:30	Chromium, hexavalent	9370	ug/L	500
801605-004	MW-50-200-186	SW6020	FLDFLT	5/10/2012	10:30	Chromium	9190	ug/L	2.0
801605-005	MW-62-110-186	E218.6	FLDFLT	5/10/2012	13:10	Chromium, hexavalent	828	ug/L	10.0
801605-005	MW-62-110-186	SW6020	FLDFLT	5/10/2012	13:10	Chromium	941	ug/L	2.0
801605-006	MW-62-190-186	E218.6	FLDFLT	5/10/2012	13:18	Chromium, hexavalent	ND	ug/L	1.0
801605-006	MW-62-190-186	SW6020	FLDFLT	5/10/2012	13:18	Chromium	ND	ug/L	1.0
801605-007	MW-66-230-186	E218.6	FLDFLT	5/10/2012	8:51	Chromium, hexavalent	5880	ug/L	100
801605-007	MW-66-230-186	SW6020	FLDFLT	5/10/2012	8:51	Chromium	5900	ug/L	20.0
801605-008	MW-68-180-186	E218.6	FLDFLT	5/10/2012	14:30	Chromium, hexavalent	5970	ug/L	100
801605-008	MW-68-180-186	SW6020	FLDFLT	5/10/2012	14:30	Chromium	5990	ug/L	20.0
801605-009	MW-74-240-186	E218.6	FLDFLT	5/10/2012	14:20	Chromium, hexavalent	ND	ug/L	0.20
801605-009	MW-74-240-186	SW6020	FLDFLT	5/10/2012	14:20	Chromium	ND	ug/L	1.0
801605-010	MW-10-186	SM3500-CrB	FLDFLT	5/15/2012	14:28	Chromium, hexavalent	269	ug/L	50.0
801605-010	MW-10-186	SW6020	FLDFLT	5/15/2012	14:28	Chromium	278	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801605-011	MW-58BR-UPR-160-186	E218.6	FLDFLT	5/15/2012	10:40	Chromium, hexavalent	ND	ug/L	1.0
801605-011	MW-58BR-UPR-160-186	SW6020	FLDFLT	5/15/2012	10:40	Chromium	1.4	ug/L	1.0

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.

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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

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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801605

Printed 7/9/2012
Revised

Samples Received on 5/15/2012 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-68BR-280-186	801605-001	05/09/2012 13:54	Water
MW-128-186	801605-002	05/10/2012 08:00	Water
MW-20-130-186	801605-003	05/10/2012 12:29	Water
MW-50-200-186	801605-004	05/10/2012 10:30	Water
MW-62-110-186	801605-005	05/10/2012 13:10	Water
MW-62-190-186	801605-006	05/10/2012 13:18	Water
MW-66-230-186	801605-007	05/10/2012 08:51	Water
MW-68-180-186	801605-008	05/10/2012 14:30	Water
MW-74-240-186	801605-009	05/10/2012 14:20	Water
MW-10-186	801605-010	05/15/2012 14:28	Water
MW-58BR-UPR-160-'	801605-011	05/15/2012 10:40	Water

Chrome VI by EPA 218.6

Batch 05CrH12S

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801605-005 Chromium, Hexavalent	ug/L	05/25/2012 14:06	50.0	1.30	10.0	828.
801605-007 Chromium, Hexavalent	ug/L	05/25/2012 15:43	500	13.0	100.	5880
801605-008 Chromium, Hexavalent	ug/L	05/25/2012 15:53	500	13.0	100.	5970

Method Blank

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

Duplicate — Lab ID = 801605-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	829.	828	0.140	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.182	0.200	91.0	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.72	5.00	94.4	90 - 110

Matrix Spike — Lab ID = 801605-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	500	10500	9960(5000)	111.	90 - 110

Matrix Spike — Lab ID = 801605-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1800	1830(1000)	96.7	90 - 110

Matrix Spike — Lab ID = 801605-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	500	13000	13400(7500)	94.6	90 - 110

Matrix Spike — Lab ID = 801605-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	500	13100	13500(7500)	95.5	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.92	5.00	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.98	10.0	99.8	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.88	10.0	98.8	95 - 105

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Chrome VI by EPA 218.6 Batch 06CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801605-001 Chromium, Hexavalent	ug/L	06/01/2012 17:57	5.00	0.125	1.0	ND
801605-002 Chromium, Hexavalent	ug/L	06/01/2012 16:43	250	6.25	50.0	5560
801605-006 Chromium, Hexavalent	ug/L	06/01/2012 18:08	5.00	0.125	1.0	ND
801605-009 Chromium, Hexavalent	ug/L	06/01/2012 16:33	1.00	0.0250	0.20	ND

Method Blank

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

Duplicate — Lab ID = 801752-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.107	0.122	13.1	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.173	0.200	86.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 110

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.73	5.00(5.00)	94.6	90 - 110

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 801605-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	250	11600	11800(6250)	96.9	90 - 110

Matrix Spike — Lab ID = 801605-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 801605-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.71	5.00(5.00)	94.2	90 - 110

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Matrix Spike — Lab ID = 801605-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.936	1.02(1.00)	91.1	90 - 110

Matrix Spike — Lab ID = 801752-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.58	5.00(5.00)	91.6	90 - 110

Matrix Spike — Lab ID = 801752-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.796	1.00(1.00)	79.6	90 - 110

Matrix Spike — Lab ID = 801752-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.41	7.37(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 801752-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.12(1.00)	96.4	90 - 110

Matrix Spike — Lab ID = 801752-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	200	5360	5380(3000)	99.5	90 - 110

Matrix Spike — Lab ID = 801752-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	149.	149.(75.0)	100.0	90 - 110

Matrix Spike — Lab ID = 801752-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	200	5370	5460(3000)	97.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.7	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	9.76	10.0	97.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

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Chrome VI by EPA 218.6

Batch 06CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801605-011 Chromium, Hexavalent	ug/L	06/05/2012 14:47	5.00	0.125	1.0	ND

Method Blank

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

Duplicate — Lab ID = 801909-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	12.1	12.1	0.259	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.183	0.200	91.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	90 - 110

Matrix Spike — Lab ID = 801605-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.904	1.00(1.00)	90.4	90 - 110

Matrix Spike — Lab ID = 801605-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.63	5.00(5.00)	92.5	90 - 110

Matrix Spike — Lab ID = 801907-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.56	6.69(5.00)	97.4	90 - 110

Matrix Spike — Lab ID = 801908-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.28	9.45(5.00)	96.5	90 - 110

Matrix Spike — Lab ID = 801909-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.2	16.5(10.0)	97.0	90 - 110

Matrix Spike — Lab ID = 801909-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.989	1.02(1.00)	97.3	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 061112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801605-006 Chromium	ug/L	06/12/2012 01:59	5.00	0.195	1.0	ND
801605-009 Chromium	ug/L	06/12/2012 02:20	5.00	0.195	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.146	0.200	73.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	96.9	100.	96.9	85 - 115

Matrix Spike — Lab ID = 801340-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	103.(100.)	103.	75 - 125

Matrix Spike Duplicate — Lab ID = 801340-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	103.(100.)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.35	10.0	93.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.46	10.0	94.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.53	10.0	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.70	10.0	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.26	10.0	92.6	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 060712B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801605-001 Chromium	ug/L	06/07/2012 19:59	5.00	0.195	1.0	ND
801605-002 Chromium	ug/L	06/07/2012 20:49	100	3.90	20.0	5720
801605-003 Chromium	ug/L	06/07/2012 22:23	200	7.80	40.0	10800
801605-004 Chromium	ug/L	06/07/2012 22:31	100	3.90	20.0	9190
801605-005 Chromium	ug/L	06/07/2012 21:11	10.0	0.390	2.0	941.
801605-007 Chromium	ug/L	06/07/2012 21:25	100	3.90	20.0	5900
801605-008 Chromium	ug/L	06/07/2012 21:33	100	3.90	20.0	5990
801605-010 Chromium	ug/L	06/07/2012 21:47	5.00	0.195	1.0	278.
801605-011 Chromium	ug/L	06/07/2012 22:52	5.00	0.195	1.0	1.4

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.170	0.200	85.1	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.6	100.	94.6	85 - 115

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.0	100.(100.)	100.0	75 - 125

Matrix Spike Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.6	100.(100.)	99.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.44	10.0	94.4	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.06	10.0	90.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.54	10.0	95.4	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.15	10.0	91.5	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	8.97	10.0	89.7	80 - 120

Serial Dilution — Lab ID = 801605-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	861.	941	8.89	0 - 10

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Chromium, Hexavalent by SM 3500-Cr B Batch 05CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801605-003 Chromium, Hexavalent	ug/L	05/23/2012 17:18	50.0	75.0	500.	10900
801605-004 Chromium, Hexavalent	ug/L	05/23/2012 17:19	50.0	75.0	500.	9370
801605-010 Chromium, Hexavalent	ug/L	05/23/2012 17:20	5.00	7.50	50.0	269.

Method Blank

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

Duplicate — Lab ID = 801752-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	3210	3090	3.82	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	97.9	100.	97.9	90 - 110

Matrix Spike — Lab ID = 801752-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	8100	8090(5000)	100.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	59.6	60.0	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	59.6	60.0	99.3	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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801605

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/15/2012 3:35:48 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/15/2012
COC Number: 17

Please change the sample ID for MW-74BR-240-186 to MW-74-240-186. Shawn P. Duffy 7/9/2012

ALERT !!! Level III QC

		DATE	TIME	Matrix	Container: 250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (E218.6) Field Filtered	Container: 250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (SM3500B) Field Filtered	Container: 500 ml Poly; Preservatives: HNO3, 4°C; Filtered: Field; Holding Time: 180; Metals (6020A/FF) Field Filtered Chromium		Number of Containers	COMMENTS
	MW-104-186	5/9/2012	15:10	Water	X				1	Hold
-1	MW-68BR-280-186	5/9/2012	13:54	Water	X		X		2	pH=2
	MW-105-186	5/10/2012	15:05	Water	X				1	Hold
	MW-106-186	5/10/2012	15:00	Water	X				1	Hold
2	MW-128-186	5/10/2012	8:00	Water	X		X		2	
3	MW-20-130-186	5/10/2012	12:29	Water		X	X		2	
4	MW-50-200-186	5/10/2012	10:30	Water		X	X		2	
5	MW-62-110-186	5/10/2012	13:10	Water	X		X		2	
6	MW-62-190-186	5/10/2012	13:18	Water	X		X		2	pH=2
7	MW-66-230-186	5/10/2012	8:51	Water	X		X		2	
8	MW-68-180-186	5/10/2012	14:30	Water	X		X		2	
9 SPD	~~MW-74BR-240-186~~	5/10/2012	14:20	Water	X		X	MW-74-240-186 SPD	2	
10	MW-10-186	5/15/2012	14:28	Water		X	X		2	
11	MW-58BR-UPR-160-1	5/15/2012	10:40	Water	X		X		2	
									25	

Sample Conditions See Form Attached

Signatures	Date/Time
Approved by	5-15-12
Sampled by	1538
Relinquished by	5-15-12
Received by B. Cayer	1538
Relinquished by B. Cayer	5-15-12
Received by Linda, TLT	2030

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

05/16/2012 20:01 #411 P.002/005
TRUESDAIL LABORATORIES
14280

Subject: Sample ID change
From: "Shawn.Duffy@CH2M.com" <Shawn.Duffy@CH2M.com>
Date: Mon, 9 Jul 2012 15:21:49 -0400
To: Sean Condon <seanc@truesdail.com>
CC: "Erlene.Contreras@CH2M.com" <Erlene.Contreras@CH2M.com>, "Priya.Kumar@CH2M.com" <Priya.Kumar@CH2M.com>, "Aurora.Abbott@ch2m.com" <Aurora.Abbott@ch2m.com>

Hi Sean,

Can you please change the sample ID (as noted on the attached COC) and resend the sample report and EDD?

Shawn Duffy
Project Chemist
CH2M HILL
2525 Airpark Dr.
Redding, CA 96001
Office: (530) 229-3303
Home Office: (530) 243-1078
Fax: (530) 339-3303
Cell: (530) 941-9227

801605-COC-2012-GMP-186-Q2-Topock_7-9-2012_spd.pdf	**Content-Description:**	801605-COC-2012-GMP-186-Q2-Topock_7-9-2012_spd.pdf
	Content-Type:	application/pdf
	Content-Encoding:	base64

801605

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/15/2012 3:35:48 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/15/2012
COC Number: 17

				Container:	250 ml Poly	250 ml Poly	500 ml Poly			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	Field			
				Holding Time:	28	28	180			
		DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
1	MW-104-186	5/9/2012	15:10	Water	X				1	Hold
2	MW-68BR-280-186	5/9/2012	13:54	Water	X		X		2	pH=2
3	MW-105-186	5/10/2012	15:05	Water	X				1	Hold
4	MW-106-186	5/10/2012	15:00	Water	X				1	Hold
5	MW-128-186	5/10/2012	8:00	Water	X		X		2	
6	MW-20-130-186	5/10/2012	12:29	Water		X	X		2	
7	MW-50-200-186	5/10/2012	10:30	Water		X	X		2	
8	MW-62-110-186	5/10/2012	13:10	Water	X		X		2	
9	MW-62-190-186	5/10/2012	13:18	Water	X		X		2	pH=2
10	MW-66-230-186	5/10/2012	8:51	Water	X		X		2	6020A
11	MW-68-180-186	5/10/2012	14:30	Water	X		X		2	
12	MW-74BR-240-186	5/10/2012	14:20	Water	X		X		2	
13	MW-10-186	5/15/2012	14:28	Water		X	X		2	
14	MW-58BR-UPR-160-1	5/15/2012	10:40	Water	X		X		2	
									25	

ALERT !!
Level III QC

Sample Conditions
See Form Attached

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		5-15-12 1538
Received by	B. Dayes	5-15-12 1538
Relinquished by	B. Dayes	5-15-12 2030
Received by	Linda, TLI	5/15/12 20:30

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
5/16/12	80605-1	9.5	N/A	N/A	N/A	GW
	-2					
	-5					
	-6					
	-7					
	-8					
	-9					
	-11					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1497	<1	<2	5-10-12	BE	YES	3010A
801488	↓	>2	↓	↓	NO	YES 10:15
80 1500	>1	<2			YES	3010A
80 1503(1-10)	<1	<2			NO	NO
80 1504 (1-10)	↓	↓			↓	↓
80 1505 (1-10)						
80 1506 (1-143)	↓	↓	↓	↓	↓	↓
80 1508	<1	<2	5-11-12	BE	NO	NO
80 1513	>1	↓	↓	↓	YES	3010A
801525	<1				↓	↓
801527(1-151	↓	↓	↓	↓	NO	NO
80 1536(1-21)	<1	<2	5-14-12	BE	NO	NO
80 1537 (1-21)	↓	↓	↓	↓	↓	↓
80 1517						
80 1526(3-12)					YES	3010A
80 1543	<1	<2			NO	NO
80 1546(1-4	↓	↓			YES	3010A
80 1547					↓	↓
80 1548(1-3)		>2				YES 15:00
80 1554		<2			NO	NO
80 1555	↓	↓	↓	↓	↓	↓
80 1561(1-2,4)	<1	>2	5-15-12	BE	NO	YES 14:00
80 1582	↓	>2	↓	↓	↓	↓ 14:00
80 1578	>1	<2			YES	3010A
80 1580(1-37)	<1	>2			NO	YES 20:00
80 1581(1-104)	↓	<2	↓	↓	NO	NO
T 80 1603(1-4)	<1	<2	5-16-12	BE	YES	3010A
DIS 80 1603(1-4)	↓	↓	↓	↓	↓	↓
80 1605(1-11						
80 1604(93-8)		↓				
T 80 1606		>2			↓	↓
80 1591	↓	<2	↓	↓	NO	NO
801643	<1	<2	5-17-12	BE	NO	NO
801652(1-3, 5-8)	↓	↓	↓	↓	YES	3010A
801653(1,D)					↓	↓
801641(11-13)		↓			NO	NO
801646(1-33)		>2				YES 18:30
80 1647(1-15		↓				↓
80 1647(1-54)						19:00
801649(1-54)						↓
801669 (1-9)						
801675(1-182)						NO
801676(1-10)						↓
801677(1-10)	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 120605

Date Delivered: 05/15/12 **Time:** 2015 **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

ALERT !! Level III QC

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: Truesdail

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

June 25, 2012

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801752

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 May 22, 2012, 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.

Due to the discrepancy between the Total Dissolved Chromium (7.4 ug/L) and Hexavalent Chromium (2.4 ug/L) results for sample MW-58BR-LWR-160-186, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were 5.8 ug/L and 3.9 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 5.2 ug/L. After discussing the results with Mr. Duffy, the original results were reported.

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.

Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

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

Laboratory No.: 801752
Date Received: May 22, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801752-001	MW-24BR-186	E218.6	FLDFLT	5/16/2012	12:19	Chromium, hexavalent	ND	ug/L	1.0
801752-001	MW-24BR-186	SW6020	FLDFLT	5/16/2012	12:19	Chromium	ND	ug/L	1.0
801752-002	MW-31-060-186	SM3500-CrB	FLDFLT	5/16/2012	9:18	Chromium, hexavalent	304	ug/L	50.0
801752-002	MW-31-060-186	SW6020	FLDFLT	5/16/2012	9:18	Chromium	272	ug/L	1.0
801752-003	MW-58BR-LWR-160-1	E218.6	FLDFLT	5/16/2012	11:30	Chromium, hexavalent	2.4	ug/L	1.0
801752-003	MW-58BR-LWR-160-1	SW6020	FLDFLT	5/16/2012	11:30	Chromium	7.4	ug/L	1.0
801752-004	TW-01-186	SM3500-CrB	FLDFLT	5/16/2012	11:16	Chromium, hexavalent	3090	ug/L	500
801752-004	TW-01-186	SW6020	FLDFLT	5/16/2012	11:16	Chromium	3400	ug/L	20.0
801752-005	MW-107-186	E218.6	FLDFLT	5/17/2012	15:25	Chromium, hexavalent	ND	ug/L	0.20
801752-006	MW-129-186	E218.6	FLDFLT	5/17/2012	7:15	Chromium, hexavalent	2380	ug/L	40.0
801752-006	MW-129-186	SW6020	FLDFLT	5/17/2012	7:15	Chromium	2550	ug/L	20.0
801752-007	MW-60BR-245-186	E218.6	FLDFLT	5/17/2012	9:06	Chromium, hexavalent	74.2	ug/L	1.0
801752-007	MW-60BR-245-186	SW6020	FLDFLT	5/17/2012	9:06	Chromium	77.0	ug/L	1.0
801752-008	MW-70BR-225-186	E218.6	FLDFLT	5/17/2012	13:34	Chromium, hexavalent	2460	ug/L	40.0
801752-008	MW-70BR-225-186	SW6020	FLDFLT	5/17/2012	13:34	Chromium	2460	ug/L	20.0

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.

004

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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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801752

Printed 6/22/2012

Samples Received on 5/22/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-24BR-186	801752-001	05/16/2012 12:19	Water
MW-31-060-186	801752-002	05/16/2012 09:18	Water
MW-58BR-LWR-160-	801752-003	05/16/2012 11:30	Water
TW-01-186	801752-004	05/16/2012 11:16	Water
MW-107-186	801752-005	05/17/2012 15:25	Water
MW-129-186	801752-006	05/17/2012 07:15	Water
MW-60BR-245-186	801752-007	05/17/2012 09:06	Water
MW-70BR-225-186	801752-008	05/17/2012 13:34	Water

Chrome VI by EPA 218.6

Batch 06CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801752-001 Chromium, Hexavalent	ug/L	06/01/2012 14:26	5.00	0.125	1.0	ND
801752-003 Chromium, Hexavalent	ug/L	06/01/2012 14:05	5.00	0.125	1.0	2.4
801752-005 Chromium, Hexavalent	ug/L	06/01/2012 12:32	1.00	0.0250	0.20	ND
801752-006 Chromium, Hexavalent	ug/L	06/01/2012 15:28	200	5.00	40.0	2380
801752-007 Chromium, Hexavalent	ug/L	06/01/2012 14:26	5.00	0.125	1.0	74.2
801752-008 Chromium, Hexavalent	ug/L	06/01/2012 15:39	200	5.00	40.0	2460

Method Blank

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

Duplicate — Lab ID = 801752-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.107	0.122	13.1	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.173	0.200	86.4	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 110
Matrix Spike						Lab ID = 801605-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.73	5.00(5.00)	94.6	90 - 110
Matrix Spike						Lab ID = 801605-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110
Matrix Spike						Lab ID = 801605-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	250	11600	11800(6250)	96.9	90 - 110
Matrix Spike						Lab ID = 801605-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110
Matrix Spike						Lab ID = 801605-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.71	5.00(5.00)	94.2	90 - 110
Matrix Spike						Lab ID = 801605-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.936	1.02(1.00)	91.1	90 - 110
Matrix Spike						Lab ID = 801752-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.58	5.00(5.00)	91.6	90 - 110
Matrix Spike						Lab ID = 801752-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.796	1.00(1.00)	79.6	90 - 110
Matrix Spike						Lab ID = 801752-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.41	7.37(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 801752-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.12(1.00)	96.4	90 - 110
Matrix Spike						Lab ID = 801752-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	200	5360	5380(3000)	99.5	90 - 110

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Matrix Spike — Lab ID = 801752-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	149.	149.(75.0)	100.0	90 - 110

Matrix Spike — Lab ID = 801752-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	200	5370	5460(3000)	97.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.7	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	9.76	10.0	97.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

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Metals by EPA 6020A, Dissolved

Batch 060712B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801752-001 Chromium	ug/L	06/07/2012 22:59	5.00	0.195	1.0	ND
801752-002 Chromium	ug/L	06/07/2012 23:07	5.00	0.195	1.0	272.
801752-003 Chromium	ug/L	06/07/2012 23:14	5.00	0.195	1.0	7.4
801752-006 Chromium	ug/L	06/07/2012 23:32	100	3.90	20.0	2550

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.170	0.200	85.1	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.6	100.	94.6	85 - 115

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.0	100.(100.)	100.0	75 - 125

Matrix Spike Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.6	100.(100.)	99.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.44	10.0	94.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.06	10.0	90.6	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 061412A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801752-007 Chromium	ug/L	06/14/2012 19:18	5.00	0.195	1.0	77.0

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.220	0.200	110.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.7	100.	94.7	90 - 110

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.(100.)	104.	75 - 125

Matrix Spike Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.(100.)	100.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.50	10.0	95.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.49	10.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.59	10.0	95.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110

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Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.76	10.0	97.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.23	10.0	92.3	80 - 120

Serial Dilution Lab ID = 801752-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	75.2	77.0	2.32	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 061112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801752-004 Chromium	ug/L	06/12/2012 07:31	100	3.90	20.0	3400

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.146	0.200	73.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.4	100.	98.4	90 - 110

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.(100.)	103.	75 - 125

Matrix Spike Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.(100.)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.35	10.0	93.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.46	10.0	94.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.53	10.0	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.70	10.0	97.0	90 - 110

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Serial Dilution Lab ID = 801752-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	500	3370	3400	0.856	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 061512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801752-008 Chromium	ug/L	06/15/2012 17:52	100	3.90	20.0	2460

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.140	0.200	70.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	93.8	100.	93.8	85 - 115

Matrix Spike — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.(100.)	103.	75 - 125

Matrix Spike Duplicate — Lab ID = 801605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.33	10.0	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.38	10.0	93.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.37	10.0	93.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.57	10.0	95.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.33	10.0	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.59	10.0	95.9	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.49	10.0	94.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.38	10.0	93.8	80 - 120

Serial Dilution Lab ID = 801752-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	500	2410	2460	2.18	0 - 10

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Chromium, Hexavalent by SM 3500-Cr B Batch 05CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801752-002 Chromium, Hexavalent	ug/L	05/23/2012 17:21	5.00	7.50	50.0	304.
801752-004 Chromium, Hexavalent	ug/L	05/23/2012 17:22	50.0	75.0	500.	3090

Method Blank

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

Duplicate — Lab ID = 801752-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	3210	3090	3.82	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	97.9	100.	97.9	90 - 110

Matrix Spike — Lab ID = 801752-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	8100	8090(5000)	100.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	59.6	60.0	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	59.6	60.0	99.3	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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801752

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/17/2012 4:18:35 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/22/2012
COC Number: 21

	DATE	TIME	Matrix	Container:	250 ml Poly	250 ml Poly	500 ml Poly		Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	Field			
				Holding Time:	28	28	180			
					Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020AFF) Field Filtered - Chromium			
1	MW-24BR-186	5/16/2012	12:19	Water	X		X		2	
2	MW-31-060-186	5/16/2012	9:18	Water		X	X		2	pH=2 6020A
3	MW-58BR-LWR-160-	5/16/2012	11:30	Water	X		X		2	
4	TW-01-186	5/16/2012	11:16	Water		X	X		2	
5	MW-107-186	5/17/2012	15:25	Water	X				1	
6	MW-129-186	5/17/2012	7:15	Water	X		X		2	
7	MW-60BR-245-186	5/17/2012	9:06	Water	X		X		2	pH=2 6020A
8	MW-70BR-225-186	5/17/2012	13:34	Water	X		X		2	
								TOTAL NUMBER OF CONTAINERS	15	

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

	Signatures	Date/Time
Approved by		5-22-12 1520
Sampled by		
Relinquished by		
Received by		5-22-12 1520
Relinquished by		5-22-12 2130
Received by	Linda, TLI	5/22/12 11:30

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
5/23/12	801747-1	9.5	N/A	N/A	N/A	QW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
5/23/12	801750	7	2 mL	9.5	10:30 AM	QW
5/23/12	801753-1	9.5	N/A	N/A	N/A	QW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
5/23/12	801752-1	9.5	N/A	N/A	N/A	QW
	-3					
	-5					
	-6					
	-7					
	-8					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1714	<1	<2	5-22-12	BE	NO	NO
80 1715 (DUP)					yes	30 to A
80 1725					NO	NO
80 1726						
80 1727						
80 1728						
80 1729	>1				yes	30 to A
80 1730						
80 1731						
D 80 1747 (1-8) (1-7) T	<1	<2	5-23-12	BE	yes	30 to A
80 1750		>2				yes 10:00
T D 80 1751 (1-3)						need F. /+
80 1752 (1-4, 6-7)		<2				
T D 80 1753 (1-14)						
80 1775 (1-11) T D	<1	<2	5-24-12	BE	yes	30 to A
80 1737 (1-3		>2			NO	yes 11:00 AM
80 1764 (10-12)						"
80 1767		<2				NO
80 1790 (1-10)						
80 1791 (1-10)						
80 1792 (1-10)						
80 1793 (1-12)		>2				yes 5-27-12 18
80 1715	<1	>2	3/25/12	[illegible]	—	yes 5:30 pm using HCl per client request
80 1747 (1-7)						
80 1799	<1	>2	5/29/12	BE	NO	yes 18:00
80 1818	<1	<2				NO
80 1826						
80 1827						
80 1839 (D)	<1	<2	5-30-12	BE	yes	30 to A
80 1840 (T)		>2				yes 14:00
80 1841 (1-2)	>1	<2				
80 1845 (1-12)	<1	>2			NO	yes 18:30
80 1848	>1	<2			yes	30 to A
80 1849 (1-12)	<1	>2			NO	yes 18:30
80 1860 (1-3)	<1	>2	5/31/12	KK	NO	yes @ 10pm BE 5-31-12
80 1871	>1	<2 ~~>2~~ BE	5.31.12	BE	yes	30 to A ~~yes 6:00~~
80 1883 (1-5)	<1	<2	6-1-12	BE	NO	NO
80 1892	<1	<2	6-5-12	BE	NO	NO
80 1893						
80 1898 (1-2, 4)		>2				yes 11:00
80 1910-6						
80 1907		<2			yes	30 to A
80 1908						
80 1909 (1-3, 5-7)						
80 1912 (1-10)					NO	NO
80 1913 (1-10						
80 1914	>1	<2			yes	30 to A
80 1915	<1				NO	NO
80 1917						

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801752

Date Delivered: 05/22/12 **Time:** 21:30 **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? ☒ Yes ☐ No ☐ N/A
   Temperature (if yes)? 4 °C
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? ☒ Yes ☐ No ☐ N/A
    Preserved (if yes) by: ☒ **Truesdail** ☐ Client
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? ☒ Yes ☐ No ☐ N/A
    If not, notify Project Manager.
14. Have Project due dates been checked and accepted? ☒ Yes ☐ No ☐ N/A
    Turn Around Time (TAT): ☐ **RUSH** ☒ Std
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: L. Chabaniny

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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

June 22, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-RMP-186, SURFACEWATER MONITORING PROJECT, TLI NO.: 801753

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-186 surfacewater-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 on May 22, 2012, 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.

Due to the early sampling time and late arrival of the samples, samples 801753-1 through 801753-9 and 801753-12 through 801753-14 for pH analysis by SM 4500-H B were analyzed just past the holding time. Mr. Shawn Duffy approved the analysis.

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

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Event 2012-RMP-186 Cr (VI) by EPA 218.6, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional buffer needed	Final pH	Comments
C-BNS-D-186	9.50	No			
C-I-3-D-186	9.50	No			
C-I-3-S-186	9.50	No			
C-R22A-D-186	9.50	No			
C-R22A-S-186	9.50	No			
C-R27-D-186	9.50	No			
C-R27-S-186	9.50	No			
C-TAZ-D-186	9.50	No			
C-TAZ-S-186	9.50	No			
R-19-186	9.50	No			
R-28-186	9.50	No			
R63-186	9.50	No			
SW1-186	9.50	No			
SW2-186	9.50	No			

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Event 2012-RMP-186 Cr by SW 6020, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional acid needed	Final pH	Comments
C-BNS-D-186	2.00	No			
C-I-3-D-186	2.00	No			
C-I-3-S-186	2.00	No			
C-R22A-D-186	2.00	No			
C-R22A-S-186	2.00	No			
C-R27-D-186	2.00	No			
C-R27-S-186	2.00	No			
C-TAZ-D-186	2.00	No			
C-TAZ-S-186	2.00	No			
R-19-186	2.00	No			
R-28-186	2.00	No			
R63-186	2.00	No			
SW1-186	2.00	No			
SW2-186	2.00	No			

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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

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

Laboratory No.: 801753
Date Received: May 22, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801753-001	C-BNS-D-186	E120.1	NONE	5/22/2012	12:50	EC	908	umhos/cm	2.00
801753-001	C-BNS-D-186	E218.6	FLDFLT	5/22/2012	12:50	Chromium, hexavalent	ND	ug/L	0.20
801753-001	C-BNS-D-186	E300	NONE	5/22/2012	12:50	Nitrate as N	ND	mg/L	0.500
801753-001	C-BNS-D-186	SM2320B	NONE	5/22/2012	12:50	Alkalinity	127	mg/L	5.00
801753-001	C-BNS-D-186	SM2320B	NONE	5/22/2012	12:50	Bicarbonate	127	mg/L	5.00
801753-001	C-BNS-D-186	SM2320B	NONE	5/22/2012	12:50	Carbonate	ND	mg/L	5.00
801753-001	C-BNS-D-186	SM2540D	NONE	5/22/2012	12:50	Total Suspended Solids	ND	mg/L	10.0
801753-001	C-BNS-D-186	SM4500HB	NONE	5/22/2012	12:50	PH	8.18 J	pH	4.00
801753-001	C-BNS-D-186	SW6010B	NONE	5/22/2012	12:50	Iron	ND	ug/L	20.0
801753-001	C-BNS-D-186	SW6010B	FLDFLT	5/22/2012	12:50	Iron	ND	ug/L	20.0
801753-001	C-BNS-D-186	SW6010B	FLDFLT	5/22/2012	12:50	Molybdenum	ND	ug/L	10.0
801753-001	C-BNS-D-186	SW6010B	FLDFLT	5/22/2012	12:50	Selenium	ND	ug/L	10.0
801753-001	C-BNS-D-186	SW6020	FLDFLT	5/22/2012	12:50	Arsenic	2.1	ug/L	1.0
801753-001	C-BNS-D-186	SW6020	FLDFLT	5/22/2012	12:50	Chromium	ND	ug/L	1.0
801753-001	C-BNS-D-186	SW6020	FLDFLT	5/22/2012	12:50	Manganese	0.70	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801753-002	C-I-3-D-186	E120.1	NONE	5/22/2012	11:14	EC	907	umhos/cm	2.00
801753-002	C-I-3-D-186	E218.6	FLDFLT	5/22/2012	11:14	Chromium, hexavalent	ND	ug/L	0.20
801753-002	C-I-3-D-186	E300	NONE	5/22/2012	11:14	Nitrate as N	ND	mg/L	0.500
801753-002	C-I-3-D-186	SM2320B	NONE	5/22/2012	11:14	Alkalinity	126	mg/L	5.00
801753-002	C-I-3-D-186	SM2320B	NONE	5/22/2012	11:14	Bicarbonate	126	mg/L	5.00
801753-002	C-I-3-D-186	SM2320B	NONE	5/22/2012	11:14	Carbonate	ND	mg/L	5.00
801753-002	C-I-3-D-186	SM2540D	NONE	5/22/2012	11:14	Total Suspended Solids	ND	mg/L	10.0
801753-002	C-I-3-D-186	SM4500HB	NONE	5/22/2012	11:14	PH	8.17 J	pH	4.00
801753-002	C-I-3-D-186	SW6010B	NONE	5/22/2012	11:14	Iron	ND	ug/L	20.0
801753-002	C-I-3-D-186	SW6010B	FLDFLT	5/22/2012	11:14	Iron	ND	ug/L	20.0
801753-002	C-I-3-D-186	SW6010B	FLDFLT	5/22/2012	11:14	Molybdenum	ND	ug/L	10.0
801753-002	C-I-3-D-186	SW6010B	FLDFLT	5/22/2012	11:14	Selenium	ND	ug/L	10.0
801753-002	C-I-3-D-186	SW6020	FLDFLT	5/22/2012	11:14	Arsenic	2.1	ug/L	1.0
801753-002	C-I-3-D-186	SW6020	FLDFLT	5/22/2012	11:14	Chromium	ND	ug/L	1.0
801753-002	C-I-3-D-186	SW6020	FLDFLT	5/22/2012	11:14	Manganese	0.62	ug/L	0.50
801753-003	C-I-3-S-186	E120.1	NONE	5/22/2012	11:27	EC	892	umhos/cm	2.00
801753-003	C-I-3-S-186	E218.6	FLDFLT	5/22/2012	11:27	Chromium, hexavalent	ND	ug/L	0.20
801753-003	C-I-3-S-186	E300	NONE	5/22/2012	11:27	Nitrate as N	ND	mg/L	0.500
801753-003	C-I-3-S-186	SM2320B	NONE	5/22/2012	11:27	Alkalinity	125	mg/L	5.00
801753-003	C-I-3-S-186	SM2320B	NONE	5/22/2012	11:27	Bicarbonate	125	mg/L	5.00
801753-003	C-I-3-S-186	SM2320B	NONE	5/22/2012	11:27	Carbonate	ND	mg/L	5.00
801753-003	C-I-3-S-186	SM2540D	NONE	5/22/2012	11:27	Total Suspended Solids	ND	mg/L	10.0
801753-003	C-I-3-S-186	SM4500HB	NONE	5/22/2012	11:27	PH	8.16 J	pH	4.00
801753-003	C-I-3-S-186	SW6010B	NONE	5/22/2012	11:27	Iron	ND	ug/L	20.0
801753-003	C-I-3-S-186	SW6010B	FLDFLT	5/22/2012	11:27	Iron	ND	ug/L	20.0
801753-003	C-I-3-S-186	SW6010B	FLDFLT	5/22/2012	11:27	Molybdenum	ND	ug/L	10.0
801753-003	C-I-3-S-186	SW6010B	FLDFLT	5/22/2012	11:27	Selenium	ND	ug/L	10.0
801753-003	C-I-3-S-186	SW6020	FLDFLT	5/22/2012	11:27	Arsenic	2.1	ug/L	1.0
801753-003	C-I-3-S-186	SW6020	FLDFLT	5/22/2012	11:27	Chromium	ND	ug/L	1.0
801753-003	C-I-3-S-186	SW6020	FLDFLT	5/22/2012	11:27	Manganese	0.65	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801753-004	C-R22A-D-186	E120.1	NONE	5/22/2012	12:17	EC	908	umhos/cm	2.00
801753-004	C-R22A-D-186	E218.6	FLDFLT	5/22/2012	12:17	Chromium, hexavalent	ND	ug/L	0.20
801753-004	C-R22A-D-186	E300	NONE	5/22/2012	12:17	Nitrate as N	ND	mg/L	0.500
801753-004	C-R22A-D-186	SM2320B	NONE	5/22/2012	12:17	Alkalinity	127	mg/L	5.00
801753-004	C-R22A-D-186	SM2320B	NONE	5/22/2012	12:17	Bicarbonate	127	mg/L	5.00
801753-004	C-R22A-D-186	SM2320B	NONE	5/22/2012	12:17	Carbonate	ND	mg/L	5.00
801753-004	C-R22A-D-186	SM2540D	NONE	5/22/2012	12:17	Total Suspended Solids	ND	mg/L	10.0
801753-004	C-R22A-D-186	SM4500HB	NONE	5/22/2012	12:17	PH	8.17 J	pH	4.00
801753-004	C-R22A-D-186	SW6010B	NONE	5/22/2012	12:17	Iron	ND	ug/L	20.0
801753-004	C-R22A-D-186	SW6010B	FLDFLT	5/22/2012	12:17	Iron	ND	ug/L	20.0
801753-004	C-R22A-D-186	SW6010B	FLDFLT	5/22/2012	12:17	Molybdenum	ND	ug/L	10.0
801753-004	C-R22A-D-186	SW6010B	FLDFLT	5/22/2012	12:17	Selenium	ND	ug/L	10.0
801753-004	C-R22A-D-186	SW6020	FLDFLT	5/22/2012	12:17	Arsenic	2.0	ug/L	1.0
801753-004	C-R22A-D-186	SW6020	FLDFLT	5/22/2012	12:17	Chromium	ND	ug/L	1.0
801753-004	C-R22A-D-186	SW6020	FLDFLT	5/22/2012	12:17	Manganese	0.72	ug/L	0.50
801753-005	C-R22A-S-186	E120.1	NONE	5/22/2012	12:29	EC	905	umhos/cm	2.00
801753-005	C-R22A-S-186	E218.6	FLDFLT	5/22/2012	12:29	Chromium, hexavalent	ND	ug/L	0.20
801753-005	C-R22A-S-186	E300	NONE	5/22/2012	12:29	Nitrate as N	ND	mg/L	0.500
801753-005	C-R22A-S-186	SM2320B	NONE	5/22/2012	12:29	Alkalinity	132	mg/L	5.00
801753-005	C-R22A-S-186	SM2320B	NONE	5/22/2012	12:29	Bicarbonate	132	mg/L	5.00
801753-005	C-R22A-S-186	SM2320B	NONE	5/22/2012	12:29	Carbonate	ND	mg/L	5.00
801753-005	C-R22A-S-186	SM2540D	NONE	5/22/2012	12:29	Total Suspended Solids	ND	mg/L	10.0
801753-005	C-R22A-S-186	SM4500HB	NONE	5/22/2012	12:29	PH	8.16 J	pH	4.00
801753-005	C-R22A-S-186	SW6010B	NONE	5/22/2012	12:29	Iron	20.7	ug/L	20.0
801753-005	C-R22A-S-186	SW6010B	FLDFLT	5/22/2012	12:29	Iron	ND	ug/L	20.0
801753-005	C-R22A-S-186	SW6010B	FLDFLT	5/22/2012	12:29	Molybdenum	ND	ug/L	10.0
801753-005	C-R22A-S-186	SW6010B	FLDFLT	5/22/2012	12:29	Selenium	ND	ug/L	10.0
801753-005	C-R22A-S-186	SW6020	FLDFLT	5/22/2012	12:29	Arsenic	2.0	ug/L	1.0
801753-005	C-R22A-S-186	SW6020	FLDFLT	5/22/2012	12:29	Chromium	ND	ug/L	1.0
801753-005	C-R22A-S-186	SW6020	FLDFLT	5/22/2012	12:29	Manganese	0.82	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801753-006	C-R27-D-186	E120.1	NONE	5/22/2012	13:12	EC	905	umhos/cm	2.00
801753-006	C-R27-D-186	E218.6	FLDFLT	5/22/2012	13:12	Chromium, hexavalent	ND	ug/L	0.20
801753-006	C-R27-D-186	E300	NONE	5/22/2012	13:12	Nitrate as N	ND	mg/L	0.500
801753-006	C-R27-D-186	SM2320B	NONE	5/22/2012	13:12	Alkalinity	112	mg/L	5.00
801753-006	C-R27-D-186	SM2320B	NONE	5/22/2012	13:12	Bicarbonate	112	mg/L	5.00
801753-006	C-R27-D-186	SM2320B	NONE	5/22/2012	13:12	Carbonate	ND	mg/L	5.00
801753-006	C-R27-D-186	SM2540D	NONE	5/22/2012	13:12	Total Suspended Solids	ND	mg/L	10.0
801753-006	C-R27-D-186	SM4500HB	NONE	5/22/2012	13:12	PH	8.17 J	pH	4.00
801753-006	C-R27-D-186	SW6010B	NONE	5/22/2012	13:12	Iron	ND	ug/L	20.0
801753-006	C-R27-D-186	SW6010B	FLDFLT	5/22/2012	13:12	Iron	ND	ug/L	20.0
801753-006	C-R27-D-186	SW6010B	FLDFLT	5/22/2012	13:12	Molybdenum	ND	ug/L	10.0
801753-006	C-R27-D-186	SW6010B	FLDFLT	5/22/2012	13:12	Selenium	ND	ug/L	10.0
801753-006	C-R27-D-186	SW6020	FLDFLT	5/22/2012	13:12	Arsenic	2.1	ug/L	1.0
801753-006	C-R27-D-186	SW6020	FLDFLT	5/22/2012	13:12	Chromium	ND	ug/L	1.0
801753-006	C-R27-D-186	SW6020	FLDFLT	5/22/2012	13:12	Manganese	0.73	ug/L	0.50
801753-007	C-R27-S-186	E120.1	NONE	5/22/2012	13:25	EC	907	umhos/cm	2.00
801753-007	C-R27-S-186	E218.6	FLDFLT	5/22/2012	13:25	Chromium, hexavalent	ND	ug/L	0.20
801753-007	C-R27-S-186	E300	NONE	5/22/2012	13:25	Nitrate as N	ND	mg/L	0.500
801753-007	C-R27-S-186	SM2320B	NONE	5/22/2012	13:25	Alkalinity	122	mg/L	5.00
801753-007	C-R27-S-186	SM2320B	NONE	5/22/2012	13:25	Bicarbonate	122	mg/L	5.00
801753-007	C-R27-S-186	SM2320B	NONE	5/22/2012	13:25	Carbonate	ND	mg/L	5.00
801753-007	C-R27-S-186	SM2540D	NONE	5/22/2012	13:25	Total Suspended Solids	ND	mg/L	10.0
801753-007	C-R27-S-186	SM4500HB	NONE	5/22/2012	13:25	PH	8.22 J	pH	4.00
801753-007	C-R27-S-186	SW6010B	NONE	5/22/2012	13:25	Iron	ND	ug/L	20.0
801753-007	C-R27-S-186	SW6010B	FLDFLT	5/22/2012	13:25	Iron	ND	ug/L	20.0
801753-007	C-R27-S-186	SW6010B	FLDFLT	5/22/2012	13:25	Molybdenum	ND	ug/L	10.0
801753-007	C-R27-S-186	SW6010B	FLDFLT	5/22/2012	13:25	Selenium	ND	ug/L	10.0
801753-007	C-R27-S-186	SW6020	FLDFLT	5/22/2012	13:25	Arsenic	2.1	ug/L	1.0
801753-007	C-R27-S-186	SW6020	FLDFLT	5/22/2012	13:25	Chromium	ND	ug/L	1.0
801753-007	C-R27-S-186	SW6020	FLDFLT	5/22/2012	13:25	Manganese	0.79	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801753-008	C-TAZ-D-186	E120.1	NONE	5/22/2012	10:30	EC	903	umhos/cm	2.00
801753-008	C-TAZ-D-186	E218.6	FLDFLT	5/22/2012	10:30	Chromium, hexavalent	ND	ug/L	0.20
801753-008	C-TAZ-D-186	E300	NONE	5/22/2012	10:30	Nitrate as N	ND	mg/L	0.500
801753-008	C-TAZ-D-186	SM2320B	NONE	5/22/2012	10:30	Alkalinity	128	mg/L	5.00
801753-008	C-TAZ-D-186	SM2320B	NONE	5/22/2012	10:30	Bicarbonate	128	mg/L	5.00
801753-008	C-TAZ-D-186	SM2320B	NONE	5/22/2012	10:30	Carbonate	ND	mg/L	5.00
801753-008	C-TAZ-D-186	SM2540D	NONE	5/22/2012	10:30	Total Suspended Solids	ND	mg/L	10.0
801753-008	C-TAZ-D-186	SM4500HB	NONE	5/22/2012	10:30	PH	8.18 J	pH	4.00
801753-008	C-TAZ-D-186	SW6010B	NONE	5/22/2012	10:30	Iron	ND	ug/L	20.0
801753-008	C-TAZ-D-186	SW6010B	FLDFLT	5/22/2012	10:30	Iron	ND	ug/L	20.0
801753-008	C-TAZ-D-186	SW6010B	FLDFLT	5/22/2012	10:30	Molybdenum	ND	ug/L	10.0
801753-008	C-TAZ-D-186	SW6010B	FLDFLT	5/22/2012	10:30	Selenium	ND	ug/L	10.0
801753-008	C-TAZ-D-186	SW6020	FLDFLT	5/22/2012	10:30	Arsenic	2.1	ug/L	1.0
801753-008	C-TAZ-D-186	SW6020	FLDFLT	5/22/2012	10:30	Chromium	ND	ug/L	1.0
801753-008	C-TAZ-D-186	SW6020	FLDFLT	5/22/2012	10:30	Manganese	0.58	ug/L	0.500
801753-009	C-TAZ-S-186	E120.1	NONE	5/22/2012	10:48	EC	901	umhos/cm	2.00
801753-009	C-TAZ-S-186	E218.6	FLDFLT	5/22/2012	10:48	Chromium, hexavalent	ND	ug/L	0.20
801753-009	C-TAZ-S-186	E300	NONE	5/22/2012	10:48	Nitrate as N	ND	mg/L	0.500
801753-009	C-TAZ-S-186	SM2320B	NONE	5/22/2012	10:48	Alkalinity	118	mg/L	5.00
801753-009	C-TAZ-S-186	SM2320B	NONE	5/22/2012	10:48	Bicarbonate	118	mg/L	5.00
801753-009	C-TAZ-S-186	SM2320B	NONE	5/22/2012	10:48	Carbonate	ND	mg/L	5.00
801753-009	C-TAZ-S-186	SM2540D	NONE	5/22/2012	10:48	Total Suspended Solids	ND	mg/L	10.0
801753-009	C-TAZ-S-186	SM4500HB	NONE	5/22/2012	10:48	PH	8.20 J	pH	4.00
801753-009	C-TAZ-S-186	SW6010B	NONE	5/22/2012	10:48	Iron	ND	ug/L	20.0
801753-009	C-TAZ-S-186	SW6010B	FLDFLT	5/22/2012	10:48	Iron	ND	ug/L	20.0
801753-009	C-TAZ-S-186	SW6010B	FLDFLT	5/22/2012	10:48	Molybdenum	ND	ug/L	10.0
801753-009	C-TAZ-S-186	SW6010B	FLDFLT	5/22/2012	10:48	Selenium	ND	ug/L	10.0
801753-009	C-TAZ-S-186	SW6020	FLDFLT	5/22/2012	10:48	Arsenic	2.0	ug/L	1.0
801753-009	C-TAZ-S-186	SW6020	FLDFLT	5/22/2012	10:48	Chromium	ND	ug/L	1.0
801753-009	C-TAZ-S-186	SW6020	FLDFLT	5/22/2012	10:48	Manganese	0.66	ug/L	0.50

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801753-010	R-19-186	E120.1	NONE	5/22/2012	14:05	EC	908	umhos/cm	2.00
801753-010	R-19-186	E218.6	FLDFLT	5/22/2012	14:05	Chromium, hexavalent	ND	ug/L	0.20
801753-010	R-19-186	E300	NONE	5/22/2012	14:05	Nitrate as N	ND	mg/L	0.500
801753-010	R-19-186	SM2320B	NONE	5/22/2012	14:05	Alkalinity	133	mg/L	5.00
801753-010	R-19-186	SM2320B	NONE	5/22/2012	14:05	Bicarbonate	133	mg/L	5.00
801753-010	R-19-186	SM2320B	NONE	5/22/2012	14:05	Carbonate	ND	mg/L	5.00
801753-010	R-19-186	SM2540D	NONE	5/22/2012	14:05	Total Suspended Solids	ND	mg/L	10.0
801753-010	R-19-186	SM4500HB	NONE	5/22/2012	14:05	PH	8.22	pH	4.00
801753-010	R-19-186	SW6010B	NONE	5/22/2012	14:05	Iron	37.4	ug/L	20.0
801753-010	R-19-186	SW6010B	FLDFLT	5/22/2012	14:05	Iron	ND	ug/L	20.0
801753-010	R-19-186	SW6010B	FLDFLT	5/22/2012	14:05	Molybdenum	ND	ug/L	10.0
801753-010	R-19-186	SW6010B	FLDFLT	5/22/2012	14:05	Selenium	ND	ug/L	10.0
801753-010	R-19-186	SW6020	FLDFLT	5/22/2012	14:05	Arsenic	2.0	ug/L	1.0
801753-010	R-19-186	SW6020	FLDFLT	5/22/2012	14:05	Chromium	ND	ug/L	1.0
801753-010	R-19-186	SW6020	FLDFLT	5/22/2012	14:05	Manganese	1.2	ug/L	0.50
801753-011	R-28-186	E120.1	NONE	5/22/2012	13:49	EC	904	umhos/cm	2.00
801753-011	R-28-186	E218.6	FLDFLT	5/22/2012	13:49	Chromium, hexavalent	ND	ug/L	0.20
801753-011	R-28-186	E300	NONE	5/22/2012	13:49	Nitrate as N	ND	mg/L	0.500
801753-011	R-28-186	SM2320B	NONE	5/22/2012	13:49	Alkalinity	124	mg/L	5.00
801753-011	R-28-186	SM2320B	NONE	5/22/2012	13:49	Bicarbonate	124	mg/L	5.00
801753-011	R-28-186	SM2320B	NONE	5/22/2012	13:49	Carbonate	ND	mg/L	5.00
801753-011	R-28-186	SM2540D	NONE	5/22/2012	13:49	Total Suspended Solids	ND	mg/L	10.0
801753-011	R-28-186	SM4500HB	NONE	5/22/2012	13:49	PH	8.19	pH	4.00
801753-011	R-28-186	SW6010B	NONE	5/22/2012	13:49	Iron	29.4	ug/L	20.0
801753-011	R-28-186	SW6010B	FLDFLT	5/22/2012	13:49	Iron	ND	ug/L	20.0
801753-011	R-28-186	SW6010B	FLDFLT	5/22/2012	13:49	Molybdenum	ND	ug/L	10.0
801753-011	R-28-186	SW6010B	FLDFLT	5/22/2012	13:49	Selenium	ND	ug/L	10.0
801753-011	R-28-186	SW6020	FLDFLT	5/22/2012	13:49	Arsenic	2.1	ug/L	1.0
801753-011	R-28-186	SW6020	FLDFLT	5/22/2012	13:49	Chromium	ND	ug/L	1.0
801753-011	R-28-186	SW6020	FLDFLT	5/22/2012	13:49	Manganese	1.1	ug/L	0.50

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801753-012	R63-186	E120.1	NONE	5/22/2012	11:49	EC	904	umhos/cm	2.00
801753-012	R63-186	E218.6	FLDFLT	5/22/2012	11:49	Chromium, hexavalent	ND	ug/L	0.20
801753-012	R63-186	E300	NONE	5/22/2012	11:49	Nitrate as N	ND	mg/L	0.500
801753-012	R63-186	SM2320B	NONE	5/22/2012	11:49	Alkalinity	117	mg/L	5.00
801753-012	R63-186	SM2320B	NONE	5/22/2012	11:49	Bicarbonate	117	mg/L	5.00
801753-012	R63-186	SM2320B	NONE	5/22/2012	11:49	Carbonate	ND	mg/L	5.00
801753-012	R63-186	SM2540D	NONE	5/22/2012	11:49	Total Suspended Solids	ND	mg/L	10.0
801753-012	R63-186	SM4500HB	NONE	5/22/2012	11:49	PH	8.19 J	pH	4.00
801753-012	R63-186	SW6010B	NONE	5/22/2012	11:49	Iron	26.6	ug/L	20.0
801753-012	R63-186	SW6010B	FLDFLT	5/22/2012	11:49	Iron	ND	ug/L	20.0
801753-012	R63-186	SW6010B	FLDFLT	5/22/2012	11:49	Molybdenum	ND	ug/L	10.0
801753-012	R63-186	SW6010B	FLDFLT	5/22/2012	11:49	Selenium	ND	ug/L	10.0
801753-012	R63-186	SW6020	FLDFLT	5/22/2012	11:49	Arsenic	2.0	ug/L	1.0
801753-012	R63-186	SW6020	FLDFLT	5/22/2012	11:49	Chromium	ND	ug/L	1.0
801753-012	R63-186	SW6020	FLDFLT	5/22/2012	11:49	Manganese	2.6	ug/L	0.50
801753-013	SW1-186	E120.1	NONE	5/22/2012	9:00	EC	931	umhos/cm	2.00
801753-013	SW1-186	E218.6	FLDFLT	5/22/2012	9:00	Chromium, hexavalent	ND	ug/L	0.20
801753-013	SW1-186	SM4500HB	NONE	5/22/2012	9:00	PH	7.41 J	pH	4.00
801753-013	SW1-186	SW6020	FLDFLT	5/22/2012	9:00	Chromium	ND	ug/L	1.0
801753-014	SW2-186	E120.1	NONE	5/22/2012	9:30	EC	931	umhos/cm	2.00
801753-014	SW2-186	E218.6	FLDFLT	5/22/2012	9:30	Chromium, hexavalent	ND	ug/L	0.20
801753-014	SW2-186	SM4500HB	NONE	5/22/2012	9:30	PH	7.57 J	pH	4.00
801753-014	SW2-186	SW6020	FLDFLT	5/22/2012	9:30	Chromium	ND	ug/L	1.0

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.

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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.RM
P.O. Number: 423575.MP.02.RM
Release Number:

Laboratory No. 801753

Printed 6/22/2012

Samples Received on 5/22/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-BNS-D-186	801753-001	05/22/2012 12:50	Water
C-I-3-D-186	801753-002	05/22/2012 11:14	Water
C-I-3-S-186	801753-003	05/22/2012 11:27	Water
C-R22A-D-186	801753-004	05/22/2012 12:17	Water
C-R22A-S-186	801753-005	05/22/2012 12:29	Water
C-R27-D-186	801753-006	05/22/2012 13:12	Water
C-R27-S-186	801753-007	05/22/2012 13:25	Water
C-TAZ-D-186	801753-008	05/22/2012 10:30	Water
C-TAZ-S-186	801753-009	05/22/2012 10:48	Water
R-19-186	801753-010	05/22/2012 14:05	Water
R-28-186	801753-011	05/22/2012 13:49	Water
R63-186	801753-012	05/22/2012 11:49	Water
SW1-186	801753-013	05/22/2012 09:00	Water
SW2-186	801753-014	05/22/2012 09:30	Water

Anions By I.C. - EPA 300.0

Batch 05AN12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Nitrate as Nitrogen	mg/L	05/23/2012 18:33	1.00	0.0270	0.500	ND
801753-002 Nitrate as Nitrogen	mg/L	05/23/2012 18:44	1.00	0.0270	0.500	ND
801753-003 Nitrate as Nitrogen	mg/L	05/23/2012 18:56	1.00	0.0270	0.500	ND
801753-004 Nitrate as Nitrogen	mg/L	05/23/2012 19:07	1.00	0.0270	0.500	ND
801753-005 Nitrate as Nitrogen	mg/L	05/23/2012 19:19	1.00	0.0270	0.500	ND
801753-006 Nitrate as Nitrogen	mg/L	05/23/2012 19:30	1.00	0.0270	0.500	ND
801753-007 Nitrate as Nitrogen	mg/L	05/23/2012 20:04	1.00	0.0270	0.500	ND
801753-008 Nitrate as Nitrogen	mg/L	05/23/2012 20:16	1.00	0.0270	0.500	ND
801753-009 Nitrate as Nitrogen	mg/L	05/23/2012 20:27	1.00	0.0270	0.500	ND
801753-010 Nitrate as Nitrogen	mg/L	05/23/2012 20:39	1.00	0.0270	0.500	ND

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Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 801747-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	8.71	8.67	0.506	0 - 20

Duplicate — Lab ID = 801747-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	25.0	65.0	63.1	3.03	0 - 20
Sulfate	mg/L	25.0	87.6	86.6	1.17	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.94	4.00	98.5	90 - 110
Sulfate	mg/L	1.00	20.2	20.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.02	4.00	101.	90 - 110

Matrix Spike — Lab ID = 801747-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	19.2	18.7(10.0)	105.	85 - 115

Matrix Spike — Lab ID = 801747-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	25.0	157.	163.(100.)	93.6	85 - 115
Sulfate	mg/L	25.0	190.	187.(100.)	104.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.95	4.00	98.8	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	99.9	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.02	4.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.95	3.00	98.3	90 - 110

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Anions By I.C. - EPA 300.0

Batch 05AN12S

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-011 Nitrate as Nitrogen	mg/L	05/24/2012 02:32	1.00	0.0270	0.500	ND
801753-012 Nitrate as Nitrogen	mg/L	05/24/2012 02:44	1.00	0.0270	0.500	ND

Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 801734-017

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	11.2	11.2	0.321	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

Matrix Spike — Lab ID = 801734-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	31.7	31.2(20.0)	102.	85 - 115

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.93	3.00	97.8	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.7	90 - 110

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Alkalinity by SM 2320B Batch 05ALK12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	127
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	127
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-002 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	126
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	126
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-003 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	125
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	125
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-004 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	127
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	127
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-005 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	132
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	132
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-006 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	112
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	112
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-007 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	122
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	122
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-008 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	128
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	128
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-009 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	118
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	118
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-010 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	133
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	133
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-011 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	124
Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	124
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND
801753-012 Alkalinity as CaCO3	mg/L	05/24/2012	1.00	1.68	5.00	117

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801753-012 Bicarbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	117
Carbonate (Calculated)	mg/L	05/24/2012	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 801753-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	138	140.	1.44	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.	99.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.	99.0	90 - 110

Matrix Spike — Lab ID = 801753-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	222	240.(100.)	82.0	75 - 125

Matrix Spike Duplicate — Lab ID = 801753-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	233	240.(100.)	93.0	75 - 125

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Specific Conductivity - EPA 120.1

Batch 05EC12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	908
801753-002 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	907
801753-003 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	892
801753-004 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	908
801753-005 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	905
801753-006 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	905
801753-007 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	907
801753-008 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	903
801753-009 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	901
801753-010 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	908
801753-011 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	904
801753-012 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	904
801753-013 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	931
801753-014 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	931

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 801753-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	901	901	0.00	0 - 10

Duplicate — Lab ID = 801775-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	908	908	0.00	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

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

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Metals by EPA 6010B, Total

Batch 060712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Iron	ug/L	06/07/2012 13:41	1.00	1.34	20.0	ND
801753-002 Iron	ug/L	06/07/2012 14:53	1.00	1.34	20.0	ND
801753-003 Iron	ug/L	06/07/2012 15:15	2.00	2.68	20.0	ND
801753-004 Iron	ug/L	06/07/2012 15:21	2.00	2.68	20.0	ND
801753-005 Iron	ug/L	06/07/2012 15:26	1.00	1.34	20.0	20.7
801753-006 Iron	ug/L	06/07/2012 15:32	1.00	1.34	20.0	ND
801753-007 Iron	ug/L	06/07/2012 15:38	1.00	1.34	20.0	ND
801753-008 Iron	ug/L	06/07/2012 16:11	1.00	1.34	20.0	ND
801753-009 Iron	ug/L	06/07/2012 16:17	1.00	1.34	20.0	ND
801753-010 Iron	ug/L	06/07/2012 16:23	1.00	1.34	20.0	37.4
801753-011 Iron	ug/L	06/07/2012 16:28	1.00	1.34	20.0	29.4
801753-012 Iron	ug/L	06/07/2012 16:34	1.00	1.34	20.0	26.6

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2120	2000	106.	85 - 115

Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1950	2000(2000)	97.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5320	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4880	5000	97.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4960	5000	99.2	90 - 110

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Chrome VI by EPA 218.6

Batch 05CrH12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Chromium, Hexavalent	ug/L	05/24/2012 11:18	1.00	0.0260	0.20	ND
801753-002 Chromium, Hexavalent	ug/L	05/24/2012 11:28	1.00	0.0260	0.20	ND
801753-003 Chromium, Hexavalent	ug/L	05/24/2012 11:38	1.00	0.0260	0.20	ND
801753-004 Chromium, Hexavalent	ug/L	05/24/2012 11:49	1.00	0.0260	0.20	ND
801753-005 Chromium, Hexavalent	ug/L	05/24/2012 11:59	1.00	0.0260	0.20	ND
801753-006 Chromium, Hexavalent	ug/L	05/24/2012 12:10	1.00	0.0260	0.20	ND
801753-007 Chromium, Hexavalent	ug/L	05/24/2012 12:20	1.00	0.0260	0.20	ND
801753-008 Chromium, Hexavalent	ug/L	05/24/2012 12:30	1.00	0.0260	0.20	ND
801753-009 Chromium, Hexavalent	ug/L	05/24/2012 13:12	1.00	0.0260	0.20	ND
801753-010 Chromium, Hexavalent	ug/L	05/24/2012 14:04	1.00	0.0260	0.20	ND
801753-011 Chromium, Hexavalent	ug/L	05/24/2012 14:14	1.00	0.0260	0.20	ND
801753-012 Chromium, Hexavalent	ug/L	05/24/2012 15:06	1.00	0.0260	0.20	ND
801753-013 Chromium, Hexavalent	ug/L	05/24/2012 15:17	1.00	0.0260	0.20	ND
801753-014 Chromium, Hexavalent	ug/L	05/24/2012 15:27	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0360	0.0419	15.1	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	98.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.8	90 - 110

Matrix Spike — Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.56	5.00(5.00)	91.3	90 - 110

Matrix Spike — Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.06(1.00)	95.6	90 - 110

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Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.04(1.00)	96.3	90 - 110

Matrix Spike — Lab ID = 801753-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	01000	1.04(1.00)	96.4	90 - 110

Matrix Spike — Lab ID = 801753-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 801753-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.04(1.00)	97.3	90 - 110

Matrix Spike — Lab ID = 801753-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.965	1.03(1.00)	93.4	90 - 110

Matrix Spike — Lab ID = 801753-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.932	1.03(1.00)	90.3	90 - 110

Matrix Spike — Lab ID = 801753-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.950	1.03(1.00)	91.8	90 - 110

Matrix Spike — Lab ID = 801753-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.938	1.04(1.00)	90.2	90 - 110

Matrix Spike — Lab ID = 801753-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.992	1.04(1.00)	95.3	90 - 110

Matrix Spike — Lab ID = 801753-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.947	1.03(1.00)	92.1	90 - 110

Matrix Spike — Lab ID = 801753-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.959	1.04(1.00)	92.3	90 - 110

Matrix Spike — Lab ID = 801753-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.981	1.03(1.00)	94.7	90 - 110

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Matrix Spike — Lab ID = 801753-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.978	1.02(1.00)	95.7	90 - 110

Matrix Spike — Lab ID = 801753-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.970	1.02(1.00)	94.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.61	10.0	96.1	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.79	10.0	97.9	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.98	10.0	99.8	95 - 105

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Metals by EPA 6020A, Dissolved

Batch 060712D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Chromium	ug/L	06/08/2012 08:37	5.00	0.195	1.0	ND
801753-002 Chromium	ug/L	06/08/2012 10:19	5.00	0.195	1.0	ND
801753-003 Chromium	ug/L	06/08/2012 10:26	5.00	0.195	1.0	ND
801753-004 Chromium	ug/L	06/08/2012 10:33	5.00	0.195	1.0	ND
801753-005 Chromium	ug/L	06/08/2012 12:01	5.00	0.195	1.0	ND
801753-006 Chromium	ug/L	06/08/2012 10:48	5.00	0.195	1.0	ND
801753-007 Chromium	ug/L	06/08/2012 10:55	5.00	0.195	1.0	ND
801753-008 Chromium	ug/L	06/08/2012 11:10	5.00	0.195	1.0	ND
801753-009 Chromium	ug/L	06/08/2012 11:17	5.00	0.195	1.0	ND
801753-010 Chromium	ug/L	06/08/2012 12:15	5.00	0.195	1.0	ND
801753-011 Chromium	ug/L	06/08/2012 12:23	5.00	0.195	1.0	ND
801753-012 Chromium	ug/L	06/08/2012 12:30	5.00	0.195	1.0	ND
801753-013 Chromium	ug/L	06/08/2012 12:37	5.00	0.195	1.0	ND
801753-014 Chromium	ug/L	06/08/2012 12:44	5.00	0.195	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.160	0.200	79.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.4	100.	94.4	85 - 115

Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	90.4	100.(100.)	90.4	75 - 125

Matrix Spike Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	92.5	100.(100.)	92.5	75 - 125

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Metals by EPA 6020A, Dissolved

Batch 061512B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Arsenic	ug/L	06/16/2012 08:34	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 08:34	1.00	0.0540	0.50	0.70
801753-002 Arsenic	ug/L	06/16/2012 09:30	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 09:30	1.00	0.0540	0.50	0.62
801753-003 Arsenic	ug/L	06/16/2012 09:45	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 09:45	1.00	0.0540	0.50	0.65
801753-004 Arsenic	ug/L	06/16/2012 09:59	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/16/2012 09:59	1.00	0.0540	0.50	0.72
801753-005 Arsenic	ug/L	06/16/2012 10:13	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/16/2012 10:13	1.00	0.0540	0.50	0.82
801753-006 Arsenic	ug/L	06/16/2012 10:28	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 10:28	1.00	0.0540	0.50	0.73
801753-007 Arsenic	ug/L	06/16/2012 11:03	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 11:03	1.00	0.0540	0.50	0.79
801753-008 Arsenic	ug/L	06/16/2012 11:18	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 11:18	1.00	0.0540	0.50	0.58
801753-009 Arsenic	ug/L	06/16/2012 11:32	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/16/2012 11:32	1.00	0.0540	0.50	0.66
801753-010 Arsenic	ug/L	06/16/2012 11:46	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/16/2012 11:46	1.00	0.0540	0.50	1.2
801753-011 Arsenic	ug/L	06/16/2012 12:01	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/16/2012 12:01	1.00	0.0540	0.50	1.1

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.250	0.200	125.	70 - 130
Manganese	ug/L	1.00	0.179	0.200	89.5	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	96.2	100.	96.2	85 - 115
Manganese	ug/L	5.00	93.5	100.	93.5	85 - 115

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Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	93.2	102.(100.)	91.0	75 - 125
Manganese	ug/L	1.00	98.1	101.(100.)	97.4	75 - 125

Matrix Spike Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	93.7	102.(100.)	91.6	75 - 125
Manganese	ug/L	1.00	98.0	101.(100.)	97.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.3	10.0	103.	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.70	10.0	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.72	10.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.85	10.0	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.80	10.0	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.76	10.0	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.94	10.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.78	10.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.98	10.0	99.8	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 061812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-012 Arsenic	ug/L	06/18/2012 20:05	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/18/2012 20:05	1.00	0.0540	0.50	2.6

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.201	0.200	101.	70 - 130
Manganese	ug/L	1.00	0.210	0.200	105.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.6	100.	99.6	85 - 115
Manganese	ug/L	5.00	95.3	100.	95.3	85 - 115

Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	93.5	102.(100.)	91.4	75 - 125
Manganese	ug/L	1.00	99.4	101.(100.)	98.7	75 - 125

Matrix Spike Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	92.5	102.(100.)	90.4	75 - 125
Manganese	ug/L	1.00	97.9	101.(100.)	97.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.1	10.0	101.	90 - 110
Manganese	ug/L	1.00	9.48	10.0	94.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.94	10.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.1	10.0	101.	90 - 110

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Metals by EPA 6010B, Dissolved Batch 061412C-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Iron	ug/L	06/15/2012 00:24	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 00:24	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 00:24	1.00	3.80	10.0	ND
801753-002 Iron	ug/L	06/15/2012 00:47	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 00:47	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 00:47	1.00	3.80	10.0	ND
801753-003 Iron	ug/L	06/15/2012 00:53	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 00:53	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 00:53	1.00	3.80	10.0	ND
801753-004 Iron	ug/L	06/15/2012 01:20	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:20	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:20	1.00	3.80	10.0	ND
801753-005 Iron	ug/L	06/15/2012 01:26	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:26	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:26	1.00	3.80	10.0	ND
801753-006 Iron	ug/L	06/15/2012 01:32	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:32	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:32	1.00	3.80	10.0	ND
801753-007 Iron	ug/L	06/15/2012 01:38	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:38	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:38	1.00	3.80	10.0	ND
801753-008 Iron	ug/L	06/15/2012 01:44	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:44	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:44	1.00	3.80	10.0	ND
801753-009 Iron	ug/L	06/15/2012 01:50	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:50	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:50	1.00	3.80	10.0	ND
801753-010 Iron	ug/L	06/15/2012 01:55	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 01:55	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 01:55	1.00	3.80	10.0	ND
801753-011 Iron	ug/L	06/15/2012 02:01	1.00	1.70	20.0	ND
Molybdenum	ug/L	06/15/2012 02:01	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 02:01	1.00	3.80	10.0	ND
801753-012 Iron	ug/L	06/15/2012 02:07	1.00	1.70	20.0	ND

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801753-012 Molybdenum	ug/L	06/15/2012 02:07	1.00	0.900	10.0	ND
Selenium	ug/L	06/15/2012 02:07	1.00	3.80	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Selenium	ug/L	1.00	ND	0.00	0	0 - 20
Molybdenum	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	105.	100.	105.	85 - 115
Selenium	ug/L	1.00	95.6	100.	95.6	85 - 115
Molybdenum	ug/L	1.00	103.	100.	103	85 - 115

Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	99.1	100.(100.)	99.1	75 - 125
Selenium	ug/L	1.00	102.	100.(100.)	102.	75 - 125
Molybdenum	ug/L	1.00	107.	100.(100.)	107.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5080	5000	102.	90 - 110
Selenium	ug/L	1.00	5080	5000	102.	90 - 110
Molybdenum	ug/L	1.00	4990	5000	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4910	5000	98.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4990	5000	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4910	5000	98.2	90 - 110

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pH by SM 4500-H B Batch 05PH12Q

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
801753-001 pH	pH	05/23/2012 13:08	1.00	0.0590	4.00	8.18	J
801753-002 pH	pH	05/23/2012 13:10	1.00	0.0590	4.00	8.17	J
801753-003 pH	pH	05/23/2012 13:12	1.00	0.0590	4.00	8.16	J
801753-004 pH	pH	05/23/2012 13:15	1.00	0.0590	4.00	8.17	J
801753-005 pH	pH	05/23/2012 13:18	1.00	0.0590	4.00	8.16	J
801753-006 pH	pH	05/23/2012 13:20	1.00	0.0590	4.00	8.17	J

Duplicate — Lab ID = 801747-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.70	7.69	0.130	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.02	7.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.00	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.07	7.00	101	90 - 110

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pH by SM 4500-H B Batch 05PH12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
801753-007 pH	pH	05/23/2012 13:33	1.00	0.0590	4.00	8.22	J
801753-008 pH	pH	05/23/2012 13:35	1.00	0.0590	4.00	8.18	J
801753-009 pH	pH	05/23/2012 13:40	1.00	0.0590	4.00	8.20	J
801753-010 pH	pH	05/23/2012 13:45	1.00	0.0590	4.00	8.22	
801753-011 pH	pH	05/23/2012 13:47	1.00	0.0590	4.00	8.19	
801753-012 pH	pH	05/23/2012 13:50	1.00	0.0590	4.00	8.19	J
801753-013 pH	pH	05/23/2012 13:53	1.00	0.0590	4.00	7.41	J
801753-014 pH	pH	05/23/2012 13:55	1.00	0.0590	4.00	7.57	J

Duplicate — Lab ID = 801753-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.59	7.57	0.264	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.02	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.05	7.00	101.	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.

Total Suspended Solids by SM 2540 D

Batch 05TSS12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-001 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-002 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-003 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-004 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-005 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-006 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-007 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-008 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-009 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-010 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Total Suspended Solids	mg/L	1.00	ND

Duplicate — Lab ID = 801753-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Duplicate — Lab ID = 801753-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	98.0	100.	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	101	100.	101	90 - 110

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Total Suspended Solids by SM 2540 D Batch 05TSS12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801753-011 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801753-012 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Total Suspended Solids	mg/L	1.00	ND

Duplicate — Lab ID = 801775-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	98.0	100.	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	101	100.	101	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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.

E2 SC

TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 05TSS12I

Date Analyzed: 05/24/12

Dish Number	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
D20	BLANK	1000	1.4106	1.4106	1.4106	0.0000	No	0.0000	0.0	2.5	ND
D23	801747-1	500	1.4249	1.4252	1.4252	0.0000	No	0.0003	0.6	5.0	ND
D24	801747-2	500	1.4197	1.4197	1.4197	0.0000	No	0.0000	0.0	5.0	ND
D25	801747-3	500	1.4263	1.4263	1.4263	0.0000	No	0.0000	0.0	5.0	ND
D26	801747-4	500	1.4383	1.4383	1.4383	0.0000	No	0.0000	0.0	5.0	ND
D27	801747-5	500	1.4148	1.4148	1.4148	0.0000	No	0.0000	0.0	5.0	ND
D28	801747-6	500	1.4422	1.4423	1.4423	0.0000	No	0.0001	0.2	5.0	ND
D29	801747-7	500	1.4350	1.4350	1.435	0.0000	No	0.0000	0.0	5.0	ND
D30	801753-1	500	1.4173	1.4174	1.4174	0.0000	No	0.0001	0.2	5.0	ND
D31	801753-2	500	1.4292	1.4309	1.4309	0.0000	No	0.0017	3.4	5.0	ND
D32	801753-3	500	1.4326	1.4326	1.4326	0.0000	No	0.0000	0.0	5.0	ND
D33	801753-3D	500	1.4353	1.4353	1.4353	0.0000	No	0.0000	0.0	5.0	ND
D34	801753-4	500	1.4307	1.4309	1.4309	0.0000	No	0.0002	0.4	5.0	ND
D35	801753-5	500	1.4188	1.4188	1.4188	0.0000	No	0.0000	0.0	5.0	ND
D36	801753-6	500	1.4278	1.4280	1.428	0.0000	No	0.0002	0.4	5.0	ND
D37	801753-7	500	1.4383	1.4383	1.4383	0.0000	No	0.0000	0.0	5.0	ND
D38	801753-8	500	1.4307	1.4311	1.4311	0.0000	No	0.0004	0.8	5.0	ND
D39	801753-9	500	1.4328	1.4330	1.433	0.0000	No	0.0002	0.4	5.0	ND
D40	801753-10	500	1.4340	1.4349	1.4349	0.0000	No	0.0009	1.8	5.0	ND
D41	801753-10D	500	1.4329	1.4338	1.4338	0.0000	No	0.0009	1.8	5.0	ND
D21	LCS-1	100	1.4219	1.4317	1.4317	0.0000	No	0.0098	98.0	25.0	98.0
D22	LCS-2	100	1.4372	1.4473	1.4473	0.0000	No	0.0101	101.0	25.0	101.0

Calculation as follows: Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 1\ 0^{6}$

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.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	98	100	98.0%	90-110%	Yes
LCSD	101	100	101.0%	90-110%	Yes

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801753-3	0	0	#DIV/0!	≤5%	#DIV/0!
801753-10	0.0009	0.0009	0.0%	5%	Yes

LCS Recovery

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

$$\%\ Difference\ =\ \frac{|A\ or\ B - C|}{C}\ x\ 100$$

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

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Gautam S.
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

F-2 SC

TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 05TSS12J

Date Analyzed: 05/24/12

Dish Number	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
D20	BLK	1000	1.4106	1.4106	1.4106	0.0000	No	0.0000	0.0	2.5	ND
D42	801753-11	500	1.4299	1.4305	1.4305	0.0000	No	0.0006	1.2	5.0	ND
D43	801753-12	500	1.4328	1.4331	1.4331	0.0000	No	0.0003	0.6	5.0	ND
D44	801775-1	500	1.4337	1.4337	1.4337	0.0000	No	0.0000	0.0	5.0	ND
D45	801775-2	500	1.4339	1.4339	1.4339	0.0000	No	0.0000	0.0	5.0	ND
D46	801775-3	500	1.4424	1.4459	1.4459	0.0000	No	0.0035	7.0	5.0	7.0
D47	801775-4	500	1.4224	1.4264	1.4264	0.0000	No	0.0040	8.0	5.0	8.0
D48	801775-5	500	1.4332	1.4332	1.4332	0.0000	No	0.0000	0.0	5.0	ND
D49	801775-6	500	1.4406	1.4406	1.4406	0.0000	No	0.0000	0.0	5.0	ND
D50	801775-7	500	1.4321	1.4321	1.4321	0.0000	No	0.0000	0.0	5.0	ND
D51	801775-8	500	1.4225	1.4225	1.4225	0.0000	No	0.0000	0.0	5.0	ND
D52	801775-8D	500	1.4373	1.4373	1.4373	0.0000	No	0.0000	0.0	5.0	ND
D53	801775-9	500	1.4378	1.4378	1.4378	0.0000	No	0.0000	0.0	5.0	ND
D54	801775-10	500	1.4300	1.4300	1.43	0.0000	No	0.0000	0.0	5.0	ND
D55	801775-11	500	1.4388	1.4395	1.4395	0.0000	No	0.0007	1.4	5.0	ND
D56	801723-1	1000	1.4283	1.4419	1.4419	0.0000	No	0.0136	13.6	2.5	13.6
D57	801730	1000	1.4304	1.4371	1.4371	0.0000	No	0.0067	6.7	2.5	6.7
D58	801731	1000	1.4339	1.4721	1.4721	0.0000	No	0.0382	38.2	2.5	38.2
D59	801732	300	1.4284	1.4398	1.4398	0.0000	No	0.0114	38.0	8.3	38.0
D60	801732D	300	1.4241	1.4352	1.4352	0.0000	No	0.0111	37.0	8.3	37.0
D61	801767	500	1.4350	1.4735	1.4735	0.0000	No	0.0385	77.0	5.0	77.0
D21	LCS-1	100	1.4219	1.4317	1.4317	0.0000	No	0.0098	98.0	25.0	98.0
D22	LCS-2	100	1.4372	1.4473	1.4473	0.0000	No	0.0101	101.0	25.0	101.0

Calculation as follows: Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 1\ 0^{6}$

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.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	98	100	98.0%	90-110%	Yes
LCSD	101	100	101.0%	90-110%	Yes

LCS Recovery

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

$$\%\ Difference\ =\ \frac{|A\ or\ B - C|}{C}\ x\ 100$$

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

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801775-8	0	0	#DIV/0!	≤5%	#DIV/0!
801732	0.0114	0.0111	1.3%	5%	Yes

GAUTAM
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Tss_2011

TRUESDAIL LABORATORIES, INC.

Alkalinity by SM 2320B

Calculations

E2 SC

Analytical Batch: 05ALK12H
Matrix: Water
Date of Analysis: 5/24/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	5.07	50	0.02		0.0	0.00		0.0	5	ND	ND	ND	ND	
801753-1	8.11	50	0.02		0.0	6.35		127.0	5	127.0	127.0	ND	ND	
801753-2	8.16	50	0.02		0.0	6.30		126.0	5	126.0	126.0	ND	ND	
801753-3	8.22	50	0.02		0.0	6.25		125.0	5	125.0	125.0	ND	ND	
801753-4	8.25	50	0.02		0.0	6.35		127.0	5	127.0	127.0	ND	ND	
801753-5	8.26	50	0.02		0.0	6.60		132.0	5	132.0	132.0	ND	ND	
801753-6	8.25	50	0.02		0.0	5.60		112.0	5	112.0	112.0	ND	ND	
801753-7	8.24	50	0.02		0.0	6.10		122.0	5	122.0	122.0	ND	ND	
801753-8	8.26	50	0.02		0.0	6.40		128.0	5	128.0	128.0	ND	ND	
801753-9	8.25	50	0.02		0.0	5.90		118.0	5	118.0	118.0	ND	ND	
801753-10	8.29	50	0.02		0.0	6.65		133.0	5	133.0	133.0	ND	ND	
801753-11	8.29	50	0.02		0.0	6.20		124.0	5	124.0	124.0	ND	ND	
801753-12	8.28	50	0.02		0.0	5.85		117.0	5	117.0	117.0	ND	ND	
801753-13	7.61	50	0.02		0.0	6.35		127.0	5	127.0	127.0	ND	ND	
801753-14	7.70	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
801753-14 DUP	7.73	50	0.02		0.0	6.90		138.0	5	138.0	138.0	ND	ND	
801753-14 MS	9.48	50	0.02	2.1	42.0	11.10		222.0	5	222.0	138.0	84	ND	
801753-14 MSD	9.45	50	0.02	2.1	42.0	11.65		233.0	5	233.0	149.0	84	ND	
801799	7.90	50	0.02		0.0	13.60		272.0	5	272.0	272.0	ND	ND	
LCS	10.58	50	0.02	2.4	48.0	4.95		99.0	5	99.0	3.0	96	ND	
LCSD	10.62	50	0.02	2.4	47.0	4.95		99.0	5	99.0	5.0	94	ND	

Calculations as follows:

T or P = $\left(\frac{A \times N \times 50000}{mL\ sample}\right)$

Where:
T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Low Alkalinity: = $\frac{(2 \times B - C) \times N \times 50000}{mL\ sample}$ as mg/L CaCO3

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	Accetance Limit	QC Within Control?
LCS	99	100	99.0%	90-110	Yes
LCSD	99	100	99.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
801753-14	140	138	1.4%	≤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?
801753-14	140	1	100	100	222	240.00	82%	75-125	Yes	2.4%	≤20%	Yes
	140	1	100	100	233	240.00	93%		Yes			

060

Melissa S.
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

052412h

Rec'd 5/22/12

S 801753

801753

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/22/2012 3:03:51 PM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-186
Turnaround Time 10 Days
Shipping Date: 5/22/2012
COC Number: 1

	DATE	TIME	Matrix	Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C		
				Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA		
				Holding Time:	28	28	180	180	180	2	2	2	2	2		
					Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (6020AFF) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)		
1	C-BNS-D-186	5/22/2012	12:50	Water	X		X	X	X	X	X	X	X	X	9	
2	C-I-3-D-186	5/22/2012	11:14	Water	X		X	X	X	X	X	X	X	X	9	pH=2
3	C-I-3-S-186	5/22/2012	11:27	Water	X		X	X	X	X	X	X	X	X	9	
	C-MW-80-186	5/22/2012	12:40	Water		X									1	Hold
	C-MW-81-186	5/22/2012	13:41	Water		X									1	Hold
4	C-R22A-D-186	5/22/2012	12:17	Water	X		X	X	X	X	X	X	X	X	9	
5	C-R22A-S-186	5/22/2012	12:29	Water	X		X	X	X	X	X	X	X	X	9	
6	C-R27-D-186	5/22/2012	13:12	Water	X		X	X	X	X	X	X	X	X	9	pH=2
7	C-R27-S-186	5/22/2012	13:25	Water	X		X	X	X	X	X	X	X	X	9	
8	C-TAZ-D-186	5/22/2012	10:30	Water	X		X	X	X	X	X	X	X	X	9	
9	C-TAZ-S-186	5/22/2012	10:48	Water	X		X	X	X	X	X	X	X	X	9	
10	R-19-186	5/22/2012	14:05	Water	X		X	X	X	X	X	X	X	X	9	
11	R-28-186	5/22/2012	13:49	Water	X		X	X	X	X	X	X	X	X	9	
12	R63-186	5/22/2012	11:49	Water	X		X	X	X	X	X	X	X	X	9	

* Where provided w/ 3 Cr6 + 3 ~~CT~~, please analyze diss metals, 1 + hold 2

? H for 6020A/6010B

* Sample Conditions See Form Attached

ALERT !! Level III QC

	Signatures	Date/Time
Approved by		5-22-12 1530
Sampled by		
Relinquished by		
Received by		5-22-12 15:30
Relinquished by		5-22-12 21:30
Received by	Linda, TLI	5/22/12 21:30

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:
May 22-24, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL 801753 **CHAIN OF CUSTODY RECORD** 5/22/2012 3:03:52 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.RM
Task Order
Project 2012-RMP-186
Turnaround Time 10 Days
Shipping Date: 5/22/2012
COC Number: 1

	DATE	TIME	Matrix	Container:	Preservatives:	Filtered:	Holding Time:	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (6020AFF) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)	Number of Containers	COMMENTS
				3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter						
				(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C						
				Field	NA	NA	Field	Field	NA	NA	NA	NA	NA						
				28	28	180	180	180	2	2	2	2	2						
RMP-AB1-186	5/22/2012	14:15	Water		X													1	Hold
SW1-186	5/22/2012	9:00	Water	X			X		X		X							5	pH=2 6020A/ 6010B
SW2-186	5/22/2012	9:30	Water	X			X		X		X							5	
																	TOTAL NUMBER OF CONTAINERS	121	

* Where provided w/ multiple Cr6 + dBs. metals bottles, please analyze 1 + hold 2

ALERT !!
Level III QC

	Signatures	Date/Time
Approved by		
Sampled by		5-22-12 1530
Relinquished by		
Received by		5-22-12 1530
Relinquished by		5-22-12 2130
Received by	Linda	5/22/12 21:30

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:
May 22-24, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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
5/23/12	801747-1	9.5	N/A	N/A	N/A	QW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
5/23/12	801750	7	2 mL	9.5	10:30 Am	QW
5/23/12	801753-1	9.5	N/A	N/A	N/A	QW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					

QW 5/30/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1714	<1	<2	5-22-12	BE	NO	NO
80 1715 (D,T)	↓	↓	↓	↓	Yes	30 to A
80 1725	↓	↓	↓	↓	NO	NO
80 1726	↓	↓	↓	↓	↓	↓
80 1727	↓	↓	↓	↓	↓	↓
80 1728	↓	↓	↓	↓	↓	↓
80 1729	>1	↓	↓	↓	Yes	30 to A
80 1730	↓	↓	↓	↓	↓	↓
80 1731	↓	↓	↓	↓	↓	↓
D T 80 1747 (1-8) (1-7)	<1	<2	5-23-12	BE	YES	30 to A
80 1750	↓	>2	↓	↓	↓	YES 10:00
T D 80 1751 (1-3)	↓	↓	↓	↓	↓	need F. / T
80 1752 (1-4, 6-7)	↓	<2	↓	↓	↓	↓
T D 80 1753 (1-14)	↓	↓	↓	↓	↓	↓
80 1775 (1-11) T D	<1	<2	5-24-12	BE	YES	30 to A
80 1737 (1-3	↓	>2	↓	↓	NO	YES 11:00 AM
80 1764 (10-12)	↓	↓	↓	↓	↓	"
80 1767	↓	<2	↓	↓	↓	NO
80 1790 (1-10)	↓	↓	↓	↓	↓	↓
80 1791 (1-10)	↓	↓	↓	↓	↓	↓
80 1792 (1-10)	↓	↓	↓	↓	↓	↓
80 1793 (1-72)	↓	>2	↓	↓	↓	YES 5-27-12 18
80 1715	<1	>2	5/25/12	[illegible]	—	Yes 5:30pm using HCl per Client request
80 1747 (1-7)	↓	↓	↓	↓	↓	↓
80 1799	<1	>2	5/29/12	BE	NO	YES 18:00
80 1818	<1	<2	↓	↓	↓	NO
80 1828	↓	↓	↓	↓	↓	↓
80 1827	↓	↓	↓	↓	↓	↓
80 1839 (D)	<1	<2	5-30-12	BE	YES	30 to A
80 1840 (T)	↓	>2	↓	↓	↓	YES 14:00
80 1841 (1-2)	>1	<2	↓	↓	↓	↓
80 1845 (1-12)	<1	>2	↓	↓	NO	YES 18:30
80 1848	>1	<2	↓	↓	YES	30 to A
80 1849 (1-12)	<1	>2	↓	↓	NO	YES 18:30
80 1860 (1-3)	<1	>2	5/31/12	KK	NO	YES @ 10PM BE 5-31-12
80 1871	>1	<2 ~~>2~~ BE	5.31.12	BE	YES	30 to A ~~YES~~ 6:00
80 1883 (1-5)	<1	<2	6-1-12	BE	NO	NO
80 1892	<1	<2	6-5-12	BE	NO	NO
80 1893	↓	↓	↓	↓	↓	↓
80 1898 (1-2, 4)	↓	>2	↓	↓	↓	YES 11:00
80 1910-6	↓	↓	↓	↓	↓	↓
80 1907	↓	<2	↓	↓	YES	30 to A
80 1908	↓	↓	↓	↓	↓	↓
80 1909 (1-3, 5-7)	↓	↓	↓	↓	↓	↓
80 1912 (1-10)	↓	↓	↓	↓	NO	NO
80 1913 (1-10	↓	↓	↓	↓	↓	↓
80 1914	>1	<2	↓	↓	YES	30 to A
80 1915	<1	↓	↓	↓	NO	NO
80 1917	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801453

Date Delivered: 05/22/12 **Time:** 21:30 **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)? 4 °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: L. Stubmuir

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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

June 25, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-RMP-186, SURFACEWATER MONITORING PROJECT, TLI NO.: 801775

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-186 surfacewater-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 on May 23, 2012, 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.

Due to the early sampling time and late arrival of the samples, samples 801775-1, 801775-3, and 801775-4 for pH analysis by SM 4500-H B were analyzed past the holding time. Mr. Shawn Duffy approved the analysis.

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

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Event 2012-RMP-186 Cr by SW 6020, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional acid needed	Final pH	Comments
C-CON-D-186	2.00	No			
C-CON-S-186	2.00	No			
C-MAR-D-186	2.00	No			
C-MAR-S-186	2.00	No			
C-NR1-D-186	2.00	No			
C-NR1-S-186	2.00	No			
C-NR3-D-186	2.00	No			
C-NR3-S-186	2.00	No			
C-NR4-D-186	2.00	No			
C-NR4-S-186	2.00	No			
RRB-186	2.00	No			

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Event 2012-RMP-186 Cr (VI) by EPA 218.6, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional buffer needed	Final pH	Comments
C-CON-D-186	9.50	No			
C-CON-S-186	9.50	No			
C-MAR-D-186	9.50	No			
C-MAR-S-186	9.50	No			
C-NR1-D-186	9.50	No			
C-NR1-S-186	9.50	No			
C-NR3-D-186	9.50	No			
C-NR3-S-186	9.50	No			
C-NR4-D-186	9.50	No			
C-NR4-S-186	9.50	No			
RRB-186	9.50	No			

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

Laboratory No.: 801775
Date Received: May 23, 2012
Revision 1; June 26, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801775-001	C-CON-D-186	E120.1	NONE	5/23/2012	9:41	EC	907	umhos/cm	2.00
801775-001	C-CON-D-186	E218.6	FLDFLT	5/23/2012	9:41	Chromium, hexavalent	ND	ug/L	0.20
801775-001	C-CON-D-186	E300	NONE	5/23/2012	9:41	Nitrate as N	ND	mg/L	0.500
801775-001	C-CON-D-186	SM2320B	NONE	5/23/2012	9:41	Alkalinity	120	mg/L	5.00
801775-001	C-CON-D-186	SM2320B	NONE	5/23/2012	9:41	Bicarbonate	120	mg/L	5.00
801775-001	C-CON-D-186	SM2320B	NONE	5/23/2012	9:41	Carbonate	ND	mg/L	5.00
801775-001	C-CON-D-186	SM2540D	NONE	5/23/2012	9:41	Total Suspended Solids	ND	mg/L	10.0
801775-001	C-CON-D-186	SM4500HB	NONE	5/23/2012	9:41	PH	8.06 J	pH	4.00
801775-001	C-CON-D-186	SW6010B	NONE	5/23/2012	9:41	Iron	ND	ug/L	20.0
801775-001	C-CON-D-186	SW6010B	FLDFLT	5/23/2012	9:41	Iron	ND	ug/L	20.0
801775-001	C-CON-D-186	SW6010B	FLDFLT	5/23/2012	9:41	Molybdenum	ND	ug/L	10.0
801775-001	C-CON-D-186	SW6010B	FLDFLT	5/23/2012	9:41	Selenium	ND	ug/L	10.0
801775-001	C-CON-D-186	SW6020	FLDFLT	5/23/2012	9:41	Arsenic	2.1	ug/L	1.0
801775-001	C-CON-D-186	SW6020	FLDFLT	5/23/2012	9:41	Chromium	ND	ug/L	1.0
801775-001	C-CON-D-186	SW6020	FLDFLT	5/23/2012	9:41	Manganese	0.67	ug/L	0.50

900

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
801775-002	C-CON-S-186	E120.1	NONE	5/23/2012	9:55	EC	899	umhos/cm	2.00
801775-002	C-CON-S-186	E218.6	FLDFLT	5/23/2012	9:55	Chromium, hexavalent	ND	ug/L	0.20
801775-002	C-CON-S-186	E300	NONE	5/23/2012	9:55	Nitrate as N	ND	mg/L	0.500
801775-002	C-CON-S-186	SM2320B	NONE	5/23/2012	9:55	Alkalinity	128	mg/L	5.00
801775-002	C-CON-S-186	SM2320B	NONE	5/23/2012	9:55	Bicarbonate	128	mg/L	5.00
801775-002	C-CON-S-186	SM2320B	NONE	5/23/2012	9:55	Carbonate	ND	mg/L	5.00
801775-002	C-CON-S-186	SM2540D	NONE	5/23/2012	9:55	Total Suspended Solids	ND	mg/L	10.0
801775-002	C-CON-S-186	SM4500HB	NONE	5/23/2012	9:55	PH	8.06	pH	4.00
801775-002	C-CON-S-186	SW6010B	NONE	5/23/2012	9:55	Iron	ND	ug/L	20.0
801775-002	C-CON-S-186	SW6010B	FLDFLT	5/23/2012	9:55	Iron	ND	ug/L	20.0
801775-002	C-CON-S-186	SW6010B	FLDFLT	5/23/2012	9:55	Molybdenum	ND	ug/L	10.0
801775-002	C-CON-S-186	SW6010B	FLDFLT	5/23/2012	9:55	Selenium	ND	ug/L	10.0
801775-002	C-CON-S-186	SW6020	FLDFLT	5/23/2012	9:55	Arsenic	1.9	ug/L	1.0
801775-002	C-CON-S-186	SW6020	FLDFLT	5/23/2012	9:55	Chromium	ND	ug/L	1.0
801775-002	C-CON-S-186	SW6020	FLDFLT	5/23/2012	9:55	Manganese	0.68	ug/L	0.50
801775-003	C-MAR-D-186	E120.1	NONE	5/23/2012	8:29	EC	919	umhos/cm	2.00
801775-003	C-MAR-D-186	E218.6	FLDFLT	5/23/2012	8:29	Chromium, hexavalent	ND	ug/L	0.20
801775-003	C-MAR-D-186	E300	NONE	5/23/2012	8:29	Nitrate as N	ND	mg/L	0.500
801775-003	C-MAR-D-186	SM2320B	NONE	5/23/2012	8:29	Alkalinity	119	mg/L	5.00
801775-003	C-MAR-D-186	SM2320B	NONE	5/23/2012	8:29	Bicarbonate	119	mg/L	5.00
801775-003	C-MAR-D-186	SM2320B	NONE	5/23/2012	8:29	Carbonate	ND	mg/L	5.00
801775-003	C-MAR-D-186	SM2540D	NONE	5/23/2012	8:29	Total Suspended Solids	ND	mg/L	10.0
801775-003	C-MAR-D-186	SM4500HB	NONE	5/23/2012	8:29	PH	7.78 J	pH	4.00
801775-003	C-MAR-D-186	SW6010B	NONE	5/23/2012	8:29	Iron	198	ug/L	20.0
801775-003	C-MAR-D-186	SW6010B	FLDFLT	5/23/2012	8:29	Iron	ND	ug/L	20.0
801775-003	C-MAR-D-186	SW6010B	FLDFLT	5/23/2012	8:29	Molybdenum	ND	ug/L	10.0
801775-003	C-MAR-D-186	SW6010B	FLDFLT	5/23/2012	8:29	Selenium	ND	ug/L	10.0
801775-003	C-MAR-D-186	SW6020	FLDFLT	5/23/2012	8:29	Arsenic	2.1	ug/L	1.0
801775-003	C-MAR-D-186	SW6020	FLDFLT	5/23/2012	8:29	Chromium	ND	ug/L	1.0
801775-003	C-MAR-D-186	SW6020	FLDFLT	5/23/2012	8:29	Manganese	7.3	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801775-004	C-MAR-S-186	E120.1	NONE	5/23/2012	8:47	EC	920	umhos/cm	2.00
801775-004	C-MAR-S-186	E218.6	FLDFLT	5/23/2012	8:47	Chromium, hexavalent	ND	ug/L	0.20
801775-004	C-MAR-S-186	E300	NONE	5/23/2012	8:47	Nitrate as N	ND	mg/L	0.500
801775-004	C-MAR-S-186	SM2320B	NONE	5/23/2012	8:47	Alkalinity	128	mg/L	5.00
801775-004	C-MAR-S-186	SM2320B	NONE	5/23/2012	8:47	Bicarbonate	128	mg/L	5.00
801775-004	C-MAR-S-186	SM2320B	NONE	5/23/2012	8:47	Carbonate	ND	mg/L	5.00
801775-004	C-MAR-S-186	SM2540D	NONE	5/23/2012	8:47	Total Suspended Solids	ND	mg/L	10.0
801775-004	C-MAR-S-186	SM4500HB	NONE	5/23/2012	8:47	PH	7.74 J	pH	4.00
801775-004	C-MAR-S-186	SW6010B	NONE	5/23/2012	8:47	Iron	239	ug/L	20.0
801775-004	C-MAR-S-186	SW6010B	FLDFLT	5/23/2012	8:47	Iron	ND	ug/L	20.0
801775-004	C-MAR-S-186	SW6010B	FLDFLT	5/23/2012	8:47	Molybdenum	ND	ug/L	10.0
801775-004	C-MAR-S-186	SW6010B	FLDFLT	5/23/2012	8:47	Selenium	ND	ug/L	10.0
801775-004	C-MAR-S-186	SW6020	FLDFLT	5/23/2012	8:47	Arsenic	2.0	ug/L	1.0
801775-004	C-MAR-S-186	SW6020	FLDFLT	5/23/2012	8:47	Chromium	ND	ug/L	1.0
801775-004	C-MAR-S-186	SW6020	FLDFLT	5/23/2012	8:47	Manganese	8.4	ug/L	0.50
801775-005	C-NR1-D-186	E120.1	NONE	5/23/2012	10:28	EC	908	umhos/cm	2.00
801775-005	C-NR1-D-186	E218.6	FLDFLT	5/23/2012	10:28	Chromium, hexavalent	ND	ug/L	0.20
801775-005	C-NR1-D-186	E300	NONE	5/23/2012	10:28	Nitrate as N	ND	mg/L	0.500
801775-005	C-NR1-D-186	SM2320B	NONE	5/23/2012	10:28	Alkalinity	124	mg/L	5.00
801775-005	C-NR1-D-186	SM2320B	NONE	5/23/2012	10:28	Bicarbonate	124	mg/L	5.00
801775-005	C-NR1-D-186	SM2320B	NONE	5/23/2012	10:28	Carbonate	ND	mg/L	5.00
801775-005	C-NR1-D-186	SM2540D	NONE	5/23/2012	10:28	Total Suspended Solids	ND	mg/L	10.0
801775-005	C-NR1-D-186	SM4500HB	NONE	5/23/2012	10:28	PH	8.10	pH	4.00
801775-005	C-NR1-D-186	SW6010B	NONE	5/23/2012	10:28	Iron	ND	ug/L	20.0
801775-005	C-NR1-D-186	SW6010B	FLDFLT	5/23/2012	10:28	Iron	ND	ug/L	20.0
801775-005	C-NR1-D-186	SW6010B	FLDFLT	5/23/2012	10:28	Molybdenum	ND	ug/L	10.0
801775-005	C-NR1-D-186	SW6010B	FLDFLT	5/23/2012	10:28	Selenium	ND	ug/L	10.0
801775-005	C-NR1-D-186	SW6020	FLDFLT	5/23/2012	10:28	Arsenic	2.0	ug/L	1.0
801775-005	C-NR1-D-186	SW6020	FLDFLT	5/23/2012	10:28	Chromium	ND	ug/L	1.0
801775-005	C-NR1-D-186	SW6020	FLDFLT	5/23/2012	10:28	Manganese	0.76	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801775-006	C-NR1-S-186	E120.1	NONE	5/23/2012	10:42	EC	910	umhos/cm	2.00
801775-006	C-NR1-S-186	E218.6	FLDFLT	5/23/2012	10:42	Chromium, hexavalent	ND	ug/L	0.20
801775-006	C-NR1-S-186	E300	NONE	5/23/2012	10:42	Nitrate as N	ND	mg/L	0.500
801775-006	C-NR1-S-186	SM2320B	NONE	5/23/2012	10:42	Alkalinity	139	mg/L	5.00
801775-006	C-NR1-S-186	SM2320B	NONE	5/23/2012	10:42	Bicarbonate	139	mg/L	5.00
801775-006	C-NR1-S-186	SM2320B	NONE	5/23/2012	10:42	Carbonate	ND	mg/L	5.00
801775-006	C-NR1-S-186	SM2540D	NONE	5/23/2012	10:42	Total Suspended Solids	ND	mg/L	10.0
801775-006	C-NR1-S-186	SM4500HB	NONE	5/23/2012	10:42	PH	8.13	pH	4.00
801775-006	C-NR1-S-186	SW6010B	NONE	5/23/2012	10:42	Iron	ND	ug/L	20.0
801775-006	C-NR1-S-186	SW6010B	FLDFLT	5/23/2012	10:42	Iron	ND	ug/L	20.0
801775-006	C-NR1-S-186	SW6010B	FLDFLT	5/23/2012	10:42	Molybdenum	ND	ug/L	10.0
801775-006	C-NR1-S-186	SW6010B	FLDFLT	5/23/2012	10:42	Selenium	ND	ug/L	10.0
801775-006	C-NR1-S-186	SW6020	FLDFLT	5/23/2012	10:42	Arsenic	2.0	ug/L	1.0
801775-006	C-NR1-S-186	SW6020	FLDFLT	5/23/2012	10:42	Chromium	ND	ug/L	1.0
801775-006	C-NR1-S-186	SW6020	FLDFLT	5/23/2012	10:42	Manganese	0.78	ug/L	0.50
801775-007	C-NR3-D-186	E120.1	NONE	5/23/2012	11:11	EC	908	umhos/cm	2.00
801775-007	C-NR3-D-186	E218.6	FLDFLT	5/23/2012	11:11	Chromium, hexavalent	ND	ug/L	0.20
801775-007	C-NR3-D-186	E300	NONE	5/23/2012	11:11	Nitrate as N	ND	mg/L	0.500
801775-007	C-NR3-D-186	SM2320B	NONE	5/23/2012	11:11	Alkalinity	134	mg/L	5.00
801775-007	C-NR3-D-186	SM2320B	NONE	5/23/2012	11:11	Bicarbonate	134	mg/L	5.00
801775-007	C-NR3-D-186	SM2320B	NONE	5/23/2012	11:11	Carbonate	ND	mg/L	5.00
801775-007	C-NR3-D-186	SM2540D	NONE	5/23/2012	11:11	Total Suspended Solids	ND	mg/L	10.0
801775-007	C-NR3-D-186	SM4500HB	NONE	5/23/2012	11:11	PH	8.15	pH	4.00
801775-007	C-NR3-D-186	SW6010B	NONE	5/23/2012	11:11	Iron	ND	ug/L	20.0
801775-007	C-NR3-D-186	SW6010B	FLDFLT	5/23/2012	11:11	Iron	ND	ug/L	20.0
801775-007	C-NR3-D-186	SW6010B	FLDFLT	5/23/2012	11:11	Molybdenum	ND	ug/L	10.0
801775-007	C-NR3-D-186	SW6010B	FLDFLT	5/23/2012	11:11	Selenium	ND	ug/L	10.0
801775-007	C-NR3-D-186	SW6020	FLDFLT	5/23/2012	11:11	Arsenic	2.1	ug/L	1.0
801775-007	C-NR3-D-186	SW6020	FLDFLT	5/23/2012	11:11	Chromium	ND	ug/L	1.0
801775-007	C-NR3-D-186	SW6020	FLDFLT	5/23/2012	11:11	Manganese	0.76	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801775-008	C-NR3-S-186	E120.1	NONE	5/23/2012	11:25	EC	909	umhos/cm	2.00
801775-008	C-NR3-S-186	E218.6	FLDFLT	5/23/2012	11:25	Chromium, hexavalent	ND	ug/L	0.20
801775-008	C-NR3-S-186	E300	NONE	5/23/2012	11:25	Nitrate as N	ND	mg/L	0.500
801775-008	C-NR3-S-186	SM2320B	NONE	5/23/2012	11:25	Alkalinity	119	mg/L	5.00
801775-008	C-NR3-S-186	SM2320B	NONE	5/23/2012	11:25	Bicarbonate	119	mg/L	5.00
801775-008	C-NR3-S-186	SM2320B	NONE	5/23/2012	11:25	Carbonate	ND	mg/L	5.00
801775-008	C-NR3-S-186	SM2540D	NONE	5/23/2012	11:25	Total Suspended Solids	ND	mg/L	10.0
801775-008	C-NR3-S-186	SM4500HB	NONE	5/23/2012	11:25	PH	8.16	pH	4.00
801775-008	C-NR3-S-186	SW6010B	NONE	5/23/2012	11:25	Iron	ND	ug/L	20.0
801775-008	C-NR3-S-186	SW6010B	FLDFLT	5/23/2012	11:25	Iron	ND	ug/L	20.0
801775-008	C-NR3-S-186	SW6010B	FLDFLT	5/23/2012	11:25	Molybdenum	ND	ug/L	10.0
801775-008	C-NR3-S-186	SW6010B	FLDFLT	5/23/2012	11:25	Selenium	ND	ug/L	10.0
801775-008	C-NR3-S-186	SW6020	FLDFLT	5/23/2012	11:25	Arsenic	1.9	ug/L	1.0
801775-008	C-NR3-S-186	SW6020	FLDFLT	5/23/2012	11:25	Chromium	ND	ug/L	1.0
801775-008	C-NR3-S-186	SW6020	FLDFLT	5/23/2012	11:25	Manganese	0.70	ug/L	0.50
801775-009	C-NR4-D-186	E120.1	NONE	5/23/2012	11:51	EC	906	umhos/cm	2.00
801775-009	C-NR4-D-186	E218.6	FLDFLT	5/23/2012	11:51	Chromium, hexavalent	ND	ug/L	0.20
801775-009	C-NR4-D-186	E300	NONE	5/23/2012	11:51	Nitrate as N	ND	mg/L	0.500
801775-009	C-NR4-D-186	SM2320B	NONE	5/23/2012	11:51	Alkalinity	133	mg/L	5.00
801775-009	C-NR4-D-186	SM2320B	NONE	5/23/2012	11:51	Bicarbonate	133	mg/L	5.00
801775-009	C-NR4-D-186	SM2320B	NONE	5/23/2012	11:51	Carbonate	ND	mg/L	5.00
801775-009	C-NR4-D-186	SM2540D	NONE	5/23/2012	11:51	Total Suspended Solids	ND	mg/L	10.0
801775-009	C-NR4-D-186	SM4500HB	NONE	5/23/2012	11:51	PH	8.13	pH	4.00
801775-009	C-NR4-D-186	SW6010B	NONE	5/23/2012	11:51	Iron	ND	ug/L	20.0
801775-009	C-NR4-D-186	SW6010B	FLDFLT	5/23/2012	11:51	Iron	ND	ug/L	20.0
801775-009	C-NR4-D-186	SW6010B	FLDFLT	5/23/2012	11:51	Molybdenum	ND	ug/L	10.0
801775-009	C-NR4-D-186	SW6010B	FLDFLT	5/23/2012	11:51	Selenium	ND	ug/L	10.0
801775-009	C-NR4-D-186	SW6020	FLDFLT	5/23/2012	11:51	Arsenic	2.0	ug/L	1.0
801775-009	C-NR4-D-186	SW6020	FLDFLT	5/23/2012	11:51	Chromium	ND	ug/L	1.0
801775-009	C-NR4-D-186	SW6020	FLDFLT	5/23/2012	11:51	Manganese	0.78	ug/L	0.50

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801775-010	C-NR4-S-186	E120.1	NONE	5/23/2012	12:05	EC	905	umhos/cm	2.00
801775-010	C-NR4-S-186	E218.6	FLDFLT	5/23/2012	12:05	Chromium, hexavalent	ND	ug/L	0.20
801775-010	C-NR4-S-186	E300	NONE	5/23/2012	12:05	Nitrate as N	ND	mg/L	0.500
801775-010	C-NR4-S-186	SM2320B	NONE	5/23/2012	12:05	Alkalinity	120	mg/L	5.00
801775-010	C-NR4-S-186	SM2320B	NONE	5/23/2012	12:05	Bicarbonate	120	mg/L	5.00
801775-010	C-NR4-S-186	SM2320B	NONE	5/23/2012	12:05	Carbonate	ND	mg/L	5.00
801775-010	C-NR4-S-186	SM2540D	NONE	5/23/2012	12:05	Total Suspended Solids	ND	mg/L	10.0
801775-010	C-NR4-S-186	SM4500HB	NONE	5/23/2012	12:05	PH	8.15	pH	4.00
801775-010	C-NR4-S-186	SW6010B	NONE	5/23/2012	12:05	Iron	ND	ug/L	20.0
801775-010	C-NR4-S-186	SW6010B	FLDFLT	5/23/2012	12:05	Iron	ND	ug/L	20.0
801775-010	C-NR4-S-186	SW6010B	FLDFLT	5/23/2012	12:05	Molybdenum	ND	ug/L	10.0
801775-010	C-NR4-S-186	SW6010B	FLDFLT	5/23/2012	12:05	Selenium	ND	ug/L	10.0
801775-010	C-NR4-S-186	SW6020	FLDFLT	5/23/2012	12:05	Arsenic	1.9	ug/L	1.0
801775-010	C-NR4-S-186	SW6020	FLDFLT	5/23/2012	12:05	Chromium	ND	ug/L	1.0
801775-010	C-NR4-S-186	SW6020	FLDFLT	5/23/2012	12:05	Manganese	0.74	ug/L	0.50
801775-011	RRB-186	E120.1	NONE	5/23/2012	9:10	EC	908	umhos/cm	2.00
801775-011	RRB-186	E218.6	FLDFLT	5/23/2012	9:10	Chromium, hexavalent	ND	ug/L	0.20
801775-011	RRB-186	E300	NONE	5/23/2012	9:10	Nitrate as N	ND	mg/L	0.500
801775-011	RRB-186	SM2320B	NONE	5/23/2012	9:10	Alkalinity	130	mg/L	5.00
801775-011	RRB-186	SM2320B	NONE	5/23/2012	9:10	Bicarbonate	130	mg/L	5.00
801775-011	RRB-186	SM2320B	NONE	5/23/2012	9:10	Carbonate	ND	mg/L	5.00
801775-011	RRB-186	SM2540D	NONE	5/23/2012	9:10	Total Suspended Solids	ND	mg/L	10.0
801775-011	RRB-186	SM4500HB	NONE	5/23/2012	9:10	PH	8.16	pH	4.00
801775-011	RRB-186	SW6010B	NONE	5/23/2012	9:10	Iron	32.6	ug/L	20.0
801775-011	RRB-186	SW6010B	FLDFLT	5/23/2012	9:10	Iron	ND	ug/L	20.0
801775-011	RRB-186	SW6010B	FLDFLT	5/23/2012	9:10	Molybdenum	ND	ug/L	10.0
801775-011	RRB-186	SW6010B	FLDFLT	5/23/2012	9:10	Selenium	ND	ug/L	10.0
801775-011	RRB-186	SW6020	FLDFLT	5/23/2012	9:10	Arsenic	2.0	ug/L	1.0
801775-011	RRB-186	SW6020	FLDFLT	5/23/2012	9:10	Chromium	ND	ug/L	1.0
801775-011	RRB-186	SW6020	FLDFLT	5/23/2012	9:10	Manganese	2.9	ug/L	0.50

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.

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EXCELLENCE IN INDEPENDENT TESTING
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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.RM
P.O. Number: 423575.MP.02.RM
Release Number:

Laboratory No. 801775

Printed 6/27/2012
Revised

Samples Received on 5/23/2012 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-CON-D-186	801775-001	05/23/2012 09:41	Water
C-CON-S-186	801775-002	05/23/2012 09:55	Water
C-MAR-D-186	801775-003	05/23/2012 08:29	Water
C-MAR-S-186	801775-004	05/23/2012 08:47	Water
C-NR1-D-186	801775-005	05/23/2012 10:28	Water
C-NR1-S-186	801775-006	05/23/2012 10:42	Water
C-NR3-D-186	801775-007	05/23/2012 11:11	Water
C-NR3-S-186	801775-008	05/23/2012 11:25	Water
C-NR4-D-186	801775-009	05/23/2012 11:51	Water
C-NR4-S-186	801775-010	05/23/2012 12:05	Water
RRB-186	801775-011	05/23/2012 09:10	Water

Anions By I.C. - EPA 300.0 Batch 05AN12T

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Nitrate as Nitrogen	mg/L	05/24/2012 11:13	1.00	0.0270	0.500	ND
801775-002 Nitrate as Nitrogen	mg/L	05/24/2012 11:25	1.00	0.0270	0.500	ND
801775-003 Nitrate as Nitrogen	mg/L	05/24/2012 11:36	1.00	0.0270	0.500	ND
801775-004 Nitrate as Nitrogen	mg/L	05/24/2012 11:48	1.00	0.0270	0.500	ND
801775-005 Nitrate as Nitrogen	mg/L	05/24/2012 11:59	1.00	0.0270	0.500	ND
801775-006 Nitrate as Nitrogen	mg/L	05/24/2012 12:11	1.00	0.0270	0.500	ND
801775-007 Nitrate as Nitrogen	mg/L	05/24/2012 12:12	1.00	0.0270	0.500	ND
801775-008 Nitrate as Nitrogen	mg/L	05/24/2012 13:19	1.00	0.0270	0.500	ND
801775-009 Nitrate as Nitrogen	mg/L	05/24/2012 13:30	1.00	0.0270	0.500	ND
801775-010 Nitrate as Nitrogen	mg/L	05/24/2012 13:42	1.00	0.0270	0.500	ND
801775-011 Nitrate as Nitrogen	mg/L	05/24/2012 13:53	1.00	0.0270	0.500	ND

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Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 801775-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	ND	0.409	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

Matrix Spike — Lab ID = 801775-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.49	2.41(2.00)	104.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.04	4.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.00	3.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.00	3.00	99.9	90 - 110

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Alkalinity by SM 2320B Batch 05ALK12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	120.
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	120.
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-002 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	128
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	128
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-003 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	119
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	119
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-004 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	128
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	128
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-005 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	124
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	124
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-006 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	139
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	139
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-007 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	134
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	134
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-008 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	119
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	119
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-009 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	133
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	133
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-010 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	120.
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	120.
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND
801775-011 Alkalinity as CaCO3	mg/L	05/29/2012	1.00	1.68	5.00	130.
Bicarbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	130.
Carbonate (Calculated)	mg/L	05/29/2012	1.00	1.68	5.00	ND

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Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 801818-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	97.0	100.	97.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.	99.0	90 - 110

Matrix Spike — Lab ID = 801775-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	216	230.(100.)	86.0	75 - 125

Matrix Spike Duplicate — Lab ID = 801775-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	216	230.(100.)	86.0	75 - 125

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Specific Conductivity - EPA 120.1

Batch 05EC12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	907
801775-002 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	899
801775-003 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	919
801775-004 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	920.
801775-005 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	908

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 801753-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	901	901	0.00	0 - 10

Duplicate — Lab ID = 801775-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	908	908	0.00	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	984	998	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	990.	998	99.2	90 - 110

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Specific Conductivity - EPA 120.1

Batch 05EC12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-006 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	910.
801775-007 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	908
801775-008 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	909
801775-009 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	906
801775-010 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	905
801775-011 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	908

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 801775-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	908	908	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	987	998	98.9	90 - 110

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Metals by EPA 6010B, Total

Batch 061512-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Iron	ug/L	06/15/2012 12:04	1.00	1.70	20.0	ND
801775-002 Iron	ug/L	06/15/2012 12:22	1.00	1.70	20.0	ND
801775-003 Iron	ug/L	06/15/2012 12:28	1.00	1.70	20.0	198.
801775-004 Iron	ug/L	06/15/2012 12:33	1.00	1.70	20.0	239.
801775-005 Iron	ug/L	06/15/2012 12:55	1.00	1.70	20.0	ND
801775-006 Iron	ug/L	06/15/2012 13:01	1.00	1.70	20.0	ND
801775-007 Iron	ug/L	06/15/2012 13:07	1.00	1.70	20.0	ND
801775-008 Iron	ug/L	06/15/2012 13:13	1.00	1.70	20.0	ND
801775-009 Iron	ug/L	06/15/2012 13:19	1.00	1.70	20.0	ND
801775-010 Iron	ug/L	06/15/2012 13:25	1.00	1.70	20.0	ND
801775-011 Iron	ug/L	06/15/2012 13:31	1.00	1.70	20.0	32.6

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2140	2000	107.	85 - 115

Matrix Spike — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	2030	2000(2000)	102.	75 - 125

MRCCS - Secondary

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	5080	5000	102.	90 - 110

MRCVS - Primary

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

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Chrome VI by EPA 218.6

Batch 05CrH12U

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Chromium, Hexavalent	ug/L	05/30/2012 10:52	1.00	0.0250	0.20	ND
801775-002 Chromium, Hexavalent	ug/L	05/30/2012 11:02	1.00	0.0250	0.20	ND
801775-003 Chromium, Hexavalent	ug/L	05/30/2012 11:24	1.00	0.0250	0.20	ND
801775-004 Chromium, Hexavalent	ug/L	05/30/2012 11:35	1.00	0.0250	0.20	ND
801775-005 Chromium, Hexavalent	ug/L	05/30/2012 12:47	1.00	0.0250	0.20	ND
801775-006 Chromium, Hexavalent	ug/L	05/30/2012 12:58	1.00	0.0250	0.20	ND
801775-007 Chromium, Hexavalent	ug/L	05/30/2012 13:08	1.00	0.0250	0.20	ND
801775-008 Chromium, Hexavalent	ug/L	05/30/2012 13:19	1.00	0.0250	0.20	ND
801775-009 Chromium, Hexavalent	ug/L	05/30/2012 14:11	1.00	0.0250	0.20	ND
801775-010 Chromium, Hexavalent	ug/L	05/30/2012 14:54	1.00	0.0250	0.20	ND
801775-011 Chromium, Hexavalent	ug/L	05/30/2012 15:05	1.00	0.0250	0.20	ND

Method Blank

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

Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0420	0.0458	8.66	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	97.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.1	90 - 110

Matrix Spike — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.04(1.00)	94.0	90 - 110

Matrix Spike — Lab ID = 801775-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.980	1.04(1.00)	94.3	90 - 110

Matrix Spike — Lab ID = 801775-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.5	90 - 110

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Matrix Spike — Lab ID = 801775-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.2	90 - 110

Matrix Spike — Lab ID = 801775-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.992	1.04(1.00)	95.2	90 - 110

Matrix Spike — Lab ID = 801775-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	96.3	90 - 110

Matrix Spike — Lab ID = 801775-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.999	1.04(1.00)	95.9	90 - 110

Matrix Spike — Lab ID = 801775-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	97.0	90 - 110

Matrix Spike — Lab ID = 801775-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	97.6	90 - 110

Matrix Spike — Lab ID = 801775-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.993	1.03(1.00)	96.4	90 - 110

Matrix Spike — Lab ID = 801775-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.994	1.04(1.00)	95.4	90 - 110

Matrix Spike — Lab ID = 801839-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.837	1.00(1.00)	83.7	90 - 110

Matrix Spike — Lab ID = 801839-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.74	5.00(5.00)	94.7	90 - 110

Matrix Spike — Lab ID = 801840-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.26	1.27(1.00)	99.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.4	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 061712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Chromium	ug/L	06/17/2012 20:53	5.00	0.195	1.0	ND
801775-002 Chromium	ug/L	06/17/2012 21:42	5.00	0.195	1.0	ND
801775-003 Chromium	ug/L	06/17/2012 21:50	5.00	0.195	1.0	ND
801775-004 Chromium	ug/L	06/17/2012 21:57	5.00	0.195	1.0	ND
801775-005 Chromium	ug/L	06/17/2012 22:04	5.00	0.195	1.0	ND
801775-006 Chromium	ug/L	06/17/2012 22:11	5.00	0.195	1.0	ND
801775-007 Chromium	ug/L	06/17/2012 22:18	5.00	0.195	1.0	ND
801775-008 Chromium	ug/L	06/17/2012 22:25	5.00	0.195	1.0	ND
801775-009 Chromium	ug/L	06/17/2012 22:32	5.00	0.195	1.0	ND
801775-010 Chromium	ug/L	06/17/2012 22:39	5.00	0.195	1.0	ND
801775-011 Chromium	ug/L	06/17/2012 22:46	5.00	0.195	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.188	0.200	93.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.1	100.	98.1	85 - 115

Matrix Spike — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.5	100.(100.)	94.5	75 - 125

Matrix Spike Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	93.8	100.(100.)	93.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 061912C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Arsenic	ug/L	06/20/2012 04:02	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/20/2012 04:02	1.00	0.0540	0.50	0.67
801775-002 Arsenic	ug/L	06/20/2012 04:09	1.00	0.0530	1.0	1.9
Manganese	ug/L	06/20/2012 04:09	1.00	0.0540	0.50	0.68
801775-003 Arsenic	ug/L	06/20/2012 04:17	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/20/2012 04:17	1.00	0.0540	0.50	7.3
801775-004 Arsenic	ug/L	06/20/2012 04:24	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/20/2012 04:24	1.00	0.0540	0.50	8.4
801775-005 Arsenic	ug/L	06/20/2012 04:31	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/20/2012 04:31	1.00	0.0540	0.50	0.76
801775-006 Arsenic	ug/L	06/20/2012 04:38	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/20/2012 04:38	1.00	0.0540	0.50	0.78
801775-007 Arsenic	ug/L	06/20/2012 04:45	1.00	0.0530	1.0	2.1
Manganese	ug/L	06/20/2012 04:45	1.00	0.0540	0.50	0.76
801775-008 Arsenic	ug/L	06/20/2012 04:52	1.00	0.0530	1.0	1.9
Manganese	ug/L	06/20/2012 04:52	1.00	0.0540	0.50	0.70
801775-009 Arsenic	ug/L	06/20/2012 04:59	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/20/2012 04:59	1.00	0.0540	0.50	0.78
801775-010 Arsenic	ug/L	06/20/2012 05:07	1.00	0.0530	1.0	1.9
Manganese	ug/L	06/20/2012 05:07	1.00	0.0540	0.50	0.74
801775-011 Arsenic	ug/L	06/20/2012 05:35	1.00	0.0530	1.0	2.0
Manganese	ug/L	06/20/2012 05:35	1.00	0.0540	0.50	2.9

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.186	0.200	92.8	70 - 130
Manganese	ug/L	1.00	0.190	0.200	95.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	98.8	100.	98.8	85 - 115
Manganese	ug/L	5.00	93.9	100.	93.9	85 - 115

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Matrix Spike — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	98.1	102.(100.)	95.8	75 - 125
Manganese	ug/L	5.00	92.4	101.(100.)	91.7	75 - 125

Matrix Spike Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	101.	102.(100.)	98.5	75 - 125
Manganese	ug/L	5.00	91.2	101.(100.)	90.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.0	10.0	100.	90 - 110
Manganese	ug/L	1.00	9.31	10.0	93.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.78	10.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.38	10.0	93.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.36	10.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.38	10.0	93.8	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0.00		

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Metals by EPA 6010B, Dissolved Batch 062012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Iron	ug/L	06/20/2012 12:32	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 12:32	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 12:32	1.00	3.22	10.0	ND
801775-002 Iron	ug/L	06/20/2012 13:24	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:24	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:24	1.00	3.22	10.0	ND
801775-003 Iron	ug/L	06/20/2012 13:29	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:29	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:29	1.00	3.22	10.0	ND
801775-004 Iron	ug/L	06/20/2012 13:35	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:35	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:35	1.00	3.22	10.0	ND
801775-005 Iron	ug/L	06/20/2012 13:40	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:40	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:40	1.00	3.22	10.0	ND
801775-006 Iron	ug/L	06/20/2012 13:46	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:46	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:46	1.00	3.22	10.0	ND
801775-007 Iron	ug/L	06/20/2012 13:51	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:51	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:51	1.00	3.22	10.0	ND
801775-008 Iron	ug/L	06/20/2012 13:57	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 13:57	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 13:57	1.00	3.22	10.0	ND
801775-009 Iron	ug/L	06/20/2012 14:02	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 14:02	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 14:02	1.00	3.22	10.0	ND
801775-010 Iron	ug/L	06/20/2012 14:08	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 14:08	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 14:08	1.00	3.22	10.0	ND
801775-011 Iron	ug/L	06/20/2012 14:30	1.00	1.34	20.0	ND
Molybdenum	ug/L	06/20/2012 14:30	1.00	4.02	10.0	ND
Selenium	ug/L	06/20/2012 14:30	1.00	3.22	10.0	ND

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Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Selenium	ug/L	1.00	ND	0.00	0	0 - 20
Molybdenum	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	114.	100.	114.	85 - 115
Selenium	ug/L	1.00	91.8	100.	91.8	85 - 115
Molybdenum	ug/L	1.00	95.4	100.	95.4	85 - 115

Matrix Spike — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	111.	100.(100.)	111.	75 - 125
Selenium	ug/L	1.00	91.0	100.(100.)	91.0	75 - 125
Molybdenum	ug/L	1.00	98.3	100.(100.)	98.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5170	5000	103.	90 - 110
Selenium	ug/L	1.00	4930	5000	98.6	90 - 110
Molybdenum	ug/L	1.00	4840	5000	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5280	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5480	5000	110.	90 - 110

MRCVS - Primary

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

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pH by SM 4500-H B Batch 05PH12S

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
801775-001 pH	pH	05/24/2012 09:50	1.00	0.0590	4.00	8.06	J
801775-002 pH	pH	05/24/2012 09:53	1.00	0.0590	4.00	8.06	
801775-003 pH	pH	05/24/2012 09:55	1.00	0.0590	4.00	7.78	J
801775-004 pH	pH	05/24/2012 10:00	1.00	0.0590	4.00	7.74	J
801775-005 pH	pH	05/24/2012 10:02	1.00	0.0590	4.00	8.10	
801775-006 pH	pH	05/24/2012 10:05	1.00	0.0590	4.00	8.13	
801775-007 pH	pH	05/24/2012 10:12	1.00	0.0590	4.00	8.15	
801775-008 pH	pH	05/24/2012 10:15	1.00	0.0590	4.00	8.16	
801775-009 pH	pH	05/24/2012 10:17	1.00	0.0590	4.00	8.13	
801775-010 pH	pH	05/24/2012 10:20	1.00	0.0590	4.00	8.15	
801775-011 pH	pH	05/24/2012 10:22	1.00	0.0590	4.00	8.16	

Duplicate — Lab ID = 801775-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.14	8.13	0.123	0 - 20

Duplicate — Lab ID = 801775-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.17	8.16	0.122	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.04	7.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.05	7.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100.	90 - 110

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Total Suspended Solids by SM 2540 D

Batch 05TSS12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801775-001 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-002 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-003 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-004 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-005 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-006 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-007 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-008 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-009 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-010 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND
801775-011 Total Suspended Solids	mg/L	05/24/2012	1.00	0.217	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Total Suspended Solids	mg/L	1.00	ND

Duplicate — Lab ID = 801775-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	98.0	100.	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	101	100.	101	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 05TSS12J

Date Analyzed: 05/24/12

Dish Number	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
D20	BLK	1000	1.4106	1.4106	1.4106	0.0000	No	0.0000	0.0	2.5	ND
D42	801753-11	500	1.4299	1.4305	1.4305	0.0000	No	0.0006	1.2	5.0	ND
D43	801753-12	500	1.4328	1.4331	1.4331	0.0000	No	0.0003	0.6	5.0	ND
D44	801775-1	500	1.4337	1.4337	1.4337	0.0000	No	0.0000	0.0	5.0	ND
D45	801775-2	500	1.4339	1.4339	1.4339	0.0000	No	0.0000	0.0	5.0	ND
D46	801775-3	500	1.4424	1.4459	1.4459	0.0000	No	0.0035	7.0	5.0	7.0
D47	801775-4	500	1.4224	1.4264	1.4264	0.0000	No	0.0040	8.0	5.0	8.0
D48	801775-5	500	1.4332	1.4332	1.4332	0.0000	No	0.0000	0.0	5.0	ND
D49	801775-6	500	1.4406	1.4406	1.4406	0.0000	No	0.0000	0.0	5.0	ND
D50	801775-7	500	1.4321	1.4321	1.4321	0.0000	No	0.0000	0.0	5.0	ND
D51	801775-8	500	1.4225	1.4225	1.4225	0.0000	No	0.0000	0.0	5.0	ND
D52	801775-8D	500	1.4373	1.4373	1.4373	0.0000	No	0.0000	0.0	5.0	ND
D53	801775-9	500	1.4378	1.4378	1.4378	0.0000	No	0.0000	0.0	5.0	ND
D54	801775-10	500	1.4300	1.4300	1.43	0.0000	No	0.0000	0.0	5.0	ND
D55	801775-11	500	1.4388	1.4395	1.4395	0.0000	No	0.0007	1.4	5.0	ND
D56	801723-1	1000	1.4283	1.4419	1.4419	0.0000	No	0.0136	13.6	2.5	13.6
D57	801730	1000	1.4304	1.4371	1.4371	0.0000	No	0.0067	6.7	2.5	6.7
D58	801731	1000	1.4339	1.4721	1.4721	0.0000	No	0.0382	38.2	2.5	38.2
D59	801732	300	1.4284	1.4398	1.4398	0.0000	No	0.0114	38.0	8.3	38.0
D60	801732D	300	1.4241	1.4352	1.4352	0.0000	No	0.0111	37.0	8.3	37.0
D61	801767	500	1.4350	1.4735	1.4735	0.0000	No	0.0385	77.0	5.0	77.0
D21	LCS-1	100	1.4219	1.4317	1.4317	0.0000	No	0.0098	98.0	25.0	98.0
D22	LCS-2	100	1.4372	1.4473	1.4473	0.0000	No	0.0101	101.0	25.0	101.0

Calculation as follows:

Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 10^6$

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.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	98	100	98.0%	90-110%	Yes
LCSD	101	100	101.0%	90-110%	Yes

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801775-8	0	0	#DIV/0!	≤5%	#DIV/0!
801732	0.0114	0.0111	1.3%	5%	Yes

LCS Recovery

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

$$\%\ Difference\ =\ \frac{|A\ or\ B - C|}{C}\ x\ 100$$

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

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

GAUTAM
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Tss_2011

TRUESDAIL LABORATORIES, INC.

Alkalinity by SM 2320B
Calculations

Analytical Batch: 05ALK12I
Matrix: Water
Date of Analysis: 5/29/2012

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	5.11	50	0.02		0.0	0.00		0.0	5	ND	ND	ND	ND	
801775-1	8.23	50	0.02		0.0	6.00		120.0	5	120.0	120.0	ND	ND	
801775-2	8.25	50	0.02		0.0	6.40		128.0	5	128.0	128.0	ND	ND	
801775-3	8.04	50	0.02		0.0	5.95		119.0	5	119.0	119.0	ND	ND	
801775-4	8.05	50	0.02		0.0	6.40		128.0	5	128.0	128.0	ND	ND	
801775-5	8.30	50	0.02		0.0	6.20		124.0	5	124.0	124.0	ND	ND	
801775-6	8.27	50	0.02		0.0	6.95		139.0	5	139.0	139.0	ND	ND	
801775-7	8.28	50	0.02		0.0	6.70		134.0	5	134.0	134.0	ND	ND	
801775-8	8.28	50	0.02		0.0	5.95		119.0	5	119.0	119.0	ND	ND	
801775-9	8.26	50	0.02		0.0	6.65		133.0	5	133.0	133.0	ND	ND	
801775-10	8.29	50	0.02		0.0	6.00		120.0	5	120.0	120.0	ND	ND	
801775-11	8.30	50	0.02	0.0	0.0	6.50		130.0	5	130.0	130.0	ND	ND	
801818	7.15	50	0.02		0.0	0.20		4.0	5	ND	ND	ND	ND	
801818 DUP	7.18	50	0.02		0.0	0.20		4.0	5	ND	ND	ND	ND	
801775-11 MS	9.56	50	0.02	2.5	49.0	10.80		216.0	5	216.0	118.0	98	ND	
801775-11 MSD	9.58	50	0.02	2.5	49.0	10.80		216.0	5	216.0	118.0	98	ND	
LCS	10.18	50	0.02	2.2	44.0	4.85		97.0	5	97.0	9.0	88	ND	
LCSD	10.38	50	0.02	2.3	46.0	4.95		99.0	5	99.0	7.0	92	ND	

Calculations as follows:

T or P = $\left(\frac{A \times N \times 50000}{mL\ sample}\right)$

Where:

T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Low Alkalinity: as mg/L CaCO3 = $\frac{(2 \times B - C) \times N \times 50000}{mL\ sample}$

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	Accetance Limit	QC Within Control?
LCS	97	100	97.0%	90-110	Yes
LCSD	99	100	99.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
801818	4	4	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?
801775-11	130	1	100	100	216	230.00	86%	75-125	Yes	0.0%	≤20%	Yes
	130	1	100	100	216	230.00	86%		Yes			

048

Melissa S.
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

052912I

801775

CH2MHILL

CHAIN OF CUSTODY RECORD

5/23/2012 2:17:03 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-186
Turnaround Time 10 Days
Shipping Date: 5/23/2012
COC Number: 2

				Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C			
				Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA			
				Holding Time:	28	28	180	180	180	2	2	2	2	2			
					Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (6020A-FF) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)		Number of Containers	COMMENTS
		DATE	TIME	Matrix													
1	C-CON-D-186	5/23/2012	9:41	Water	X		X	X	X	X	X	X	X	X		9	
2	C-CON-S-186	5/23/2012	9:55	Water	X		X	X	X	X	X	X	X	X		9	
3	C-MAR-D-186	5/23/2012	8:29	Water	X		X	X	X	X	X	X	X	X		9	pH=2
4	C-MAR-S-186	5/23/2012	8:47	Water	X		X	X	X	X	X	X	X	X		9	
	C-MW-82-186	5/23/2012	10:18	Water		X										1	Hold
	C-MW-83-186	5/23/2012	11:00	Water		X										1	Hold
5	C-NR1-D-186	5/23/2012	10:28	Water	X		X	X	X	X	X	X	X	X		9	
6	C-NR1-S-186	5/23/2012	10:42	Water	X		X	X	X	X	X	X	X	X		9	
7	C-NR3-D-186	5/23/2012	11:11	Water	X		X	X	X	X	X	X	X	X		9	
8	C-NR3-S-186	5/23/2012	11:25	Water	X		X	X	X	X	X	X	X	X		9	pH=2
9	C-NR4-D-186	5/23/2012	11:51	Water	X		X	X	X	X	X	X	X	X		9	
10	C-NR4-S-186	5/23/2012	12:05	Water	X		X	X	X	X	X	X	X	X		9	
	RMP-AB2-186	5/23/2012	12:15	Water		X										1	Hold
11	RRB-186	5/23/2012	9:10	Water	X		X	X	X	X	X	X	X	X		9	pH=2

102

* Where supplied w/ multiple Cr6 + diss. metals bottles, please analyze 1 + hold 2

Rec'd 05/23/12
~~SHA~~ 801775

ALERT II Level III QC

pH for 6020A/6010B

Signatures	Date/Time
Approved by	
Sampled by	
Relinquished by	5-23-12 1530
Received by	B. Dayag
Relinquished by	5-23-12 1530
Received by	B. Dayag 2030
	Linda, TLI 5/24/12 20:30

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:

May 22-24, 2012

Report Copy to

Shawn Duffy
(530) 229-3303

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
5/24/12	80775-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1714	<1	<2	5-22-12	BE	NO	NO
80 1715 (DUP)	↓	↓	↓	↓	Yes	30 to A
80 1725					NO	NO
80 1726					↓	↓
80 1727						
80 1728	↓					
80 1729	>1				Yes	30 to A
80 1730	↓				↓	↓
80 1731						
D 80 1747 (1-8) (1-7)	<1	<2	5-23-12	BE	YES	30 to A
80 1750	↓	>2	↓	↓	↓	YES 10:00
TD 80 1751 (1-3)		↓				need F. / +
80 1752 (1-4; 6-7)		<2				
TD 80 1753 (1-14)	↓	↓	↓	↓	↓	↓
80 1775 (1-11) TD	<1	<2	5-24-12	BE	YES	30 to A
80 1737 (1-3	↓	>2	↓	↓	NO	YES 11:00 AM
80 1764 (10-12)		↓			↓	"
80 1767		<2				NO
80 1790 (1-10)		↓				↓
80 1791 (1-10)						
80 1792 (1-10)						
80 1793 (1-72)	↓	>2	↓	↓	↓	YES 5-27-12 18
80 1715	<1	>2	3/25/12	[illegible]	—	Yes 5:30 pm using HCl per Client request
80 1747 (1-7)	↓	↓	↓	↓	↓	↓
80 1799	<1	>2	3/29/12	BE	NO	YES 18:00
80 1818	<1	<2				NO
80 1826	↓	↓				↓
80 1827	↓	↓	↓	↓	↓	↓
80 1839 (D)	<1	<2	5-30-12	BE	YES	30 to A
80 1840 (T)	↓	>2			↓	YES 14:00
80 1841 (1-2)	>1	<2				↓
80 1845 (1-12)	<1	>2			NO	YES 18:30
80 1848	>1	<2			YES	30 to A
80 1849 (1-12)	<1	>2			NO	YES 18:30
80 1860 (1-3)	<1	>2	5/31/12	KK	NO	YES @ 0 ppm BE 5-31-12
80 1871	>1	<2 BE 5-31-12		BE	YES	30 to A YES 6:00
80 1853 (1-5)	<1	<2	6-1-12	BE	NO	NO
80 1892	<1	<2	6-5-12	BE	NO	NO
80 1893	↓	↓	↓	↓	↓	↓
80 1898 (1-2; 4)		>2				YES 11:00
80 1910-6		↓			↓	↓
80 1907		<2			YES	30 to A
80 1908		↓			↓	↓
80 1909 (1-3; 5-7)					↓	↓
80 1912 (1-10)					NO	NO
80 1913 (1-10	↓	↓	↓	↓	↓	↓
80 1914	>1	<2			YES	30 to A
80 1915	<1	↓			NO	NO
80 1917	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801775

Date Delivered: 05 / 23 / 12 **Time:** 20:30 **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?* ☒ Yes ☐ No ☐ N/A
   Temperature (if yes)? 4.2° C
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?* ☒ Yes ☐ No ☐ N/A
    Preserved (if yes) by: ☒ **Truesdail** ☐ Client
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?* ☒ Yes ☐ No ☐ N/A
    If not, notify Project Manager.
14. *Have Project due dates been checked and accepted?* ☒ Yes ☐ No ☐ N/A
    Turn Around Time (TAT): ☐ **RUSH** ☒ Std
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:* L. Shaberning

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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June 12, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-186-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 801839

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-186-Q2 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 May 29, 2012, 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.

No 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.

Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 801839
Date Received: May 29, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801839-001	MW-66BR-270-186	E218.6	FLDFLT	5/24/2012	7:25	Chromium, hexavalent	ND	ug/L	1.0
801839-001	MW-66BR-270-186	SW6020	FLDFLT	5/24/2012	7:25	Chromium	1.1	ug/L	1.0

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.

004

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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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.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 801839

Printed 6/12/2012

Samples Received on 5/29/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-66BR-270-186	801839-001	05/24/2012 07:25	Water

Chrome VI by EPA 218.6

Batch 05CrH12U

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801839-001 Chromium, Hexavalent	ug/L	05/30/2012 17:14	5.00	0.125	1.0	ND

Method Blank

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

Duplicate — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0420	0.0458	8.66	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	97.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.1	90 - 110

Matrix Spike — Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.04(1.00)	94.0	90 - 110

Matrix Spike — Lab ID = 801775-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.980	1.04(1.00)	94.3	90 - 110

Matrix Spike — Lab ID = 801775-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.5	90 - 110

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Matrix Spike — Lab ID = 801775-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.2	90 - 110

Matrix Spike — Lab ID = 801775-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.992	1.04(1.00)	95.2	90 - 110

Matrix Spike — Lab ID = 801775-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	96.3	90 - 110

Matrix Spike — Lab ID = 801775-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.999	1.04(1.00)	95.9	90 - 110

Matrix Spike — Lab ID = 801775-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	97.0	90 - 110

Matrix Spike — Lab ID = 801775-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	97.6	90 - 110

Matrix Spike — Lab ID = 801775-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.993	1.03(1.00)	96.4	90 - 110

Matrix Spike — Lab ID = 801775-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.994	1.04(1.00)	95.4	90 - 110

Matrix Spike — Lab ID = 801839-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.837	1.00(1.00)	83.7	90 - 110

Matrix Spike — Lab ID = 801839-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.74	5.00(5.00)	94.7	90 - 110

Matrix Spike — Lab ID = 801840-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.26	1.27(1.00)	99.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.4	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 060712D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801839-001 Chromium	ug/L	06/08/2012 12:52	5.00	0.195	1.0	1.1

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.160	0.200	79.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.4	100.	94.4	85 - 115

Matrix Spike — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	90.4	100.(100.)	90.4	75 - 125

Matrix Spike Duplicate — Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	92.5	100.(100.)	92.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.08	10.0	90.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	11.0	10.0	110.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.8	10.0	108.	90 - 110

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Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.04	10.0	90.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	8.92	10.0	89.2	80 - 120

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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.

801839

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/24/2012 8:13:27 AM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/29/2012
COC Number: 44

Rec'd 05/29/12
S-128 801839

	DATE	TIME	Matrix	Container: 250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (E218.6) Field Filtered	Container: 500 ml Poly; Preservatives: HNO3, 4°C; Filtered: Field; Holding Time: 180; Metals (6020AFF) Field Filtered Chromium	Number of Containers	COMMENTS
MW-66BR-270-186	5/24/2012	7:25	Water	X	X	2	pH=2
					TOTAL NUMBER OF CONTAINERS	2	6020A

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

	Signatures	Date/Time
Approved by		5-29-12
Sampled by		1525
Relinquished by		5-29-12 15:25
Received by		5-29-12 21:00
Relinquished by		5/29/12 21:00
Received by	Linda, TLI	

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:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

109

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
5/30/12	801840	7	2 mL	9.5	10 Am	GW
5/30/12	801839	9.5	N/A	N/A	N/A	GW
5/30/12	801840	7	1mL	9.5	16:00	MM

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

GW 6/1/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)	
80 1714	<1	<2	5-22-12	BE	NO	NO	
80 1715 (DUP)	↓	↓	↓	↓	Yes	30 of A	
80 1725					NO	NO	
80 1726					↓	↓	
80 1727							
80 1728	↓						
80 1729	>1				Yes	30 of A	
80 1730	↓				↓	↓	
80 1731							
D 80 1747 (1-8) (1-7)	<1	<2	5-23-12	BE	YES	30 of A	
80 1750	↓	>2	↓	↓	↓	↓ YES 10:00	
T D 80 1751 (1-3		↓					need R./T
80 1752 (1-4, 6-7)		<2					
T D 80 1753 (1-14)		↓					
80 1775 (1-11) T D	<1	<2	5-24-12	BE	YES	30 of A	
80 1737 (1-3	↓	>2	↓	↓	↓	YES 11:00 AM	
80 1764 (10-12)		↓				↓ "	
80 1767		<2				NO	
80 1790 (1-10)		↓				↓	
80 1791 (1-10)							
80 1792 (1-10)							
80 1793 (1-12)	↓	↓	↓	↓	↓	YES 5-27-12 18	
80 1715	<1	>2	5/25/12	[illegible]	—	Yes 5:30 pm	using HCl per client request
80 1747 (1-7)	↓	↓	↓	↓	↓	↓	
80 1799	<1	>2	5/29/12	BE	NO	YES 18:00	
80 1818	<1	<2	↓	↓	↓	NO	
80 1826	↓	↓				↓	
80 1827	↓	↓					
80 1839 (D)	<1	<2	5-30-12	BE	YES	30 of A	
80 1840 (T)	↓	>2				↓ YES 14:00	
80 1841 (1-2)	>1	<2			↓		
80 1845 (1-12)	<1	>2			NO	YES 18:30	
80 1848	>1	<2			YES	30 of A	
80 1849 (1-12)	<1	>2			NO	YES 18:30	
80 1860 (1-3)	<1	>2	5/31/12	KK	NO	YES 6pm	BE 5-31-12
80 1871	>1	<2 ~~>2~~ BE	5.31.12	BE	YES	30 of A ~~YES~~ 6:00	
80 1883 (1-5)	<1	<2	6-1-12	BE	NO	NO	
80 1892	<1	<2	6-5-12	BE	NO	NO	
80 1893	↓	↓	↓	↓	↓	↓	
80 1898 (1-2 4-4)		>2				YES 11:00	
80 1910-6		↓			↓	↓	
80 1907		<2			YES	30 of A	
80 1908		↓			↓	↓	
80 1909 (1-3 5-7)					↓		
80 1912 (1-10)					NO	NO	
80 1913 (1-10					↓	↓	
80 1914	↓	<2			YES	30 of A	
80 1915	<1	↓			NO	NO	
80 1917	↓				↓	↓	

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801839

Date Delivered: 05/29/12 **Time:** 2:00 **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)? 4.8° 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

ALERT !! Level IV QC

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: L. Shabecoff

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www.truesdail.com

June 21, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-195, GROUNDWATER MONITORING PROJECT, TLI NO.: 801945

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-195 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, pH, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, 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 on June 5, 2012, 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.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy.

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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(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
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 424973.01.DM

Laboratory No.: 801945
Date: June 21, 2012
Collected: June 5, 2012
Received: June 5, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 4500-H B	pH	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

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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.: 801945
Date Received: June 5, 2012

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801945-001	PE-01-195	E120.1	NONE	6/5/2012	10:00	EC	4960	umhos/cm	2.00
801945-001	PE-01-195	E200.8	LABFLT	6/5/2012	10:00	Chromium	6.8	ug/L	1.0
801945-001	PE-01-195	E218.6	LABFLT	6/5/2012	10:00	Chromium, hexavalent	6.5	ug/L	0.20
801945-001	PE-01-195	SM2540C	NONE	6/5/2012	10:00	Total Dissolved Solids	2840	mg/L	125
801945-001	PE-01-195	SM4500HB	NONE	6/5/2012	10:00	PH	7.36	pH	4.00
801945-002	TW-03D-195	E120.1	NONE	6/5/2012	10:00	EC	8370	umhos/cm	2.00
801945-002	TW-03D-195	E200.8	LABFLT	6/5/2012	10:00	Chromium	906	ug/L	2.0
801945-002	TW-03D-195	SM2540C	NONE	6/5/2012	10:00	Total Dissolved Solids	4760	mg/L	250
801945-002	TW-03D-195	SM3500-CrB	LABFLT	6/5/2012	10:00	Chromium, hexavalent	922	ug/L	262
801945-002	TW-03D-195	SM4500HB	NONE	6/5/2012	10:00	PH	7.18	pH	4.00

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01 will have two (2) significant figures.
Result above or equal to 0.01 will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

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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: 424973.01.DM
P.O. Number: 424973.01.DM
Release Number:

Laboratory No. 801945

Printed 6/21/2012

Samples Received on 6/5/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-195	801945-001	06/05/2012 10:00	Water
TW-03D-195	801945-002	06/05/2012 10:00	Water

Specific Conductivity - EPA 120.1

Batch 06EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Specific Conductivity	umhos/cm	06/07/2012	1.00	0.116	2.00	4960
801945-002 Specific Conductivity	umhos/cm	06/07/2012	1.00	0.116	2.00	8370

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 801945-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8370	8370	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	709	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	981	998	98.3	90 - 110

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Chrome VI by EPA 218.6

Batch 06CrH12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Chromium, Hexavalent	ug/L	06/06/2012 12:24	1.00	0.0250	0.20	6.5

Method Blank

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

Duplicate — Lab ID = 801948-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.40	4.43	0.577	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	100.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 110

Matrix Spike — Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.12(1.00)	92.5	90 - 110

Matrix Spike — Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1740	1750(1000)	98.9	90 - 110

Matrix Spike — Lab ID = 801945-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.3	16.5(10.0)	98.2	90 - 110

Matrix Spike — Lab ID = 801948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.43(5.00)	98.2	90 - 110

Matrix Spike — Lab ID = 801948-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.50	8.68(5.00)	96.4	90 - 110

Matrix Spike — Lab ID = 801948-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.91	8.06(5.00)	97.0	90 - 110

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Chromium, Hexavalent by SM 3500-Cr B

Batch 06CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-002 Chromium, Hexavalent	ug/L	06/11/2012 18:43	26.2	39.3	262	922.

Method Blank

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

Duplicate — Lab ID = 801945-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	952.	922	3.25	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	100.	100.	100.	90 - 110

Matrix Spike — Lab ID = 801945-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	3580	3540(2620)	101.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.7	60.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.7	60.0	101.	90 - 110

pH by SM 4500-H B

Batch 06PH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 pH	pH	06/06/2012 09:45	1.00	0.0780	4.00	7.36
801945-002 pH	pH	06/06/2012 09:48	1.00	0.0780	4.00	7.18

Duplicate — Lab ID = 801945-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.19	7.18	0.139	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.01	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100.	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 6/21/2012

Total Dissolved Solids by SM 2540 C

Batch 06TDS12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Total Dissolved Solids	mg/L	06/06/2012	1.00	0.400	125	2840
801945-002 Total Dissolved Solids	mg/L	06/06/2012	1.00	0.400	250.	4760

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate — Lab ID = 801974-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	249	256	2.77	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	491	500.	98.2	90 - 110

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Metals by EPA 200.8, Dissolved

Batch 061412A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Chromium	ug/L	06/14/2012 21:13	5.00	0.195	1.0	6.8
801945-002 Chromium	ug/L	06/14/2012 21:20	10.0	0.390	2.0	906.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.220	0.200	110.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.5	100.	98.5	85 - 115

Matrix Spike — Lab ID = 801990-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.2	100.(100.)	98.2	75 - 125

Matrix Spike Duplicate — Lab ID = 801990-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.(100.)	100.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.50	10.0	95.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.59	10.0	95.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.49	10.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

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Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.23	10.0	92.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.76	10.0	97.6	80 - 120

Serial Dilution Lab ID = 801752-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	75.2	77.0	2.32	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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E2 5C

Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 06TDS12B
Date Analyzed: 6/11/12

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	72.4956	72.4958	72.4956	0.0002	No	0.0000	0.0	25.0	ND	1
801944-1	10	50.3793	50.4202	50.4202	0.0000	No	0.0409	4090.0	250.0	4090.0	1
801944-2	10	49.5176	49.5628	49.5625	0.0003	No	0.0449	4490.0	250.0	4490.0	1
801945-1	20	51.4248	51.4821	51.4817	0.0004	No	0.0569	2845.0	125.0	2845.0	1
801945-2	10	48.0104	48.0581	48.0580	0.0001	No	0.0476	4760.0	250.0	4760.0	1
801948-1	100	68.3860	68.4164	68.4162	0.0002	No	0.0302	302.0	25.0	302.0	1
801948-2	100	74.7091	74.7358	74.7356	0.0002	No	0.0265	265.0	25.0	265.0	1
801948-3	100	72.8484	72.8764	72.876	0.0004	No	0.0276	276.0	25.0	276.0	1
801949-1	50	78.3992	78.4447	78.4444	0.0003	No	0.0452	904.0	50.0	904.0	1
801949-2	50	76.5132	76.5416	76.5413	0.0003	No	0.0281	562.0	50.0	562.0	1
801974-1	100	74.7312	74.7568	74.7568	0.0000	No	0.0256	256.0	25.0	256.0	1
801974-1D	100	71.3105	71.3358	71.3354	0.0004	No	0.0249	249.0	25.0	249.0	1
LCS	100	73.1365	73.1859	73.1856	0.0003	No	0.0491	491.0	25.0	491.0	1
802014	50	76.5457	76.6465	76.6464	0.0001	No	0.1007	2014.0	50.0	2014.0	1
802015	100	74.5369	74.5767	74.5764	0.0003	No	0.0395	395.0	25.0	395.0	1

Calculation as follows:

Filterable residue (TDS), mg/L = $\left(\frac{A-B}{C}\right) x\ 10^6$

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.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	**98.2%**	90-110%	Yes
LCSD					

LCS Recovery

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

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?
801974-1	0.0256	0.0249	**1.4%**	≤5%	Yes

Duplicate Determination Difference

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

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

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Jenny T.
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 06TDS12B
Date Analyzed: 6/11/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801944-1	7450	0.55	4842.5	0.84
801944-2	7720	0.58	5018	0.89
801945-1	4960	0.57	3224	0.88
801945-2	8260	0.58	5369	0.89
801948-1	536	0.56	348.4	0.87
801948-2	446	0.59	289.9	0.91
801948-3	476	0.58	309.4	0.89
801949-1	1550	0.58	1007.5	0.90
801949-2	1017	0.55	661.05	0.85
801974-1	454	0.56	295.1	0.87
801974-1D	454	0.55	295.1	0.84
LCS				
802014	3530	0.57	2294.5	0.88
802015	228	1.73	148.2	2.67
	~~228~~	~~#VALUE!~~	~~148.2~~	~~#VALUE!~~
	~~228~~	~~#VALUE!~~	~~148.2~~	~~#VALUE!~~

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CHAIN OF CUSTODY RECORD

[IM3Plant-EW-195] 801945

COC Number

TURNAROUND TIME 10 Days

DATE 06/05/12 PAGE 1 OF 1

COMPANY	CH2M HILL /E2
PROJECT NAME	PG&E Topock IM3Plant-EW
PHONE	530-229-3303 FAX 530-339-3303
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612
P.O. NUMBER	424973.01.DM
SAMPLERS (SIGNATURE	

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)	NUMBER OF CONTAINERS	COMMENTS
-1 PE-01-195	06/05/12	10:00	Ground water	X		X	X	X	4	pH = 7 } 200.8/
-2 TW-03D-195	06/05/12	10:00	Ground water	X	X	X	X		4	pH = 7 } 200.7
									8	TOTAL NUMBER OF CONTAINERS

ALERT !!
Level III QC

or Sample Conditions
see Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Tom Hinze	OMI	6-5-12 1500
Signature (Received)	Hipolito	TLI	6-5-12 15:00
Signature (Relinquished)	Hipolito	TLI	6-5-12 21:30
Signature (Received)	Ibarra	TLI	6/5/12 21:30
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 4.2 °C

CUSTODY SEALED YES ☐ NO ☑

SPECIAL REQUIREMENTS:

041

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
6/5/12	801907	9.5	N/A	N/A	N/A	GW
6/5/12	801909-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
6/5/12 MVG 6/5/12	801~~8~~8908	9.5	N/A	N/A	N/A	GW
6/6/12	801944-1	7	2mL	9.5	8:55 Am	Q
↓	801944-2	↓	↓	↓	9:00 Am	↓
6/6/12	801945-1	7	2mL	9.5	9:05 Am	GW
↓	801945-2	↓	↓	↓	9:10 Am	↓
6/6/12	801948-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1916	>1	<2	6-5-12	BE	Yes	30 loA
801919	<1	↓	↓	↓	NO	NO
801918	↓	↓	↓	↓	↓	~~30 loA~~ BE NO
801920	>1	↓	↓	↓	Yes	30 loA
801922(LT24)	<1	>2	↓	↓	NO	Yes 16:00
801930	↓	<2	↓	↓	Yes	30 loA
80 1926(1-3	↓	>2	↓	↓	NO	Yes 16:00
T 80 1944(1-2)	<1	<2	6-6-12	BE	Yes	30 loA
D 801944(-2)	↓	>2	↓	↓	↓	↓
80 1945(1-2)	↓	↓	↓	↓	↓	↓
80 1944	↓	<2	↓	↓	↓	↓
801948(1-3)	↓	↓	↓	↓	↓	↓
801949(1-2)	↓	↓	↓	↓	↓	↓
801943	↓	<2	↓	↓	NO	NO
801990(1-6	<1	<2	6-7-12	BE	Yes	30 loA
801991-1	<1	<2	↓	↓	↓	↓
801973	>1	<2	↓	↓	↓	↓
801978(10-12)	<1	>2	↓	↓	NO	Yes 13:30
80 2003	>1	>2	↓	↓	Yes	30 loA
80 ~~1999~~ 2004	>1	<2	↓	↓	Yes	30 loA
80 2005	↓	↓	6-8-12	BE	↓	↓
80 2009	<1	<2	6-8-12	BE	NO	NO
80 2012	↓	↓	↓	↓	↓	↓
80 2013	↓	↓	↓	↓	↓	↓
80 2020	↓	↓	↓	↓	↓	↓
80 2033	↓	↓	↓	↓	↓	↓
80 2036	<1	<2	6-11-12	BE	NO	NO
80 2037	↓	↓	↓	↓	↓	↓
80 2038	↓	↓	↓	↓	↓	↓
80 2039	↓	↓	↓	↓	↓	↓
80 2040	↓	↓	↓	↓	↓	↓
80 2041	↓	↓	↓	↓	↓	↓
80 2042	↓	↓	↓	↓	↓	↓
80 2043	↓	↓	↓	↓	↓	↓
80 2044	↓	↓	↓	↓	↓	↓
80 2045	↓	↓	↓	↓	↓	↓
80 2046	↓	↓	↓	↓	↓	↓
80 2047(1-3)	↓	>2	↓	↓	↓	Yes 14:00
80 2048(1-51)	↓	↓	↓	↓	↓	↓
80 2049(1-9)	↓	↓	↓	↓	↓	↓
80 2050(1-42)	↓	↓	↓	↓	↓	↓
80 2051(1-60)	↓	↓	↓	↓	↓	↓
80 2052(1-9)	↓	↓	↓	↓	↓	↓
80 2060	↓	<2	↓	↓	↓	NO
80 2061	↓	↓	↓	↓	↓	↓
80 2073	>1	<2	6-12-12	BE	Yes	30 loA
80 2080	<1	↓	↓	↓	NO	NO
80 2081	>1	↓	↓	↓	Yes	30 loA
80 2082	<1	↓	↓	↓	NO	NO

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 801945

Date Delivered: 06/05/12 **Time:** 21:30 **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)? 4.2° 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_____

16. Comments: _____

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabaniuc

ALERT !!
Level III QC

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

July 10, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-HNWR-006 PROJECT,

TLI NO.: 802358

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-HNWR-006 groundwater-monitoring project for Total Cyanide and Soluble Reactive Silica. 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.

The samples were received and delivered with the chain of custody on June 29, 2012, 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.

No 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

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.: 802358
Date Received: June 29, 2012

Project Name: PG&E Topock Project
Project No.: 428373.FS.05
P.O. No.: 428373.FS.05

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802358-001	HNWR-01-006	SM4500SI	LABFLT	6/27/2012	11:49	Soluble Silica	25.9	mg/L	2.00
802358-002	HNWR-01-006	SM4500CN	NONE	6/27/2012	11:49	Cyanide	ND	mg/L	0.0100

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.

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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.

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

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: 428373.FS.05
P.O. Number: 428373.FS.05
Release Number:

Laboratory No. 802358

Printed 7/10/2012

Samples Received on 6/29/2012 9:00:00 AM

Field ID	Lab ID	Collected	Matrix
HNWR-01-006	802358-001	06/27/2012 11:49	Water
HNWR-01-006	802358-002	06/27/2012 11:49	Water

Reactive Silica by SM4500-Si D

Batch 07Si12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802358-001 Silica	mg/L	07/02/2012	50.0	0.505	2.00	25.9

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate — Lab ID = 802358-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	50.0	25.9	25.9	0.100	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.225	0.220	102.	90 - 110

Matrix Spike — Lab ID = 802358-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	50.0	46.5	45.9(20.0)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.108	0.110	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.410	0.400	102.	90 - 110

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Total Cyanide by SM4500-CN E

Batch 07CN12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802358-002 Cyanide, Total	mg/L	07/05/2012	1.00	0.00110	0.0100	ND

Method Blank

Parameter	Unit	DF	Result
Cyanide, Total	mg/L	1.00	ND

Duplicate — Lab ID = 802358-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Cyanide, Total	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cyanide, Total	mg/L	1.00	0.0822	0.0800	103.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cyanide, Total	mg/L	1.00	0.0862	0.0800	108.	90 - 110

Matrix Spike — Lab ID = 802358-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Cyanide, Total	mg/L	1.00	0.0839	0.0800(0.0800)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cyanide, Total	mg/L	1.00	0.0879	0.0800	110.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cyanide, Total	mg/L	1.00	0.0842	0.0800	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cyanide, Total	mg/L	1.00	0.0842	0.0800	105.	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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.

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

802358

QC Level: Level IV

Subcontractor:

Truesdail
14201 Franklin Ave.
Tustin, CA 92680

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler:

28-Jun-12

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM 4500-SiO2 C	Requested Tests: SM4500-CN E	
-1	N008060-001D / HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	16OZP	1		
-2	N008060-001G / HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	32OZP		1	

Rec'd 06/29/12
~~sl6a~~ 802358

ALERT !!
Level IV QC

For Sample Conditions
See Form Attached

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: NA Please fax results by: Normal TAT

Please send report and bill directly to CH2M Hill. Direct all question to Shawn Duffy.

		Date/Time			Date/Time
Relinquished by:		6/28/12@1700	**Received by:**	TCI	6/29/12 09:00
Relinquished by:			**Received by:**		

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TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 802358

Date Delivered: 06/29/12 **Time:** 09:00 **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? ☒ Yes ☐ No ☐ N/A
   Temperature (if yes)? 4.5 °C
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? ☒ Yes ☐ No ☐ N/A
    Preserved (if yes) by: ☐ **Truesdail** ☒ Client
12. Were samples pH checked? pH = _____ ☐ Yes ☐ No ☒ N/A
13. Were all analyses within holding time at time of receipt? ☒ Yes ☐ No ☐ N/A
    If not, notify Project Manager.
14. Have Project due dates been checked and accepted? ☒ Yes ☐ No ☐ N/A
    Turn Around Time (TAT): ☐ **RUSH** ☒ Std
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☒ Ground Water ☐ Waste Water
    ☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☐ Other _____
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Linda Shabuning

ALERT !! Level IV QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

March 14, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007379

RE: PG&E Topock, 405681.MP.06.TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 24, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,

for Nancy Schweer
Jose Tenorio Jr.
Laboratory Director

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

CLIENT:	CH2M HILL
Project:	PG&E Topock, 405681.MP.06.TS
Lab Order:	N007379

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Calcium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *09-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 405681.MP.06.TS
Lab Order: N007379
Contract No: 2012-HNWR-00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007379-001A	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012
N007379-001B	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012
N007379-001C	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012
N007379-001D	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012
N007379-001E	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012
N007379-001F	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012
N007379-001G	HNWR-01-003	Water	2/23/2012 3:31:00 PM	2/24/2012	3/9/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_120228A**	QC Batch: **39122**			PrepDate:	**2/27/2012**		Analyst: **KAB**
Total Dissolved Solids (Residue, Filterable)	480	10	10		mg/L	1	2/28/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID: **MB-39122**	SampType: **MBLK**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date: **2/27/2012**	RunNo: **83382**
Client ID: **PBW**	Batch ID: **39122**	TestNo: **SM2540C**		Analysis Date: **2/28/2012**	SeqNo: **1366438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: **LCS-39122**	SampType: **LCS**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date: **2/27/2012**	RunNo: **83382**
Client ID: **LCSW**	Batch ID: **39122**	TestNo: **SM2540C**		Analysis Date: **2/28/2012**	SeqNo: **1366439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1056.000	10	1000	0	106	80	120				

Sample ID: **N007382-001D-DUP**	SampType: **DUP**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date: **2/27/2012**	RunNo: **83382**
Client ID: **ZZZZZZ**	Batch ID: **39122**	TestNo: **SM2540C**		Analysis Date: **2/28/2012**	SeqNo: **1366442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	669.000	10						663.0	0.901	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC1_120301A**	QC Batch: **R83476**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	15	0.028	0.40		µg/L	2	3/1/2012 11:00 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R83476**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83476**
Client ID: **PBW**	Batch ID: **R83476**	TestNo: **EPA 218.6**		Analysis Date: **3/1/2012**	SeqNo: **1369445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R83476**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83476**
Client ID: **LCSW**	Batch ID: **R83476**	TestNo: **EPA 218.6**		Analysis Date: **3/1/2012**	SeqNo: **1369446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.014	0.20	5.000	0	100	90	110				

Sample ID: **N007379-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83476**
Client ID: **ZZZZZZ**	Batch ID: **R83476**	TestNo: **EPA 218.6**		Analysis Date: **3/1/2012**	SeqNo: **1369448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.227	0.40						15.26	0.218	20	

Sample ID: **N007379-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83476**
Client ID: **ZZZZZZ**	Batch ID: **R83476**	TestNo: **EPA 218.6**		Analysis Date: **3/1/2012**	SeqNo: **1369449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.073	0.40	10.00	15.26	98.1	90	110				

Sample ID: **N007379-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83476**
Client ID: **ZZZZZZ**	Batch ID: **R83476**	TestNo: **EPA 218.6**		Analysis Date: **3/1/2012**	SeqNo: **1369450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.147	0.40	10.00	15.26	98.9	90	110	25.07	0.296	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_120229E**	QC Batch: **R83518**			PrepDate:			Analyst: **KAB**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	2/29/2012
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	2/29/2012
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	2/29/2012
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	2/29/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

Date: *09-Mar-12*

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **LCS-R83518** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83518**
Client ID: **LCSW** Batch ID: **R83518** TestNo: **SM 2320 B** Analysis Date: **2/29/2012** SeqNo: **1370494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	104.010	5.0	100.0	0	104	85	115				
Alkalinity, Total (As CaCO3)	104.010	5.0	100.0	0	104	85	115				

Sample ID: **LCSD-R83518** SampType: **LCSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83518**
Client ID: **LCSS02** Batch ID: **R83518** TestNo: **SM 2320 B** Analysis Date: **2/29/2012** SeqNo: **1370495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	104.010	5.0	100.0	0	104	85	115	104.0	0	20	
Alkalinity, Total (As CaCO3)	104.010	5.0	100.0	0	104	85	115	104.0	0	20	

Sample ID: **MB-R83518** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83518**
Client ID: **PBW** Batch ID: **R83518** TestNo: **SM 2320 B** Analysis Date: **2/29/2012** SeqNo: **1370496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	1.253	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	1.253	5.0									

Sample ID: **N007379-001D-DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83518**
Client ID: **ZZZZZZ** Batch ID: **R83518** TestNo: **SM 2320 B** Analysis Date: **2/29/2012** SeqNo: **1370498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	106.516	5.0						106.5	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	106.516	5.0						106.5	0	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **N007379-001D-MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83518**
Client ID: **ZZZZZZ** Batch ID: **R83518** TestNo: **SM 2320 B** Analysis Date: **2/29/2012** SeqNo: **1370499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	211.779	5.0	100.0	106.5	105	75	125				
Alkalinity, Total (As CaCO3)	211.779	5.0	100.0	106.5	105	75	125				

Sample ID: **N007379-001D-MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83518**
Client ID: **ZZZZZZ** Batch ID: **R83518** TestNo: **SM 2320 B** Analysis Date: **2/29/2012** SeqNo: **1370500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	213.033	5.0	100.0	106.5	107	75	125	211.8	0.590	20	
Alkalinity, Total (As CaCO3)	213.033	5.0	100.0	106.5	107	75	125	211.8	0.590	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120225A**	QC Batch: **R83455**			PrepDate:			Analyst: **QBM**
Chloride	130	0.70	25		mg/L	50	2/25/2012 11:54 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120225A**	QC Batch: **R83455**			PrepDate:			Analyst: **QBM**
Sulfate	45	0.16	2.5		mg/L	5	2/25/2012 01:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120225A**	QC Batch: **R83455**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.6	0.024	1.0		mg/L	2	2/25/2012 11:08 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **MB-R83455_CL**	SampType: **MBLK**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83455**
Client ID: **PBW**	Batch ID: **R83455**	TestNo: **EPA 300.0**		Analysis Date: **2/25/2012**	SeqNo: **1368723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: **LCS-R83455_CL**	SampType: **LCS**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83455**
Client ID: **LCSW**	Batch ID: **R83455**	TestNo: **EPA 300.0**		Analysis Date: **2/25/2012**	SeqNo: **1368724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.389	0.50	2.500	0	95.6	90	110				

Sample ID: **N007379-001CDUP**	SampType: **DUP**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83455**
Client ID: **ZZZZZZ**	Batch ID: **R83455**	TestNo: **EPA 300.0**		Analysis Date: **2/25/2012**	SeqNo: **1368726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.450	25						131.2	0.986	20	

Sample ID: **N007379-001CMS**	SampType: **MS**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83455**
Client ID: **ZZZZZZ**	Batch ID: **R83455**	TestNo: **EPA 300.0**		Analysis Date: **2/25/2012**	SeqNo: **1368729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	251.150	25	125.0	131.2	96.0	80	120				

Sample ID: **N007379-001CMSD**	SampType: **MSD**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83455**
Client ID: **ZZZZZZ**	Batch ID: **R83455**	TestNo: **EPA 300.0**		Analysis Date: **2/25/2012**	SeqNo: **1368730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	252.850	25	125.0	131.2	97.4	80	120	251.2	0.675	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

1369

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: MB-R83455_SO4	SampType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: PBW	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: LCS-R83455_SO4	SampType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: LCSW	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.868	0.50	5.000	0	97.4	90	110				

Sample ID: N007379-001CDUP	SampType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: ZZZZZZ	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	45.680	2.5						45.14	1.20	20	

Sample ID: N007379-001CMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: ZZZZZZ	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	70.695	2.5	25.00	45.14	102	80	120				

Sample ID: N007379-001CMSD	SampType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: ZZZZZZ	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	70.055	2.5	25.00	45.14	99.7	80	120	70.70	0.909	20	

9 6 5 1 5 1

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
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R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: MB-R83455_NO3	SampType: MBLK	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: PBW	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368735

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: LCS-R83455_NO3	SampType: LCS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: LCSW	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368736

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.449	0.50	2.500	0	98.0	90	110				

Sample ID: N007379-001CDUP	SampType: DUP	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: ZZZZZZ	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368738

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.642	1.0						2.614	1.07	20	

Sample ID: N007379-001CMS	SampType: MS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: ZZZZZZ	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.626	1.0	5.000	2.614	100	80	120				

Sample ID: N007379-001CMSD	SampType: MSD	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83455
Client ID: ZZZZZZ	Batch ID: R83455	TestNo: EPA 300.0		Analysis Date: 2/25/2012	SeqNo: 1368740

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.654	1.0	5.000	2.614	101	80	120	7.626	0.366	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
AMMONIA-N							
			SM4500-NH3C				
RunID: **WETCHEM_120307A**	QC Batch: **39123**			PrepDate:	**3/6/2012**		Analyst: **KAB**
Nitrogen, Ammonia (As N)	0.13	0.030	0.10		mg/L	1	3/7/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 350.2_4500NH3C_WPGE

Sample ID: **LCS-39123**	SampType: **LCS**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/6/2012**	RunNo: **83494**
Client ID: **LCSW**	Batch ID: **39123**	TestNo: **SM4500-NH3**		Analysis Date: **3/7/2012**	SeqNo: **1369963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	1.028	0.10	1.000	0	103	85	115				

Sample ID: **MB-39123**	SampType: **MBLK**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/6/2012**	RunNo: **83494**
Client ID: **PBW**	Batch ID: **39123**	TestNo: **SM4500-NH3**		Analysis Date: **3/7/2012**	SeqNo: **1369964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.10									

Sample ID: **N007379-001F-MS**	SampType: **MS**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/6/2012**	RunNo: **83494**
Client ID: **ZZZZZZ**	Batch ID: **39123**	TestNo: **SM4500-NH3**		Analysis Date: **3/7/2012**	SeqNo: **1369966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.153	0.10	2.000	0.1290	101	75	125				

Sample ID: **N007379-001F-MSD**	SampType: **MSD**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/6/2012**	RunNo: **83494**
Client ID: **ZZZZZZ**	Batch ID: **39123**	TestNo: **SM4500-NH3**		Analysis Date: **3/7/2012**	SeqNo: **1369967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.153	0.10	2.000	0.1290	101	75	125	2.153	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM5310C				
RunID: **TOC1_120301A**	QC Batch: **R83447**			PrepDate:			Analyst: **JT**
Organic Carbon, Total	ND	0.073	1.0		mg/L	1	3/1/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

Date: *09-Mar-12*

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T

Sample ID: **MB-R83447** SampType: **MBLK** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83447**
Client ID: **PBW** Batch ID: **R83447** TestNo: **SM5310C** Analysis Date: **3/1/2012** SeqNo: **1368558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R83447** SampType: **LCS** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83447**
Client ID: **LCSW** Batch ID: **R83447** TestNo: **SM5310C** Analysis Date: **3/1/2012** SeqNo: **1368559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	9.896	1.0	10.00	0	99.0	85	115				

Sample ID: **N007382-001EMS** SampType: **MS** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83447**
Client ID: **ZZZZZZ** Batch ID: **R83447** TestNo: **SM5310C** Analysis Date: **3/1/2012** SeqNo: **1368561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	10.396	1.0	10.00	0.1770	102	75	125				

Sample ID: **N007382-001EMSD** SampType: **MSD** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83447**
Client ID: **ZZZZZZ** Batch ID: **R83447** TestNo: **SM5310C** Analysis Date: **3/1/2012** SeqNo: **1368562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	10.696	1.0	10.00	0.1770	105	75	125	10.40	2.84	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007379
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007379-001

Client Sample ID: HNWR-01-003
Collection Date: 2/23/2012 3:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120302A**	QC Batch: **39131**				PrepDate: **2/27/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	3/2/2012 04:44 PM
Barium	110	0.20	3.0		ug/L	1	3/2/2012 04:44 PM
Beryllium	ND	0.090	1.0		ug/L	1	3/2/2012 04:44 PM
Cadmium	ND	0.23	3.0		ug/L	1	3/2/2012 04:44 PM
Calcium	19000	120	500		ug/L	1	3/2/2012 04:44 PM
Cobalt	ND	0.31	3.0		ug/L	1	3/2/2012 04:44 PM
Copper	ND	0.53	5.0		ug/L	1	3/3/2012 04:06 PM
Iron	37	14	20		ug/L	1	3/3/2012 04:06 PM
Lead	ND	1.5	10		ug/L	1	3/2/2012 04:44 PM
Magnesium	3100	6.3	100		ug/L	1	3/2/2012 04:44 PM
Molybdenum	9.4	0.49	5.0		ug/L	1	3/2/2012 04:44 PM
Nickel	ND	1.1	5.0		ug/L	1	3/2/2012 04:44 PM
Potassium	4400	620	2500		ug/L	10	3/3/2012 05:42 PM
Silver	ND	0.72	3.0		ug/L	1	3/3/2012 04:06 PM
Sodium	130000	1200	5000		ug/L	10	3/3/2012 05:42 PM
Vanadium	21	0.19	3.0		ug/L	1	3/2/2012 04:44 PM
Zinc	ND	4.6	10		ug/L	1	3/2/2012 04:44 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39131** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83463**
Client ID: **PBW** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Calcium	ND	500									
Cobalt	ND	3.0									
Lead	ND	10									
Magnesium	ND	100									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39131** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83463**
Client ID: **LCSW** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.822	10	50.00	0	97.6	85	115				
Barium	51.630	3.0	50.00	0	103	85	115				
Beryllium	9.549	1.0	10.00	0	95.5	85	115				
Cadmium	10.267	3.0	10.00	0	103	85	115				
Calcium	898.349	500	1000	0	89.8	85	115				
Cobalt	10.207	3.0	10.00	0	102	85	115				
Lead	49.141	10	50.00	0	98.3	85	115				
Magnesium	997.590	100	1000	0	99.8	85	115				
Molybdenum	50.965	5.0	50.00	0	102	85	115				
Nickel	52.047	5.0	50.00	0	104	85	115				
Vanadium	10.570	3.0	10.00	0	106	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-39131** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83463**
Client ID: **LCSW** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	51.664	10	50.00	0	103	85	115				

Sample ID: **N007379-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.731	10	50.00	0	99.5	75	125				
Barium	152.135	3.0	50.00	107.5	89.2	75	125				
Beryllium	10.059	1.0	10.00	0	101	75	125				
Cadmium	10.107	3.0	10.00	0	101	75	125				
Calcium	19861.675	500	1000	18680	118	75	125				
Cobalt	10.072	3.0	10.00	0	101	75	125				
Lead	48.650	10	50.00	0	97.3	75	125				
Magnesium	4076.881	100	1000	3058	102	75	125				
Molybdenum	62.128	5.0	50.00	9.351	106	75	125				
Nickel	52.914	5.0	50.00	0	106	75	125				
Vanadium	32.238	3.0	10.00	21.09	111	75	125				
Zinc	64.280	10	50.00	8.956	111	75	125				

Sample ID: **N007379-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.366	10	50.00	0	98.7	75	125	49.73	0.736	20	
Barium	146.012	3.0	50.00	107.5	76.9	75	125	152.1	4.11	20	
Beryllium	10.017	1.0	10.00	0	100	75	125	10.06	0.414	20	
Cadmium	10.058	3.0	10.00	0	101	75	125	10.11	0.493	20	
Calcium	18868.655	500	1000	18680	18.8	75	125	19860	5.13	20	S
Cobalt	10.198	3.0	10.00	0	102	75	125	10.07	1.25	20	
Lead	48.460	10	50.00	0	96.9	75	125	48.65	0.393	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007379-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	3898.110	100	1000	3058	84.0	75	125	4077	4.48	20	
Molybdenum	61.774	5.0	50.00	9.351	105	75	125	62.13	0.570	20	
Nickel	53.054	5.0	50.00	0	106	75	125	52.91	0.263	20	
Vanadium	31.128	3.0	10.00	21.09	100	75	125	32.24	3.50	20	
Zinc	63.795	10	50.00	8.956	110	75	125	64.28	0.758	20	

Sample ID: **MB-39131** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83470**
Client ID: **PBW** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	114.590	500									
Sodium	321.593	500									

Sample ID: **LCS-39131** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83470**
Client ID: **LCSW** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	1901.870	500	2000	0	95.1	85	115				
Sodium	22804.468	500	25000	0	91.2	85	115				

Sample ID: **N007379-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83470**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	8342.268	5000	5000	4370	79.5	75	125				
Sodium	225933.107	5000	100000	132300	93.6	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007379-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **2/27/2012**	RunNo: **83470**
Client ID: **ZZZZZZ**	Batch ID: **39131**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **3/3/2012**	SeqNo: **1369296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	8247.830	5000	5000	4370	77.6	75	125	8342	1.14	20	
Sodium	222478.125	5000	100000	132300	90.1	75	125	225900	1.54	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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SDG 405681

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: MB-39181	SampType: MBLK	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 3/3/2012	RunNo: 83467
Client ID: PBW	Batch ID: 39181	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2012	SeqNo: 1369216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	5.0									
Iron	ND	20									
Silver	ND	3.0									

Sample ID: LCS-39181	SampType: LCS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 3/3/2012	RunNo: 83467
Client ID: LCSW	Batch ID: 39181	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2012	SeqNo: 1369217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.142	5.0	10.00	0	101	85	115				
Iron	85.767	20	100.0	0	85.8	85	115				
Silver	9.603	3.0	10.00	0	96.0	85	115				

Sample ID: N007379-001B-MS	SampType: MS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 3/3/2012	RunNo: 83467
Client ID: ZZZZZZ	Batch ID: 39181	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2012	SeqNo: 1369223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	13.003	5.0	10.00	1.894	111	75	125				
Iron	142.710	20	100.0	36.55	106	75	125				
Silver	9.027	3.0	10.00	0	90.3	75	125				

Sample ID: N007379-001B-MSD	SampType: MSD	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 3/3/2012	RunNo: 83467
Client ID: ZZZZZZ	Batch ID: 39181	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2012	SeqNo: 1369224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.379	5.0	10.00	1.894	105	75	125	13.00	4.91	20	
Iron	139.640	20	100.0	36.55	103	75	125	142.7	2.17	20	
Silver	9.039	3.0	10.00	0	90.4	75	125	9.027	0.123	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120228A**	QC Batch: **39117**			PrepDate:	**2/27/2012**		Analyst: **CEI**
Arsenic	15	0.0025	0.10		µg/L	1	2/28/2012 08:55 PM
Chromium	16	0.0080	1.0		µg/L	1	2/28/2012 08:55 PM
Manganese	1.9	0.091	0.50		µg/L	1	2/28/2012 08:55 PM
Thallium	ND	0.039	0.50		µg/L	1	2/28/2012 08:55 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39117**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2012**	RunNo: **83440**
Client ID: **PBW**	Batch ID: **39117**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2012**	SeqNo: **1368840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39117**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2012**	RunNo: **83440**
Client ID: **LCSW**	Batch ID: **39117**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2012**	SeqNo: **1368841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.989	0.10	10.00	0	89.9	85	115				
Chromium	9.569	1.0	10.00	0	95.7	85	115				
Manganese	97.321	0.50	100.0	0	97.3	85	115				
Selenium	9.249	0.50	10.00	0	92.5	85	115				
Thallium	9.830	0.50	10.00	0	98.3	85	115				

Sample ID: **N007383-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2012**	RunNo: **83440**
Client ID: **ZZZZZZ**	Batch ID: **39117**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2012**	SeqNo: **1368845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.375	0.10	10.00	8.487	98.9	75	125				
Chromium	10.861	1.0	10.00	1.568	92.9	75	125				
Manganese	94.462	0.50	100.0	2.234	92.2	75	125				
Selenium	9.909	0.50	10.00	0.3883	95.2	75	125				
Thallium	10.146	0.50	10.00	0	101	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007383-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2012**	RunNo: **83440**
Client ID: **ZZZZZZ**	Batch ID: **39117**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2012**	SeqNo: **1368846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.309	0.10	10.00	8.487	98.2	75	125	18.38	0.364	20	
Chromium	10.806	1.0	10.00	1.568	92.4	75	125	10.86	0.505	20	
Manganese	96.307	0.50	100.0	2.234	94.1	75	125	94.46	1.93	20	
Selenium	9.629	0.50	10.00	0.3883	92.4	75	125	9.909	2.87	20	
Thallium	9.969	0.50	10.00	0	99.7	75	125	10.15	1.75	20	

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Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120302A**	QC Batch: **39120**			PrepDate:	**3/1/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	3/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39120**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/1/2012**	RunNo: **83456**
Client ID: **LCSW**	Batch ID: **39120**	TestNo: **EPA 7470A**		Analysis Date: **3/2/2012**	SeqNo: **1368898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.837	0.20	5.000	0	96.7	85	115				

Sample ID: **MB-39120**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/1/2012**	RunNo: **83456**
Client ID: **PBW**	Batch ID: **39120**	TestNo: **EPA 7470A**		Analysis Date: **3/2/2012**	SeqNo: **1368900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007379-001B-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/1/2012**	RunNo: **83456**
Client ID: **ZZZZZZ**	Batch ID: **39120**	TestNo: **EPA 7470A**		Analysis Date: **3/2/2012**	SeqNo: **1368912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.902	0.20	5.000	0	98.0	75	125				

Sample ID: **N007379-001B-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/1/2012**	RunNo: **83456**
Client ID: **ZZZZZZ**	Batch ID: **39120**	TestNo: **EPA 7470A**		Analysis Date: **3/2/2012**	SeqNo: **1368913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.965	0.20	5.000	0	99.3	75	125	4.902	1.28	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-003
Turnaround Time 10 Days
Shipping Date: 2/23/2012
COC Number: ATL-HNWR003

	Container:	250 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	1 Liter Poly	3 x 40 ml VOA		
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	H2SO4, 4°C		
	Filtered:	Field	Field	Field	Field	NA	NA	NA	NA	NA		
	Holding Time:	28	180	180	180	2	2	2	28	28		
DATE TIME Matrix		Cr6 (E218.6) FF	Metals (6010B/6020A/7470Adis) FF Title22:SbAsBaBeCdCrCoCuPbHgMoNiSeAgTlVZn	Metals (6010BFF) FF Na,K,Ca,Mg,Fe	Metals (6020AFF) FF As,Mn	Anions (E300.0) Chloride,Sulfate,Nitrate as N	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)	TOC (SM5310C)	Number of Containers	COMMENTS
HNWR-01-003 2-23-12 1531 Water		X	X	X	X	X	X	X	X	X	N007379-1	
											10	
											TOTAL NUMBER OF CONTAINERS 20 10	

Signatures	Date/Time
Approved by	2-24-12
Sampled by	0945
Relinquished by	
Received by	P.M Galloway 2/24/12 0945
Relinquished by	P.M.G 2/24/12 1630
Received by	[illegible] 2/24/12 1630

Shipping Details
Method of Shipment: FedEx
On Ice: ~~yes~~ / no 2-8 °C
Airbill No: 1R #2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-003
Turnaround Time 10 Days
Shipping Date: 2/23/2012
COC Number: ATL-HNWR003

	DATE	TIME	Matrix	Container:	250 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	1 Liter Poly	3 x 40 ml VOA	Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	H2SO4, 4°C		
				Filtered:	Field	Field	Field	Field	NA	NA	NA	NA	NA		
				Holding Time:	28	180	180	180	2	2	2	28	28		
					Cr6 (E218.6) FF	Metals (6010B/6020A/7470A(dis) FF Title22:SbAsBaBeCdCrCoCuPbHgMoNiSeAgTlVZn	Metals (6010BFF) FF Na,K,Ca,Mg,Fe	Metals (6020AFF) FF As,Mn	Anions (E300.0) Chloride,Sulfate,Nitrate as N	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)	TOC (SM5310C)		
HNWR-01-003	2-23-12	1531	Water		X	X	X	X	X	X	X	X	X	10	
													TOTAL NUMBER OF CONTAINERS	~~20~~ 10	

	Signatures	Date/Time
Approved by		2-24-12
Sampled by		0945
Relinquished by		
Received by	E. PWGallow	2/24/12 0945
Relinquished by	E. PWGallow	2/24/12 1630
Received by		2/24/12 1630

Shipping Details
Method of Shipment: FedEx
On Ice: ~~yes~~ / no 2-8°C
Airbill No: 1R#12
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

1-C009

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/24/2012	Workorder:	N007379
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	FedEx		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC

Reviewed By:

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N007379-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.8339-61.7862)*1000000}{100}$$

$$= 477 \text{ mg/L}$$

MS for 3/21/12

Reporting result in two significant figures,

TDS = 480 mg/L

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007379-001A, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.629918 * 2$$

$$= 15.25984 \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 15 \mu g/L$$

OMS 3/6/12

Sample ID: **N007379-001D @ Ph 8.19**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (9.975mL)

= **0.02506 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.25) (0.02506N) (1) * 1000

= **106.505 mg/L**

Reporting results in two significant figures,

= **106.52 mg/L** as CaCO3

NS for KB
3/9/11

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02506N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.25mL) (0.02506) (1) * 1000

= **106.505 mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	OH Alkalinity as $CaCO_3$	CO_3 Alkalinity as $CaCO_3$	HCO_3 Alkalinity as $CaCO_3$
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **106.52 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **106.52 mg/L**

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007379-001C**, concentration in mg/L are calculated as follows:

Chloride, mg/L	=	2.623 * 50
	=	131.15 mg/L

Reporting **N007379-001C**, results in two significant figures,

Chloride, mg/L	**=**	**130 mg/L**

ans 3/5/12

SAMPLE CALCULATION

METHOD: SM4500-NH3C
TEST NAME: Ammonia-Nitrogen
MATRIX: Water

FORMULA:

Calculate the Ammonia as N concentration, in mg/L , in the original sample as follows:

Ammonia as N, mg/L = A*DF

Where:

A= mg/L, UV-VIS NH3 as N calculated concentration
DF= dilution factor

For **N007379-001D**, concentration in mg/L is calculated as follows:

Ammonia as N, mg/L = 0.129 *1

= 0.129 mg/L

Reporting result in two significant figures,

Ammonia as N = 0.13 mg/L

NS for KB 3/9/12

Sample Calculation

METHOD: SM5310C
TEST NAME: TOTAL ORGANIC CARBON
MATRIX: WATER

FORMULA:

Calculate the TOC concentration, in mg/L, in the original sample as follows:

TOC, mg/L = (A * DF) - B

where:

A = mg/L, instrument calculated concentration
DF = dilution factor
B = mg/L, TOC concentration in the calibration blank

For **N007379-001G**, concentration in mg/L are calculated as follows:

TOC, mg/L = (0.896* 1) – 0.104

= 0.792mg/L

Reporting results in two significant figures,

TOC, mg/L = 0.79 mg/L

Since the reporting limit is 1.0 mg/L, therefore

TOC, mg/L = ND

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007379-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.10754* 1* (25/25) * 1000

= 107.54 ug/L

Reporting results in two significant figures,

Barium, ug/L = 108

3/7/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007379
Test Method: EPA 6010
Analysis Date: 03/02/12

Matrix: Water
Batch No.: 39131

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPref Val	%DIFF	%DIFFlimit
N007379-001B-DT 5X	Antimony	ug/L	0	NA	0	0.00%	10
N007379-001B-DT 5X	Barium	ug/L	111.0014151	PASS	107.5411427	-3.22%	10
N007379-001B-DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007379-001B-DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007379-001B-DT 5X	Calcium	ug/L	18949.37248	PASS	18680.20465	-1.44%	10
N007379-001B-DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007379-001B-DT 5X	Molybdenum	ug/L	8.08795511	NA	9.351366842	13.51%	10
N007379-001B-DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007379-001B-DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007379-001B-DT 5X	Magnesium	ug/L	3206.059658	PASS	3058.093525	-4.84%	10
N007379-001B-DT 5X	Vanadium	ug/L	20.33550197	NA	21.08913791	3.57%	10
N007379-001B-DT 5X	Zinc	ug/L	0	NA	8.95556821	100.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007379
Test Method: EPA 6010
Analysis Date: 03/03/12

Matrix: Water
Batch No.: 39181

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPref Val	%DIFF	%DIFFlimit
N007379-001B-DT 5X	Copper	ug/L	0	NA	1.893736935	0.00%	10
N007379-001B-DT 5X	Iron	ug/L	0	NA	36.54725367	0.00%	10
N007379-001B-DT 5X	Silver	ug/L	0	NA	0	0.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007379
Test Method: EPA 6010
Analysis Date: 03/12/12

Matrix: Water
Batch No.: 39131

Instrument ID: ICP-2
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable for analytes with concentration <25x the RL. PS @10x is within criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007379-001B-DT 50X	Potassium	µg/L	8399.653	PASS	4369.577	-92.23%	10
N007379-001B-DT 50X	Sodium	µg/L	138007.4	PASS	132336.7	-4.29%	10

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007379-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	245.912	20	250.0	0	98.4	75	125				
Barium	351.166	6.0	250.0	107.5	97.4	75	125				
Beryllium	251.243	2.0	250.0	0	100	75	125				
Cadmium	252.268	6.0	250.0	0	101	75	125				
Calcium	23261.732	1000	5000	18680	91.6	75	125				
Cobalt	265.395	6.0	250.0	0	106	75	125				
Lead	244.888	20	250.0	0	98.0	75	125				
Magnesium	8043.494	200	5000	3058	99.7	75	125				
Molybdenum	267.807	10	250.0	9.351	103	75	125				
Nickel	266.527	10	250.0	0	107	75	125				
Vanadium	271.440	6.0	250.0	21.09	100	75	125				
Zinc	279.670	20	250.0	8.956	108	75	125				

Sample ID: **N007379-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83470**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	27631.350	5000	25000	4370	93.0	75	125				
Sodium	658904.624	5000	500000	132300	105	75	125				

Sample ID: **N007379-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83470**
Client ID: **ZZZZZZ** Batch ID: **39131** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	121199.685	25000	125000	4370	93.5	75	125				
Sodium	2669908.359	25000	2500000	132300	102	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007379-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83467**
Client ID: **ZZZZZZ** Batch ID: **39181** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	265.726	10	250.0	1.894	106	75	125				
Iron	5182.260	40	5000	36.55	103	75	125				
Silver	249.567	6.0	250.0	0	99.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

00225

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007379-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 15.321 * 1 * (25/25)

= 15.321 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 15

MS fn
3/6/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007379
Test Method: EPA 6020
Analysis Date: 02/28/12

Matrix: Water
Batch No.: 39117

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to analytes that calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007383-001B-DT 5X	Arsenic	µg/L	8.674891701	PASS	8.487395081	-2.21%	10
N007383-001B-DT 5X	Chromium	µg/L	1.59574442	NA	1.567524793	-1.80%	10
N007383-001B-DT 5X	Manganese	µg/L	2.115384917	NA	2.233867929	5.30%	10
N007383-001B-DT 5X	Selenium	µg/L	0.302028153	NA	0.388305001	22.22%	10
N007383-001B-DT 5X	Thallium	µg/L	0	NA	0		10

CLIENT: CH2M HILL
Work Order: N007379
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007383-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.410	0.20	20.00	8.487	105	75	125				
Chromium	21.731	1.0	20.00	1.568	101	75	125				
Manganese	201.429	1.0	200.0	2.234	99.6	75	125				
Selenium	20.291	1.0	20.00	0.3883	99.5	75	125				
Thallium	21.334	1.0	20.00	0	107	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

J_37269

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007379-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	=	**0.0**

Mercury, ug/L	=	**ND**

March 14, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007379

RE: PG&E Topock, 405681.MP.06.TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 24, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

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

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

Sincerely,

for Nancy Silveira
Jose Tenorio Jr.
Laboratory Director

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-003
Lab Order:	N007379	**Collection Date:**	2/23/2012 3:31:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007379-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120314A**	QC Batch: **39117**			PrepDate:	**2/27/2012**		Analyst: **CEI**
Selenium	0.87	0.018	0.50		µg/L	1	3/14/2012 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Selenium concentration, in ug/L, in the original sample as follows:

Selenium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007382-001C**, the concentration in ug/L is calculated as follows:

Selenium, ug/L = 0.8727* 1 * (25/25)

= 0.8727 ug/L

Reporting results in two significant figures,

Selenium, ug/L = 0.87

NS for
3/14/12

March 29, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007489

RE: PG&E Topock, 405681.MP.06.TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 14, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Jose Tenorio Jr.
Laboratory Director

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Advanced Technology Laboratories, Inc. **Date:** *29-Mar-12*

CLIENT:	CH2M HILL
Project:	PG&E Topock, 405681.MP.06.TS
Lab Order:	N007489

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Trip Blank got broken when samples are being pulled out from the cooler. Client was properly informed.

Subcontracted Analyses:

Cyanide (SM 4500-CN) was subcontracted to Advanced Technology Laboratories-Signal Hill, CA .

Herbicides by EPA 8151 was subcontracted to Test America- Richland,WA.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8015B_DRO/ORO:

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

Analytical Comments for EPA 8081A:

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

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CLIENT:	CH2M HILL
Project:	PG&E Topock, 405681.MP.06.TS
Lab Order:	N007489

CASE NARRATIVE

Analytical Comments for EPA 8082:

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

Analytical Comments for EPA 8270C_SIM:

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

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00665

Advanced Technology Laboratories, Inc.

Date: *29-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 405681.MP.06.TS
Lab Order: N007489
Contract No: 2012-HNWR-00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007489-001A	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001B	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001C	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001D	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001E	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001F	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001G	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001H	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001I	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001J	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001K	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001L	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-001M	HNWR-01-004	Water	3/14/2012 12:45:00 PM	3/14/2012	3/29/2012
N007489-002A	TB01-004	Water	3/14/2012 12:00:00 PM	3/14/2012	3/29/2012

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_120316A**	QC Batch: **39257**				PrepDate: **3/15/2012**		Analyst: **KAB**
Total Dissolved Solids (Residue, Filterable)	510	10	10		mg/L	1	3/16/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID: **MB-39257**	SampType: **MBLK**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date:	RunNo: **83613**
Client ID: **PBW**	Batch ID: **39257**	TestNo: **SM2540C**		Analysis Date: **3/16/2012**	SeqNo: **1374008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: **LCS-39257**	SampType: **LCS**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date:	RunNo: **83613**
Client ID: **LCSW**	Batch ID: **39257**	TestNo: **SM2540C**		Analysis Date: **3/16/2012**	SeqNo: **1374009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	961.000	10	1000	0	96.1	80	120				

Sample ID: **N007469-001F-DUP**	SampType: **DUP**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date: **3/15/2012**	RunNo: **83613**
Client ID: **ZZZZZZ**	Batch ID: **39257**	TestNo: **SM2540C**		Analysis Date: **3/16/2012**	SeqNo: **1374011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1400.000	20						1442	2.96	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_120321A**	QC Batch: **39318**			PrepDate:	**3/21/2012**		Analyst: **KAB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	3/21/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: **MB-39318**	SampType: **MBLK**	TestCode: **160.2_2540D_**	Units: **mg/L**	Prep Date:	RunNo: **83667**
Client ID: **PBW**	Batch ID: **39318**	TestNo: **SM2540D**		Analysis Date: **3/21/2012**	SeqNo: **1375553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID: **LCS-39318**	SampType: **LCS**	TestCode: **160.2_2540D_**	Units: **mg/L**	Prep Date:	RunNo: **83667**
Client ID: **LCSW**	Batch ID: **39318**	TestNo: **SM2540D**		Analysis Date: **3/21/2012**	SeqNo: **1375554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	970.000	10	1000	0	97.0	80	120				

Sample ID: **N007489-001C-DUP**	SampType: **DUP**	TestCode: **160.2_2540D_**	Units: **mg/L**	Prep Date: **3/21/2012**	RunNo: **83667**
Client ID: **ZZZZZZ**	Batch ID: **39318**	TestNo: **SM2540D**		Analysis Date: **3/21/2012**	SeqNo: **1375556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC1_120316A**	QC Batch: **R83621**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	18	0.028	0.40		µg/L	2	3/16/2012 10:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R83621**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83621**
Client ID: **PBW**	Batch ID: **R83621**	TestNo: **EPA 218.6**		Analysis Date: **3/16/2012**	SeqNo: **1374302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R83621**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83621**
Client ID: **LCSW**	Batch ID: **R83621**	TestNo: **EPA 218.6**		Analysis Date: **3/16/2012**	SeqNo: **1374303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.007	0.20	5.000	0	100	90	110				

Sample ID: **N007489-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83621**
Client ID: **ZZZZZZ**	Batch ID: **R83621**	TestNo: **EPA 218.6**		Analysis Date: **3/16/2012**	SeqNo: **1374305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.449	0.40						17.57	0.687	20	

Sample ID: **N007489-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83621**
Client ID: **ZZZZZZ**	Batch ID: **R83621**	TestNo: **EPA 218.6**		Analysis Date: **3/16/2012**	SeqNo: **1374306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.396	0.40	10.00	17.57	98.3	90	110				

Sample ID: **N007489-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83621**
Client ID: **ZZZZZZ**	Batch ID: **R83621**	TestNo: **EPA 218.6**		Analysis Date: **3/16/2012**	SeqNo: **1374307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.478	0.40	10.00	17.57	99.1	90	110	27.40	0.301	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

2012-1559

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_120315E**	QC Batch: **R83661**			PrepDate:			Analyst: **KAB**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	3/15/2012
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	3/15/2012
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	3/15/2012
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	3/15/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **LCS-R83661** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83661**
Client ID: **LCSW** Batch ID: **R83661** TestNo: **SM 2320 B** Analysis Date: **3/15/2012** SeqNo: **1376368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.540	5.0	100.0	0	98.5	85	115				
Alkalinity, Total (As CaCO3)	98.540	5.0	100.0	0	98.5	85	115				

Sample ID: **LCSD-R83661** SampType: **LCSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83661**
Client ID: **LCSS02** Batch ID: **R83661** TestNo: **SM 2320 B** Analysis Date: **3/15/2012** SeqNo: **1376369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	99.757	5.0	100.0	0	99.8	85	115	98.54	1.23	20	
Alkalinity, Total (As CaCO3)	99.757	5.0	100.0	0	99.8	85	115	98.54	1.23	20	

Sample ID: **MB-R83661** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83661**
Client ID: **PBW** Batch ID: **R83661** TestNo: **SM 2320 B** Analysis Date: **3/15/2012** SeqNo: **1376370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	1.217	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	1.217	5.0									

Sample ID: **N007493-001E-DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83661**
Client ID: **ZZZZZZ** Batch ID: **R83661** TestNo: **SM 2320 B** Analysis Date: **3/15/2012** SeqNo: **1376373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	34.063	5.0						32.85	3.64	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	34.063	5.0						32.85	3.64	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **N007493-001E-MS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **83661**
Client ID: **ZZZZZZ**	Batch ID: **R83661**	TestNo: **SM 2320 B**		Analysis Date: **3/15/2012**	SeqNo: **1376374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	130.170	5.0	100.0	32.85	97.3	75	125				
Alkalinity, Total (As CaCO3)	130.170	5.0	100.0	32.85	97.3	75	125				

Sample ID: **N007493-001E-MSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **83661**
Client ID: **ZZZZZZ**	Batch ID: **R83661**	TestNo: **SM 2320 B**		Analysis Date: **3/15/2012**	SeqNo: **1376375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	131.387	5.0	100.0	32.85	98.5	75	125	130.2	0.930	20	
Alkalinity, Total (As CaCO3)	131.387	5.0	100.0	32.85	98.5	75	125	130.2	0.930	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas. NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

SGS ATL

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **IC2_120315B**	QC Batch: **R83676**			PrepDate:			Analyst: **QBM**
Chloride	130	0.70	25		mg/L	50	3/15/2012 09:30 AM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **IC2_120315B**	QC Batch: **R83676**			PrepDate:			Analyst: **QBM**
Sulfate	44	0.16	2.5		mg/L	5	3/15/2012 09:41 AM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **IC2_120315B**	QC Batch: **R83676**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.5	0.024	1.0		mg/L	2	3/15/2012 11:42 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **MB-R83676_CL**	SampType: **MBLK**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83676**
Client ID: **PBW**	Batch ID: **R83676**	TestNo: **EPA 300.0**		Analysis Date: **3/15/2012**	SeqNo: **1375650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: **LCS-R83676_CL**	SampType: **LCS**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83676**
Client ID: **LCSW**	Batch ID: **R83676**	TestNo: **EPA 300.0**		Analysis Date: **3/15/2012**	SeqNo: **1375651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.391	0.50	2.500	0	95.6	90	110				

Sample ID: **N007489-001CDUP**	SampType: **DUP**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83676**
Client ID: **ZZZZZZ**	Batch ID: **R83676**	TestNo: **EPA 300.0**		Analysis Date: **3/15/2012**	SeqNo: **1375653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.700	25						129.2	2.63	20	

Sample ID: **N007489-001CMS**	SampType: **MS**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83676**
Client ID: **ZZZZZZ**	Batch ID: **R83676**	TestNo: **EPA 300.0**		Analysis Date: **3/15/2012**	SeqNo: **1375654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	252.200	25	125.0	129.2	98.4	80	120				

Sample ID: **N007489-001CMSD**	SampType: **MSD**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **83676**
Client ID: **ZZZZZZ**	Batch ID: **R83676**	TestNo: **EPA 300.0**		Analysis Date: **3/15/2012**	SeqNo: **1375655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	253.450	25	125.0	129.2	99.4	80	120	252.2	0.494	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **MB-R83676_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **83676**
Client ID: **PBW** Batch ID: **R83676** TestNo: **EPA 300.0** Analysis Date: **3/15/2012** SeqNo: **1375674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: **LCS-R83676_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **83676**
Client ID: **LCSW** Batch ID: **R83676** TestNo: **EPA 300.0** Analysis Date: **3/15/2012** SeqNo: **1375675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.877	0.50	5.000	0	97.5	90	110				

Sample ID: **N007489-001CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **83676**
Client ID: **ZZZZZZ** Batch ID: **R83676** TestNo: **EPA 300.0** Analysis Date: **3/15/2012** SeqNo: **1375677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	45.385	2.5						44.17	2.71	20	

Sample ID: **N007489-001CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **83676**
Client ID: **ZZZZZZ** Batch ID: **R83676** TestNo: **EPA 300.0** Analysis Date: **3/15/2012** SeqNo: **1375678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	69.330	2.5	25.00	44.17	101	80	120				

Sample ID: **N007489-001CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **83676**
Client ID: **ZZZZZZ** Batch ID: **R83676** TestNo: **EPA 300.0** Analysis Date: **3/15/2012** SeqNo: **1375681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	69.755	2.5	25.00	44.17	102	80	120	69.33	0.611	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: MB-R83676_NO3	SampType: MBLK	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83676
Client ID: PBW	Batch ID: R83676	TestNo: EPA 300.0		Analysis Date: 3/15/2012	SeqNo: 1375662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: LCS-R83676_NO3	SampType: LCS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83676
Client ID: LCSW	Batch ID: R83676	TestNo: EPA 300.0		Analysis Date: 3/15/2012	SeqNo: 1375663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.425	0.50	2.500	0	97.0	90	110				

Sample ID: N007489-001CDUP	SampType: DUP	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83676
Client ID: ZZZZZZ	Batch ID: R83676	TestNo: EPA 300.0		Analysis Date: 3/15/2012	SeqNo: 1375667

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.544	1.0						2.502	1.66	20	

Sample ID: N007489-001CMS	SampType: MS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83676
Client ID: ZZZZZZ	Batch ID: R83676	TestNo: EPA 300.0		Analysis Date: 3/15/2012	SeqNo: 1375668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.714	1.0	5.000	2.502	104	80	120				

Sample ID: N007489-001CMSD	SampType: MSD	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83676
Client ID: ZZZZZZ	Batch ID: R83676	TestNo: EPA 300.0		Analysis Date: 3/15/2012	SeqNo: 1375669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.476	1.0	5.000	2.502	99.5	80	120	7.714	3.13	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

405681

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PERCHLORATE BY ION CHROMATOGRAPHY							
			EPA 314.0				
RunID: **IC5_120326A**	QC Batch: **R83719**			PrepDate:			Analyst: **JT**
Perchlorate	ND	1.2	2.0		µg/L	1	3/26/2012 03:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 314_W

Sample ID: **MB-R83719**	SampType: **MBLK**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83719**
Client ID: **PBW**	Batch ID: **R83719**	TestNo: **EPA 314.0**		Analysis Date: **3/26/2012**	SeqNo: **1376981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	ND	2.0									

Sample ID: **LCS-R83719**	SampType: **LCS**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83719**
Client ID: **LCSW**	Batch ID: **R83719**	TestNo: **EPA 314.0**		Analysis Date: **3/26/2012**	SeqNo: **1376982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	9.802	2.0	10.00	0	98.0	85	115				

Sample ID: **N007489-001F-MS**	SampType: **MS**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83719**
Client ID: **ZZZZZZ**	Batch ID: **R83719**	TestNo: **EPA 314.0**		Analysis Date: **3/26/2012**	SeqNo: **1376985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	10.695	2.0	10.00	0	107	80	120				

Sample ID: **N007489-001F-MSD**	SampType: **MSD**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83719**
Client ID: **ZZZZZZ**	Batch ID: **R83719**	TestNo: **EPA 314.0**		Analysis Date: **3/26/2012**	SeqNo: **1376986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	10.697	2.0	10.00	0	107	80	120	10.69	0.0168	15	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

T2699

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
AMMONIA-N							
			SM4500-NH3C				
RunID: **WETCHEM_120319A**	QC Batch: **39260**			PrepDate:	**3/19/2012**		Analyst: **KAB**
Nitrogen, Ammonia (As N)	0.12	0.030	0.10		mg/L	1	3/19/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 350.2_4500NH3C_W

Sample ID: **LCS-39260**	SampType: **LCS**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/19/2012**	RunNo: **83637**
Client ID: **LCSW**	Batch ID: **39260**	TestNo: **SM4500-NH3**		Analysis Date: **3/19/2012**	SeqNo: **1374789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	1.039	0.10	1.000	0	104	80	120				

Sample ID: **MB-39260**	SampType: **MBLK**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/19/2012**	RunNo: **83637**
Client ID: **PBW**	Batch ID: **39260**	TestNo: **SM4500-NH3**		Analysis Date: **3/19/2012**	SeqNo: **1374790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.10									

Sample ID: **N007489-001D-MS**	SampType: **MS**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/19/2012**	RunNo: **83637**
Client ID: **ZZZZZZ**	Batch ID: **39260**	TestNo: **SM4500-NH3**		Analysis Date: **3/19/2012**	SeqNo: **1374793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.091	0.10	2.000	0.1190	98.6	80	120				

Sample ID: **N007489-001D-MSD**	SampType: **MSD**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **3/19/2012**	RunNo: **83637**
Client ID: **ZZZZZZ**	Batch ID: **39260**	TestNo: **SM4500-NH3**		Analysis Date: **3/19/2012**	SeqNo: **1374794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.090	0.10	2.000	0.1190	98.6	80	120	2.091	0.0478	20	

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Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM5310C				
RunID: **TOC1_120321A**	QC Batch: **R83675**			PrepDate:			Analyst: **JT**
Organic Carbon, Total	ND	0.073	1.0		mg/L	1	3/21/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

Date: *29-Mar-12*

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T

Sample ID: **MB-R83675** SampType: **MBLK** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83675**
Client ID: **PBW** Batch ID: **R83675** TestNo: **SM5310C** Analysis Date: **3/21/2012** SeqNo: **1375634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R83675** SampType: **LCS** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83675**
Client ID: **LCSW** Batch ID: **R83675** TestNo: **SM5310C** Analysis Date: **3/21/2012** SeqNo: **1375635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	11.042	1.0	11.00	0	100	85	115				

Sample ID: **N007473-001C-MS** SampType: **MS** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83675**
Client ID: **ZZZZZZ** Batch ID: **R83675** TestNo: **SM5310C** Analysis Date: **3/21/2012** SeqNo: **1375637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	12.342	1.0	11.00	0.9520	104	75	125				

Sample ID: **N007473-001C-MSD** SampType: **MSD** TestCode: **5310C_W_T** Units: **mg/L** Prep Date: RunNo: **83675**
Client ID: **ZZZZZZ** Batch ID: **R83675** TestNo: **SM5310C** Analysis Date: **3/21/2012** SeqNo: **1375638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	12.542	1.0	11.00	0.9520	105	75	125	12.34	1.61	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007489
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007489-001

Client Sample ID: HNWR-01-004
Collection Date: 3/14/2012 12:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120320B**	QC Batch: **39297**			PrepDate:	**3/19/2012**		Analyst: **JT**
Aluminum	ND	8.4	50		ug/L	1	3/20/2012 01:29 PM
Antimony	ND	5.4	10		ug/L	1	3/20/2012 01:29 PM
Barium	110	0.20	3.0		ug/L	1	3/20/2012 01:29 PM
Beryllium	ND	0.090	1.0		ug/L	1	3/20/2012 01:29 PM
Cadmium	ND	0.23	3.0		ug/L	1	3/20/2012 01:29 PM
Calcium	19000	120	500		ug/L	1	3/20/2012 01:29 PM
Cobalt	ND	0.31	3.0		ug/L	1	3/20/2012 01:29 PM
Copper	ND	0.53	5.0		ug/L	1	3/20/2012 01:29 PM
Iron	ND	14	20		ug/L	1	3/20/2012 01:29 PM
Lead	ND	1.5	10		ug/L	1	3/20/2012 01:29 PM
Magnesium	3200	6.3	100		ug/L	1	3/20/2012 01:29 PM
Molybdenum	10	0.49	5.0		ug/L	1	3/21/2012 11:13 AM
Nickel	ND	1.1	5.0		ug/L	1	3/20/2012 01:29 PM
Potassium	4000	310	2500		ug/L	5	3/20/2012 05:30 PM
Silver	ND	0.72	3.0		ug/L	1	3/20/2012 01:29 PM
Sodium	130000	600	2500		ug/L	5	3/20/2012 05:30 PM
Vanadium	22	0.19	3.0		ug/L	1	3/20/2012 01:29 PM
Zinc	16	4.6	10		ug/L	1	3/20/2012 01:29 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39297** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83648**
Client ID: **PBW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	50									
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Calcium	ND	500									
Cobalt	ND	3.0									
Copper	0.718	5.0									
Iron	ND	20									
Lead	ND	10									
Magnesium	ND	100									
Nickel	ND	5.0									
Silver	ND	3.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39297** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83648**
Client ID: **LCSW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1015.163	50	1000	0	102	85	115				
Antimony	53.600	10	50.00	0	107	85	115				
Barium	51.843	3.0	50.00	0	104	85	115				
Beryllium	10.283	1.0	10.00	0	103	85	115				
Cadmium	10.922	3.0	10.00	0	109	85	115				
Calcium	996.473	500	1000	0	99.6	85	115				
Cobalt	11.006	3.0	10.00	0	110	85	115				
Copper	11.333	5.0	10.00	0	113	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-39297** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83648**
Client ID: **LCSW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	104.601	20	100.0	0	105	85	115				
Lead	53.326	10	50.00	0	107	85	115				
Magnesium	1045.055	100	1000	0	105	85	115				
Nickel	56.487	5.0	50.00	0	113	85	115				
Silver	8.626	3.0	10.00	0	86.3	85	115				
Vanadium	10.074	3.0	10.00	0	101	85	115				
Zinc	55.322	10	50.00	0	111	85	115				

Sample ID: **N007489-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83648**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1085.144	50	1000	0	109	75	125				
Antimony	52.669	10	50.00	0	105	75	125				
Barium	156.719	3.0	50.00	110.8	91.8	75	125				
Beryllium	10.210	1.0	10.00	0	102	75	125				
Cadmium	10.401	3.0	10.00	0	104	75	125				
Calcium	20648.895	500	1000	19300	135	75	125				S
Cobalt	10.440	3.0	10.00	0	104	75	125				
Copper	12.583	5.0	10.00	1.848	107	75	125				
Iron	124.566	20	100.0	15.24	109	75	125				
Lead	51.125	10	50.00	0	102	75	125				
Magnesium	4286.098	100	1000	3222	106	75	125				
Nickel	54.106	5.0	50.00	0	108	75	125				
Silver	8.825	3.0	10.00	0	88.2	75	125				
Vanadium	32.842	3.0	10.00	21.51	113	75	125				
Zinc	73.937	10	50.00	16.41	115	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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00028

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007489-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83648**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1136.048	50	1000	0	114	75	125	1085	4.58	20	
Antimony	56.928	10	50.00	0	114	75	125	52.67	7.77	20	
Barium	165.655	3.0	50.00	110.8	110	75	125	156.7	5.54	20	
Beryllium	10.943	1.0	10.00	0	109	75	125	10.21	6.94	20	
Cadmium	11.299	3.0	10.00	0	113	75	125	10.40	8.28	20	
Calcium	21690.975	500	1000	19300	239	75	125	20650	4.92	20	S
Cobalt	11.360	3.0	10.00	0	114	75	125	10.44	8.45	20	
Copper	13.712	5.0	10.00	1.848	119	75	125	12.58	8.59	20	
Iron	130.636	20	100.0	15.24	115	75	125	124.6	4.76	20	
Lead	54.842	10	50.00	0	110	75	125	51.13	7.01	20	
Magnesium	4495.565	100	1000	3222	127	75	125	4286	4.77	20	S
Nickel	58.144	5.0	50.00	0	116	75	125	54.11	7.20	20	
Silver	9.369	3.0	10.00	0	93.7	75	125	8.825	5.98	20	
Vanadium	34.802	3.0	10.00	21.51	133	75	125	32.84	5.80	20	S
Zinc	78.934	10	50.00	16.41	125	75	125	73.94	6.54	20	S

Sample ID: **MB-39297** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83656**
Client ID: **PBW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/21/2012** SeqNo: **1375215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	2.373	5.0									

Sample ID: **LCS-39297** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83656**
Client ID: **LCSW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/21/2012** SeqNo: **1375216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	53.212	5.0	50.00	0	106	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007489-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83656**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/21/2012** SeqNo: **1375220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	63.486	5.0	50.00	10.26	106	75	125				

Sample ID: **N007489-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83656**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/21/2012** SeqNo: **1375221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	67.797	5.0	50.00	10.26	115	75	125	63.49	6.57	20	

Sample ID: **MB-39297** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83657**
Client ID: **PBW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID: **LCS-39297** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83657**
Client ID: **LCSW** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	2446.481	500	2500	0	97.9	85	115				
Sodium	24315.392	500	25000	0	97.3	85	115				

Sample ID: **N007489-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83657**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9386.953	2500	5000	3957	109	75	125				
Sodium	236517.022	2500	100000	128300	108	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007489-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83657**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9527.010	2500	5000	3957	111	75	125	9387	1.48	20	
Sodium	240028.856	2500	100000	128300	112	75	125	236500	1.47	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120320B**	QC Batch: **39299**			PrepDate:	**3/19/2012**		Analyst: **CEI**
Arsenic	16	0.0025	0.10		µg/L	1	3/20/2012 12:34 PM
Chromium	18	0.0090	1.0		µg/L	1	3/20/2012 12:34 PM
Manganese	0.64	0.091	0.50		µg/L	1	3/20/2012 12:34 PM
Selenium	0.75	0.018	0.50		µg/L	1	3/20/2012 12:34 PM
Thallium	ND	0.039	0.50		µg/L	1	3/20/2012 12:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39299**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **3/19/2012**	RunNo: **83700**
Client ID: **PBW**	Batch ID: **39299**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/20/2012**	SeqNo: **1376427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.017	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39299**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **3/19/2012**	RunNo: **83700**
Client ID: **LCSW**	Batch ID: **39299**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/20/2012**	SeqNo: **1376428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.831	0.10	10.00	0	88.3	85	115				
Chromium	9.348	1.0	10.00	0	93.5	85	115				
Manganese	92.371	0.50	100.0	0	92.4	85	115				
Selenium	9.429	0.50	10.00	0	94.3	85	115				
Thallium	9.249	0.50	10.00	0	92.5	85	115				

Sample ID: **N007471-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **3/19/2012**	RunNo: **83700**
Client ID: **ZZZZZZ**	Batch ID: **39299**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/20/2012**	SeqNo: **1376434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.772	0.10	10.00	4.010	97.6	75	125				
Chromium	47.529	1.0	10.00	36.96	106	75	125				
Manganese	193.838	0.50	100.0	95.76	98.1	75	125				
Selenium	10.250	0.50	10.00	0.6060	96.4	75	125				
Thallium	9.848	0.50	10.00	0	98.5	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007471-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/19/2012** RunNo: **83700**
Client ID: **ZZZZZZ** Batch ID: **39299** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1376435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.571	0.10	10.00	4.010	95.6	75	125	13.77	1.47	20	
Chromium	46.400	1.0	10.00	36.96	94.4	75	125	47.53	2.40	20	
Manganese	192.139	0.50	100.0	95.76	96.4	75	125	193.8	0.880	20	
Selenium	9.968	0.50	10.00	0.6060	93.6	75	125	10.25	2.79	20	
Thallium	9.646	0.50	10.00	0	96.5	75	125	9.848	2.08	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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1376435

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ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120316A**	QC Batch: **39283**			PrepDate:	**3/16/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	3/16/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39283**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/16/2012**	RunNo: **83617**
Client ID: **LCSW**	Batch ID: **39283**	TestNo: **EPA 7470A**		Analysis Date: **3/16/2012**	SeqNo: **1375233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.225	0.20	5.000	0	105	85	115				

Sample ID: **MB-39283**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/16/2012**	RunNo: **83617**
Client ID: **PBW**	Batch ID: **39283**	TestNo: **EPA 7470A**		Analysis Date: **3/16/2012**	SeqNo: **1375236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007489-001B-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/16/2012**	RunNo: **83617**
Client ID: **ZZZZZZ**	Batch ID: **39283**	TestNo: **EPA 7470A**		Analysis Date: **3/16/2012**	SeqNo: **1375242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.212	0.20	5.000	0	104	75	125				

Sample ID: **N007489-001B-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **3/16/2012**	RunNo: **83617**
Client ID: **ZZZZZZ**	Batch ID: **39283**	TestNo: **EPA 7470A**		Analysis Date: **3/16/2012**	SeqNo: **1375243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.308	0.20	5.000	0	106	75	125	5.212	1.84	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID							
EPA 3510C			**EPA 8015B**				
RunID: **GC1_120320B**	QC Batch: **39288**			PrepDate:	**3/16/2012**		Analyst: **MDM**
TPH-Diesel	190	23	53		ug/L	1	3/20/2012 03:06 PM
TPH-Motor Oil	ND	9.1	53		ug/L	1	3/20/2012 03:06 PM
Surr: Octacosane	79.2	0	26-152		%REC	1	3/20/2012 03:06 PM
Surr: p-Terphenyl	87.6	0	57-132		%REC	1	3/20/2012 03:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_PGE

Sample ID: **LCS-39288_DRO** SampType: **LCS** TestCode: **8015_W_DM_** Units: **ug/L** Prep Date: **3/16/2012** RunNo: **83647**
Client ID: **LCSW** Batch ID: **39288** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **3/20/2012** SeqNo: **1374989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	1057.354	50	1000	0	106	61	143				
Surr: Octacosane	83.302		80.00		104	26	152				
Surr: p-Terphenyl	91.350		80.00		114	57	132				

Sample ID: **LCSD-39288_DRO** SampType: **LCSD** TestCode: **8015_W_DM_** Units: **ug/L** Prep Date: **3/16/2012** RunNo: **83647**
Client ID: **LCSS02** Batch ID: **39288** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **3/20/2012** SeqNo: **1374990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	1121.200	50	1000	0	112	61	143	1057	5.86	30	
Surr: Octacosane	82.523		80.00		103	26	152		0		
Surr: p-Terphenyl	89.195		80.00		111	57	132		0		

Sample ID: **LCS-39288_ORO** SampType: **LCS** TestCode: **8015_W_DM_** Units: **ug/L** Prep Date: **3/16/2012** RunNo: **83647**
Client ID: **LCSW** Batch ID: **39288** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **3/20/2012** SeqNo: **1374991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Motor Oil	1221.381	50	1000	0	122	50	150				
Surr: Octacosane	69.921		80.00		87.4	26	152				
Surr: p-Terphenyl	75.730		80.00		94.7	57	132				

Sample ID: **LCSD-39288_ORO** SampType: **LCSD** TestCode: **8015_W_DM_** Units: **ug/L** Prep Date: **3/16/2012** RunNo: **83647**
Client ID: **LCSS02** Batch ID: **39288** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **3/20/2012** SeqNo: **1374992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Motor Oil	1244.074	50	1000	0	124	50	150	1221	1.84	30	
Surr: Octacosane	69.342		80.00		86.7	26	152		0		
Surr: p-Terphenyl	85.164		80.00		106	57	132		0		

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

65959

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_PGE

Sample ID: **MB-39288** SampType: **MBLK** TestCode: **8015_W_DM_** Units: **ug/L** Prep Date: **3/16/2012** RunNo: **83647**
Client ID: **PBW** Batch ID: **39288** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **3/20/2012** SeqNo: **1374993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	ND	50									
TPH-Motor Oil	14.631	50									
Surr: Octacosane	66.525		80.00		83.2	26	152				
Surr: p-Terphenyl	70.239		80.00		87.8	57	132				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-004
Lab Order:	N007489	**Collection Date:**	3/14/2012 12:45:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	WATER
Lab ID:	N007489-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID							
			EPA 8015B				
RunID: **GC4_120317A**	QC Batch: **E12VW012**			PrepDate:			Analyst: **MCS**
TPH-Gasoline	ND	6.0	100		ug/L	1	3/17/2012
Surr: Chlorobenzene - d5	98.9	0	74-138		%REC	1	3/17/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GPLLPGE

Sample ID: **E120317LCS** SampType: **LCS** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83627**
Client ID: **LCSW** Batch ID: **E12VW012** TestNo: **EPA 8015B** Analysis Date: **3/17/2012** SeqNo: **1374434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	1019.000	100	1000	0	102	67	136				
Surr: Chlorobenzene - d5	47.082		50.00		94.2	74	138				

Sample ID: **E120317MB1** SampType: **MBLK** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83627**
Client ID: **PBW** Batch ID: **E12VW012** TestNo: **EPA 8015B** Analysis Date: **3/17/2012** SeqNo: **1374435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	24.000	100									
Surr: Chlorobenzene - d5	49.419		50.00		98.8	74	138				

Sample ID: **N007489-001MMS** SampType: **MS** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83627**
Client ID: **ZZZZZZ** Batch ID: **E12VW012** TestNo: **EPA 8015B** Analysis Date: **3/17/2012** SeqNo: **1374436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	1006.000	100	1000	27.00	97.9	67	136				
Surr: Chlorobenzene - d5	47.067		50.00		94.1	74	138				

Sample ID: **N007489-001MMSD** SampType: **MSD** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83627**
Client ID: **ZZZZZZ** Batch ID: **E12VW012** TestNo: **EPA 8015B** Analysis Date: **3/17/2012** SeqNo: **1374437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	995.000	100	1000	27.00	96.8	67	136	1006	1.10	30	
Surr: Chlorobenzene - d5	47.398		50.00		94.8	74	138		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007489
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007489-001

Client Sample ID: HNWR-01-004
Collection Date: 3/14/2012 12:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD							
	EPA 3510C			**EPA 8081A**			
RunID: **GC5_120322C**	QC Batch: **39306**				PrepDate: **3/20/2012**		Analyst: **MDM**
4,4´-DDD	ND	0.0053	0.053		µg/L	1	3/22/2012 12:41 PM
4,4´-DDE	ND	0.0053	0.053		µg/L	1	3/22/2012 12:41 PM
4,4´-DDT	ND	0.0053	0.053		µg/L	1	3/22/2012 12:41 PM
Aldrin	ND	0.0045	0.027		µg/L	1	3/22/2012 12:41 PM
alpha-BHC	ND	0.0047	0.027		µg/L	1	3/22/2012 12:41 PM
alpha-Chlordane	ND	0.0052	0.027		µg/L	1	3/22/2012 12:41 PM
beta-BHC	ND	0.0036	0.027		µg/L	1	3/22/2012 12:41 PM
delta-BHC	ND	0.0044	0.027		µg/L	1	3/22/2012 12:41 PM
Dieldrin	ND	0.0050	0.053		µg/L	1	3/22/2012 12:41 PM
Endosulfan I	ND	0.0039	0.027		µg/L	1	3/22/2012 12:41 PM
Endosulfan II	ND	0.0048	0.053		µg/L	1	3/22/2012 12:41 PM
Endosulfan sulfate	ND	0.0069	0.053		µg/L	1	3/22/2012 12:41 PM
Endrin	ND	0.0036	0.053		µg/L	1	3/22/2012 12:41 PM
Endrin aldehyde	ND	0.0044	0.053		µg/L	1	3/22/2012 12:41 PM
gamma-BHC	ND	0.0045	0.027		µg/L	1	3/22/2012 12:41 PM
gamma-Chlordane	ND	0.0039	0.027		µg/L	1	3/22/2012 12:41 PM
Heptachlor	ND	0.0052	0.027		µg/L	1	3/22/2012 12:41 PM
Heptachlor epoxide	ND	0.0051	0.027		µg/L	1	3/22/2012 12:41 PM
Methoxychlor	ND	0.0038	0.27		µg/L	1	3/22/2012 12:41 PM
Toxaphene	ND	0.28	2.7		µg/L	1	3/22/2012 12:41 PM
Surr: Tetrachloro-m-xylene	50.5	0	33-138		%REC	1	3/22/2012 12:41 PM
Surr: Decachlorobiphenyl	88.9	0	29-135		%REC	1	3/22/2012 12:41 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: **LCS-39306_OCP** SampType: **LCS** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **3/20/2012** RunNo: **83714**
Client ID: **LCSW** Batch ID: **39306** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **3/22/2012** SeqNo: **1376923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	0.435	0.050	0.5000	0	87.0	50	139				
4,4´-DDE	0.424	0.050	0.5000	0	84.7	48	137				
4,4´-DDT	0.436	0.050	0.5000	0	87.2	47	138				
Aldrin	0.388	0.025	0.5000	0	77.6	42	138				
alpha-BHC	0.404	0.025	0.5000	0	80.8	60	128				
alpha-Chlordane	0.377	0.025	0.5000	0	75.4	63	123				
beta-BHC	0.448	0.025	0.5000	0	89.7	66	126				
delta-BHC	0.305	0.025	0.5000	0	61.1	46	136				
Dieldrin	0.462	0.050	0.5000	0	92.4	62	129				
Endosulfan I	0.396	0.025	0.5000	0	79.1	49	120				
Endosulfan II	0.434	0.050	0.5000	0	86.9	42	130				
Endosulfan sulfate	0.407	0.050	0.5000	0	81.5	54	137				
Endrin	0.427	0.050	0.5000	0	85.5	56	134				
Endrin aldehyde	0.499	0.050	0.5000	0	99.7	56	137				
gamma-BHC	0.471	0.025	0.5000	0	94.3	30	146				
gamma-Chlordane	0.399	0.025	0.5000	0	79.8	67	120				
Heptachlor	0.399	0.025	0.5000	0	79.9	51	128				
Heptachlor epoxide	0.388	0.025	0.5000	0	77.6	62	131				
Methoxychlor	0.398	0.25	0.5000	0	79.6	56	150				
Surr: Tetrachloro-m-xylene	0.396		0.5000		79.2	33	138				
Surr: Decachlorobiphenyl	0.304		0.5000		60.9	29	135				

Sample ID: **LCSD-39306_OCP** SampType: **LCSD** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **3/20/2012** RunNo: **83714**
Client ID: **LCSS02** Batch ID: **39306** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **3/22/2012** SeqNo: **1376924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	0.452	0.050	0.5000	0	90.3	50	139	0.4350	3.75	30	
4,4´-DDE	0.455	0.050	0.5000	0	91.0	48	137	0.4236	7.13	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: LCSD-39306_OCP	SampType: LCSD	TestCode: 8081_W_PGE	Units: µg/L	Prep Date: 3/20/2012	RunNo: 83714
Client ID: LCSS02	Batch ID: 39306	TestNo: EPA 8081A	EPA 3510C	Analysis Date: 3/22/2012	SeqNo: 1376924

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.475	0.050	0.5000	0	94.9	47	138	0.4358	8.51	30	
Aldrin	0.447	0.025	0.5000	0	89.5	42	138	0.3881	14.2	30	
alpha-BHC	0.449	0.025	0.5000	0	89.7	60	128	0.4042	10.4	30	
alpha-Chlordane	0.408	0.025	0.5000	0	81.6	63	123	0.3771	7.85	30	
beta-BHC	0.467	0.025	0.5000	0	93.4	66	126	0.4483	4.04	30	
delta-BHC	0.305	0.025	0.5000	0	61.1	46	136	0.3053	0.0622	30	
Dieldrin	0.475	0.050	0.5000	0	95.1	62	129	0.4620	2.88	30	
Endosulfan I	0.422	0.025	0.5000	0	84.5	49	120	0.3956	6.52	30	
Endosulfan II	0.454	0.050	0.5000	0	90.8	42	130	0.4344	4.40	30	
Endosulfan sulfate	0.428	0.050	0.5000	0	85.6	54	137	0.4074	4.90	30	
Endrin	0.468	0.050	0.5000	0	93.5	56	134	0.4274	8.98	30	
Endrin aldehyde	0.538	0.050	0.5000	0	108	56	137	0.4987	7.62	30	
gamma-BHC	0.493	0.025	0.5000	0	98.5	30	146	0.4715	4.39	30	
gamma-Chlordane	0.428	0.025	0.5000	0	85.7	67	120	0.3990	7.11	30	
Heptachlor	0.439	0.025	0.5000	0	87.7	51	128	0.3994	9.36	30	
Heptachlor epoxide	0.420	0.025	0.5000	0	84.0	62	131	0.3879	7.89	30	
Methoxychlor	0.421	0.25	0.5000	0	84.3	56	150	0.3978	5.76	30	
Surr: Tetrachloro-m-xylene	0.447		0.5000		89.3	33	138		0	30	
Surr: Decachlorobiphenyl	0.425		0.5000		85.0	29	135		0	30	

Sample ID: MB-39306	SampType: MBLK	TestCode: 8081_W_PGE	Units: µg/L	Prep Date: 3/20/2012	RunNo: 83714
Client ID: PBW	Batch ID: 39306	TestNo: EPA 8081A	EPA 3510C	Analysis Date: 3/22/2012	SeqNo: 1376925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.050									
4,4´-DDE	ND	0.050									
4,4´-DDT	ND	0.050									
Aldrin	ND	0.025									
alpha-BHC	ND	0.025									
alpha-Chlordane	ND	0.025									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: **MB-39306**	SampType: **MBLK**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **3/20/2012**	RunNo: **83714**
Client ID: **PBW**	Batch ID: **39306**	TestNo: **EPA 8081A**	**EPA 3510C**	Analysis Date: **3/22/2012**	SeqNo: **1376925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
beta-BHC	ND	0.025									
delta-BHC	ND	0.025									
Dieldrin	ND	0.050									
Endosulfan I	ND	0.025									
Endosulfan II	ND	0.050									
Endosulfan sulfate	ND	0.050									
Endrin	ND	0.050									
Endrin aldehyde	ND	0.050									
gamma-BHC	ND	0.025									
gamma-Chlordane	ND	0.025									
Heptachlor	ND	0.025									
Heptachlor epoxide	ND	0.025									
Methoxychlor	ND	0.25									
Toxaphene	ND	2.5									
Surr: Tetrachloro-m-xylene	0.389		0.5000		77.8	33	138				
Surr: Decachlorobiphenyl	0.400		0.5000		79.9	29	135				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

C1-939

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007489
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007489-001

Client Sample ID: HNWR-01-004
Collection Date: 3/14/2012 12:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PCBS BY GC/ECD							
	EPA 3510C			**EPA 8082**			
RunID: **GC5_120322B**	QC Batch: **39306**			PrepDate:	**3/20/2012**		Analyst: **MDM**
Aroclor 1016	ND	0.20	0.53		µg/L	1	3/22/2012 05:06 PM
Aroclor 1221	ND	0.52	1.1		µg/L	1	3/22/2012 05:06 PM
Aroclor 1232	ND	0.27	0.53		µg/L	1	3/22/2012 05:06 PM
Aroclor 1242	ND	0.24	0.53		µg/L	1	3/22/2012 05:06 PM
Aroclor 1248	ND	0.15	0.53		µg/L	1	3/22/2012 05:06 PM
Aroclor 1254	ND	0.26	0.53		µg/L	1	3/22/2012 05:06 PM
Aroclor 1260	ND	0.074	0.53		µg/L	1	3/22/2012 05:06 PM
Surr: Decachlorobiphenyl	69.9	0	29-133		%REC	1	3/22/2012 05:06 PM
Surr: Tetrachloro-m-xylene	52.6	0	50-120		%REC	1	3/22/2012 05:06 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_W_PGE

Sample ID: **LCS-39306_PCB**	SampType: **LCS**	TestCode: **8082_W_PGE**	Units: **µg/L**	Prep Date: **3/20/2012**	RunNo: **83701**
Client ID: **LCSW**	Batch ID: **39306**	TestNo: **EPA 8082**	**EPA 3510C**	Analysis Date: **3/22/2012**	SeqNo: **1376444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	3.566	0.50	5.000	0	71.3	40	144				
Aroclor 1260	3.650	0.50	5.000	0	73.0	45	145				
Surr: Decachlorobiphenyl	0.318		0.5000		63.7	29	133				
Surr: Tetrachloro-m-xylene	0.303		0.5000		60.6	50	120				

Sample ID: **LCSD-39306_PCB**	SampType: **LCSD**	TestCode: **8082_W_PGE**	Units: **µg/L**	Prep Date: **3/20/2012**	RunNo: **83701**
Client ID: **LCSS02**	Batch ID: **39306**	TestNo: **EPA 8082**	**EPA 3510C**	Analysis Date: **3/22/2012**	SeqNo: **1376445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	4.535	0.50	5.000	0	90.7	40	144	3.566	23.9	30	
Aroclor 1260	4.117	0.50	5.000	0	82.3	45	145	3.650	12.0	30	
Surr: Decachlorobiphenyl	0.394		0.5000		78.9	29	133		0		
Surr: Tetrachloro-m-xylene	0.374		0.5000		74.8	50	120		0		

Sample ID: **MB-39306**	SampType: **MBLK**	TestCode: **8082_W_PGE**	Units: **µg/L**	Prep Date: **3/20/2012**	RunNo: **83701**
Client ID: **PBW**	Batch ID: **39306**	TestNo: **EPA 8082**	**EPA 3510C**	Analysis Date: **3/22/2012**	SeqNo: **1376446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.50									
Aroclor 1221	ND	1.0									
Aroclor 1232	ND	0.50									
Aroclor 1242	ND	0.50									
Aroclor 1248	ND	0.50									
Aroclor 1254	ND	0.50									
Aroclor 1260	ND	0.50									
Surr: Decachlorobiphenyl	0.368		0.5000		73.6	29	133				
Surr: Tetrachloro-m-xylene	0.384		0.5000		76.8	50	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

J-1999

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007489
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007489-001

Client Sample ID: HNWR-01-004
Collection Date: 3/14/2012 12:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS1_120320A**	QC Batch: **D12VW028**			PrepDate:			Analyst: **QBM**
1,1,1,2-Tetrachloroethane	ND	0.061	1.0		ug/L	1	3/20/2012 03:46 PM
1,1,1-Trichloroethane	ND	0.068	1.0		ug/L	1	3/20/2012 03:46 PM
1,1,2,2-Tetrachloroethane	ND	0.054	1.0		ug/L	1	3/20/2012 03:46 PM
1,1,2-Trichloroethane	ND	0.083	1.0		ug/L	1	3/20/2012 03:46 PM
1,1-Dichloroethane	ND	0.099	1.0		ug/L	1	3/20/2012 03:46 PM
1,1-Dichloroethene	ND	0.094	1.0		ug/L	1	3/20/2012 03:46 PM
1,1-Dichloropropene	ND	0.082	1.0		ug/L	1	3/20/2012 03:46 PM
1,2,3-Trichlorobenzene	ND	0.10	1.0		ug/L	1	3/20/2012 03:46 PM
1,2,3-Trichloropropane	ND	0.12	1.0		ug/L	1	3/20/2012 03:46 PM
1,2,4-Trichlorobenzene	ND	0.12	1.0		ug/L	1	3/20/2012 03:46 PM
1,2,4-Trimethylbenzene	ND	0.095	1.0		ug/L	1	3/20/2012 03:46 PM
1,2-Dibromo-3-chloropropane	ND	0.15	2.0		ug/L	1	3/20/2012 03:46 PM
1,2-Dibromoethane	ND	0.14	1.0		ug/L	1	3/20/2012 03:46 PM
1,2-Dichlorobenzene	ND	0.070	1.0		ug/L	1	3/20/2012 03:46 PM
1,2-Dichloroethane	ND	0.17	1.0		ug/L	1	3/20/2012 03:46 PM
1,2-Dichloropropane	ND	0.085	1.0		ug/L	1	3/20/2012 03:46 PM
1,3,5-Trimethylbenzene	ND	0.087	1.0		ug/L	1	3/20/2012 03:46 PM
1,3-Dichlorobenzene	ND	0.090	1.0		ug/L	1	3/20/2012 03:46 PM
1,3-Dichloropropane	ND	0.074	1.0		ug/L	1	3/20/2012 03:46 PM
1,4-Dichlorobenzene	ND	0.092	1.0		ug/L	1	3/20/2012 03:46 PM
2,2-Dichloropropane	ND	0.061	1.0		ug/L	1	3/20/2012 03:46 PM
2-Butanone	ND	1.0	10		ug/L	1	3/20/2012 03:46 PM
2-Chlorotoluene	ND	0.080	1.0		ug/L	1	3/20/2012 03:46 PM
4-Chlorotoluene	ND	0.10	1.0		ug/L	1	3/20/2012 03:46 PM
4-Isopropyltoluene	ND	0.080	1.0		ug/L	1	3/20/2012 03:46 PM
4-Methyl-2-pentanone	ND	0.76	10		ug/L	1	3/20/2012 03:46 PM
Acetone	ND	1.6	10		ug/L	1	3/20/2012 03:46 PM
Acrolein	ND	4.3	20		ug/L	1	3/20/2012 03:46 PM
Acrylonitrile	ND	0.61	20		ug/L	1	3/20/2012 03:46 PM
Benzene	ND	0.075	1.0		ug/L	1	3/20/2012 03:46 PM
Bromobenzene	ND	0.082	1.0		ug/L	1	3/20/2012 03:46 PM
Bromochloromethane	ND	0.15	1.0		ug/L	1	3/20/2012 03:46 PM
Bromodichloromethane	ND	0.063	1.0		ug/L	1	3/20/2012 03:46 PM
Bromoform	ND	0.086	1.0		ug/L	1	3/20/2012 03:46 PM
Bromomethane	ND	0.13	1.0		ug/L	1	3/20/2012 03:46 PM
Carbon disulfide	ND	0.054	1.0		ug/L	1	3/20/2012 03:46 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007489
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007489-001

Client Sample ID: HNWR-01-004
Collection Date: 3/14/2012 12:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS				**EPA 8260B**			
RunID: **MS1_120320A**	QC Batch: **D12VW028**			PrepDate:			Analyst: **QBM**
Carbon tetrachloride	ND	0.10	1.0		ug/L	1	3/20/2012 03:46 PM
Chlorobenzene	ND	0.092	1.0		ug/L	1	3/20/2012 03:46 PM
Chloroethane	ND	0.14	1.0		ug/L	1	3/20/2012 03:46 PM
Chloroform	ND	0.058	1.0		ug/L	1	3/20/2012 03:46 PM
Chloromethane	ND	0.054	1.0		ug/L	1	3/20/2012 03:46 PM
cis-1,2-Dichloroethene	ND	0.11	1.0		ug/L	1	3/20/2012 03:46 PM
cis-1,3-Dichloropropene	ND	0.10	1.0		ug/L	1	3/20/2012 03:46 PM
Dibromochloromethane	ND	0.061	1.0		ug/L	1	3/20/2012 03:46 PM
Dibromomethane	ND	0.15	1.0		ug/L	1	3/20/2012 03:46 PM
Dichlorodifluoromethane	ND	0.12	1.0		ug/L	1	3/20/2012 03:46 PM
Ethylbenzene	ND	0.051	1.0		ug/L	1	3/20/2012 03:46 PM
Freon-113	ND	0.080	1.0		ug/L	1	3/20/2012 03:46 PM
Hexachlorobutadiene	ND	0.17	1.0		ug/L	1	3/20/2012 03:46 PM
Isopropylbenzene	ND	0.057	1.0		ug/L	1	3/20/2012 03:46 PM
m,p-Xylene	ND	0.17	1.0		ug/L	1	3/20/2012 03:46 PM
Methylene chloride	ND	0.10	5.0		ug/L	1	3/20/2012 03:46 PM
MTBE	ND	0.089	1.0		ug/L	1	3/20/2012 03:46 PM
n-Butylbenzene	ND	0.082	1.0		ug/L	1	3/20/2012 03:46 PM
n-Propylbenzene	ND	0.087	1.0		ug/L	1	3/20/2012 03:46 PM
Naphthalene	ND	0.056	1.0		ug/L	1	3/20/2012 03:46 PM
o-Xylene	ND	0.077	1.0		ug/L	1	3/20/2012 03:46 PM
sec-Butylbenzene	ND	0.098	1.0		ug/L	1	3/20/2012 03:46 PM
Styrene	ND	0.072	1.0		ug/L	1	3/20/2012 03:46 PM
tert-Butylbenzene	ND	0.062	1.0		ug/L	1	3/20/2012 03:46 PM
Tetrachloroethene	ND	0.13	1.0		ug/L	1	3/20/2012 03:46 PM
Toluene	ND	0.12	2.5		ug/L	1	3/20/2012 03:46 PM
trans-1,2-Dichloroethene	ND	0.094	1.0		ug/L	1	3/20/2012 03:46 PM
trans-1,3-Dichloropropene	ND	0.10	1.0		ug/L	1	3/20/2012 03:46 PM
Trichloroethene	ND	0.060	1.0		ug/L	1	3/20/2012 03:46 PM
Trichlorofluoromethane	ND	0.097	1.0		ug/L	1	3/20/2012 03:46 PM
Vinyl chloride	ND	0.12	1.0		ug/L	1	3/20/2012 03:46 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	3/20/2012 03:46 PM
Surr: 1,2-Dichloroethane-d4	84.2	0	72-119		%REC	1	3/20/2012 03:46 PM
Surr: 4-Bromofluorobenzene	100	0	76-119		%REC	1	3/20/2012 03:46 PM
Surr: Dibromofluoromethane	88.0	0	85-115		%REC	1	3/20/2012 03:46 PM
Surr: Toluene-d8	100	0	81-120		%REC	1	3/20/2012 03:46 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120320LCS** SampType: **LCS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **LCSW** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.230	1.0	20.00	0	101	81	129				
1,1,1-Trichloroethane	21.590	1.0	20.00	0	108	67	132				
1,1,2,2-Tetrachloroethane	21.050	1.0	20.00	0	105	63	128				
1,1,2-Trichloroethane	20.090	1.0	20.00	0	100	75	125				
1,1-Dichloroethane	20.330	1.0	20.00	0	102	69	133				
1,1-Dichloroethene	20.320	1.0	20.00	0	102	68	130				
1,1-Dichloropropene	20.910	1.0	20.00	0	105	73	132				
1,2,3-Trichlorobenzene	21.510	1.0	20.00	0	108	67	137				
1,2,3-Trichloropropane	18.240	1.0	20.00	0	91.2	73	124				
1,2,4-Trichlorobenzene	21.180	1.0	20.00	0	106	66	134				
1,2,4-Trimethylbenzene	20.970	1.0	20.00	0	105	74	132				
1,2-Dibromo-3-chloropropane	19.320	2.0	20.00	0	96.6	50	132				
1,2-Dibromoethane	20.000	1.0	20.00	0	100	80	121				
1,2-Dichlorobenzene	20.560	1.0	20.00	0	103	71	122				
1,2-Dichloroethane	20.350	1.0	20.00	0	102	69	132				
1,2-Dichloropropane	20.430	1.0	20.00	0	102	75	125				
1,3,5-Trimethylbenzene	21.170	1.0	20.00	0	106	74	131				
1,3-Dichlorobenzene	20.360	1.0	20.00	0	102	75	124				
1,3-Dichloropropane	20.900	1.0	20.00	0	104	73	126				
1,4-Dichlorobenzene	19.780	1.0	20.00	0	98.9	74	123				
2,2-Dichloropropane	18.260	1.0	20.00	0	91.3	69	137				
2-Butanone	181.180	10	200.0	0	90.6	49	136				
2-Chlorotoluene	20.790	1.0	20.00	0	104	73	126				
4-Chlorotoluene	20.560	1.0	20.00	0	103	74	128				
4-Isopropyltoluene	21.440	1.0	20.00	0	107	73	130				
4-Methyl-2-pentanone	204.000	10	200.0	0	102	58	134				
Acetone	200.450	10	200.0	0	100	40	135				
Acrolein	208.910	20	200.0	0	104	75	125				
Acrylonitrile	201.900	20	200.0	0	101	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120320LCS** SampType: **LCS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **LCSW** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.080	1.0	20.00	0	100	81	122				
Bromobenzene	20.530	1.0	20.00	0	103	76	124				
Bromochloromethane	19.990	1.0	20.00	0	100	65	129				
Bromodichloromethane	20.840	1.0	20.00	0	104	76	121				
Bromoform	20.930	1.0	20.00	0	105	69	128				
Bromomethane	19.570	1.0	20.00	0	97.9	53	141				
Carbon disulfide	20.030	1.0	20.00	0	100	75	125				
Carbon tetrachloride	20.930	1.0	20.00	0	105	66	138				
Chlorobenzene	19.720	1.0	20.00	0	98.6	81	122				
Chloroethane	19.350	1.0	20.00	0	96.8	58	133				
Chloroform	20.390	1.0	20.00	0	102	69	128				
Chloromethane	19.200	1.0	20.00	0	96.0	56	131				
cis-1,2-Dichloroethene	20.310	1.0	20.00	0	102	72	126				
cis-1,3-Dichloropropene	20.760	1.0	20.00	0	104	69	131				
Dibromochloromethane	21.410	1.0	20.00	0	107	66	133				
Dibromomethane	20.380	1.0	20.00	0	102	76	125				
Dichlorodifluoromethane	19.340	1.0	20.00	0	96.7	53	153				
Ethylbenzene	19.620	1.0	20.00	0	98.1	73	127				
Freon-113	21.200	1.0	20.00	0	106	75	125				
Hexachlorobutadiene	20.920	1.0	20.00	0	105	67	131				
Isopropylbenzene	21.110	1.0	20.00	0	106	75	127				
m,p-Xylene	40.490	1.0	40.00	0	101	76	128				
Methylene chloride	19.270	5.0	20.00	0	96.4	63	137				
MTBE	18.200	1.0	20.00	0	91.0	65	123				
n-Butylbenzene	21.350	1.0	20.00	0	107	69	137				
n-Propylbenzene	20.880	1.0	20.00	0	104	72	129				
Naphthalene	22.060	1.0	20.00	0	110	54	138				
o-Xylene	20.870	1.0	20.00	0	104	80	121				
sec-Butylbenzene	21.200	1.0	20.00	0	106	72	127				
Styrene	21.050	1.0	20.00	0	105	65	134				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120320LCS** SampType: **LCS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **LCSW** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
tert-Butylbenzene	21.360	1.0	20.00	0	107	70	129				
Tetrachloroethene	19.670	1.0	20.00	0	98.4	66	128				
Toluene	19.190	2.5	20.00	0	96.0	77	122				
trans-1,2-Dichloroethene	21.070	1.0	20.00	0	105	63	137				
trans-1,3-Dichloropropene	20.750	1.0	20.00	0	104	59	135				
Trichloroethene	19.900	1.0	20.00	0	99.5	70	127				
Trichlorofluoromethane	20.080	1.0	20.00	0	100	57	129				
Vinyl chloride	19.740	1.0	20.00	0	98.7	50	134				
Xylenes, Total	61.360	2.0	60.00	0	102	75	125				
Surr: 1,2-Dichloroethane-d4	25.970		25.00		104	72	119				
Surr: 4-Bromofluorobenzene	25.280		25.00		101	76	119				
Surr: Dibromofluoromethane	26.040		25.00		104	85	115				
Surr: Toluene-d8	24.440		25.00		97.8	81	120				

Sample ID: **N007489-001LMS** SampType: **MS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **ZZZZZZ** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	19.890	1.0	20.00	0	99.4	81	129				
1,1,1-Trichloroethane	20.890	1.0	20.00	0	104	67	132				
1,1,2,2-Tetrachloroethane	20.800	1.0	20.00	0	104	63	128				
1,1,2-Trichloroethane	19.310	1.0	20.00	0	96.6	75	125				
1,1-Dichloroethane	19.880	1.0	20.00	0	99.4	69	133				
1,1-Dichloroethene	19.380	1.0	20.00	0	96.9	68	130				
1,1-Dichloropropene	20.680	1.0	20.00	0	103	73	132				
1,2,3-Trichlorobenzene	19.890	1.0	20.00	0	99.4	67	137				
1,2,3-Trichloropropane	17.530	1.0	20.00	0	87.6	73	124				
1,2,4-Trichlorobenzene	20.700	1.0	20.00	0	104	66	134				
1,2,4-Trimethylbenzene	18.420	1.0	20.00	0	92.1	74	132				
1,2-Dibromo-3-chloropropane	18.590	2.0	20.00	0	93.0	50	132				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007489-001LMS** SampType: **MS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **ZZZZZZ** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	19.860	1.0	20.00	0	99.3	80	121				
1,2-Dichlorobenzene	19.730	1.0	20.00	0	98.6	71	122				
1,2-Dichloroethane	20.110	1.0	20.00	0	101	69	132				
1,2-Dichloropropane	20.340	1.0	20.00	0	102	75	125				
1,3,5-Trimethylbenzene	18.600	1.0	20.00	0	93.0	74	131				
1,3-Dichlorobenzene	19.920	1.0	20.00	0	99.6	75	124				
1,3-Dichloropropane	20.390	1.0	20.00	0	102	73	126				
1,4-Dichlorobenzene	19.070	1.0	20.00	0	95.4	74	123				
2,2-Dichloropropane	18.110	1.0	20.00	0	90.6	69	137				
2-Butanone	160.270	10	200.0	0	80.1	49	136				
2-Chlorotoluene	19.620	1.0	20.00	0	98.1	73	126				
4-Chlorotoluene	19.930	1.0	20.00	0	99.7	74	128				
4-Isopropyltoluene	20.250	1.0	20.00	0	101	73	130				
4-Methyl-2-pentanone	196.750	10	200.0	0	98.4	58	134				
Acetone	145.380	10	200.0	0	72.7	40	135				
Acrolein	196.580	20	200.0	0	98.3	75	125				
Acrylonitrile	191.120	20	200.0	0	95.6	75	125				
Benzene	19.960	1.0	20.00	0	99.8	81	122				
Bromobenzene	19.560	1.0	20.00	0	97.8	76	124				
Bromochloromethane	19.280	1.0	20.00	0	96.4	65	129				
Bromodichloromethane	20.480	1.0	20.00	0	102	76	121				
Bromoform	20.550	1.0	20.00	0	103	69	128				
Bromomethane	18.960	1.0	20.00	0	94.8	53	141				
Carbon disulfide	19.590	1.0	20.00	0	98.0	75	125				
Carbon tetrachloride	20.260	1.0	20.00	0	101	66	138				
Chlorobenzene	19.350	1.0	20.00	0	96.8	81	122				
Chloroethane	19.030	1.0	20.00	0	95.2	58	133				
Chloroform	20.160	1.0	20.00	0	101	69	128				
Chloromethane	18.760	1.0	20.00	0	93.8	56	131				
cis-1,2-Dichloroethene	20.040	1.0	20.00	0	100	72	126				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007489-001LMS** SampType: **MS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **ZZZZZZ** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	20.550	1.0	20.00	0	103	69	131				
Dibromochloromethane	20.860	1.0	20.00	0	104	66	133				
Dibromomethane	20.150	1.0	20.00	0	101	76	125				
Dichlorodifluoromethane	19.180	1.0	20.00	0	95.9	53	153				
Ethylbenzene	19.020	1.0	20.00	0	95.1	73	127				
Freon-113	20.150	1.0	20.00	0	101	75	125				
Hexachlorobutadiene	19.380	1.0	20.00	0	96.9	67	131				
Isopropylbenzene	20.070	1.0	20.00	0	100	75	127				
m,p-Xylene	38.450	1.0	40.00	0	96.1	76	128				
Methylene chloride	18.800	5.0	20.00	0.5400	91.3	63	137				
MTBE	17.710	1.0	20.00	0	88.6	65	123				
n-Butylbenzene	20.480	1.0	20.00	0	102	69	137				
n-Propylbenzene	19.960	1.0	20.00	0	99.8	72	129				
Naphthalene	19.940	1.0	20.00	0	99.7	54	138				
o-Xylene	19.830	1.0	20.00	0	99.2	80	121				
sec-Butylbenzene	20.060	1.0	20.00	0	100	72	127				
Styrene	17.220	1.0	20.00	0	86.1	65	134				
tert-Butylbenzene	20.070	1.0	20.00	0	100	70	129				
Tetrachloroethene	19.310	1.0	20.00	0	96.6	66	128				
Toluene	18.890	2.5	20.00	0	94.4	77	122				
trans-1,2-Dichloroethene	20.280	1.0	20.00	0	101	63	137				
trans-1,3-Dichloropropene	20.190	1.0	20.00	0	101	59	135				
Trichloroethene	19.550	1.0	20.00	0	97.8	70	127				
Trichlorofluoromethane	19.130	1.0	20.00	0	95.7	57	129				
Vinyl chloride	19.250	1.0	20.00	0	96.2	50	134				
Xylenes, Total	58.280	2.0	60.00	0	97.1	75	125				
Surr: 1,2-Dichloroethane-d4	25.500		25.00		102	72	119				
Surr: 4-Bromofluorobenzene	25.100		25.00		100	76	119				
Surr: Dibromofluoromethane	25.270		25.00		101	85	115				
Surr: Toluene-d8	24.000		25.00		96.0	81	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007489-001LMSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **ZZZZZZ** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.180	1.0	20.00	0	101	81	129	19.89	1.45	20	
1,1,1-Trichloroethane	21.550	1.0	20.00	0	108	67	132	20.89	3.11	20	
1,1,2,2-Tetrachloroethane	21.100	1.0	20.00	0	106	63	128	20.80	1.43	20	
1,1,2-Trichloroethane	19.800	1.0	20.00	0	99.0	75	125	19.31	2.51	20	
1,1-Dichloroethane	20.380	1.0	20.00	0	102	69	133	19.88	2.48	20	
1,1-Dichloroethene	19.810	1.0	20.00	0	99.0	68	130	19.38	2.19	20	
1,1-Dichloropropene	21.360	1.0	20.00	0	107	73	132	20.68	3.24	20	
1,2,3-Trichlorobenzene	20.980	1.0	20.00	0	105	67	137	19.89	5.33	20	
1,2,3-Trichloropropane	18.280	1.0	20.00	0	91.4	73	124	17.53	4.19	20	
1,2,4-Trichlorobenzene	21.320	1.0	20.00	0	107	66	134	20.70	2.95	20	
1,2,4-Trimethylbenzene	18.200	1.0	20.00	0	91.0	74	132	18.42	1.20	20	
1,2-Dibromo-3-chloropropane	18.910	2.0	20.00	0	94.6	50	132	18.59	1.71	20	
1,2-Dibromoethane	20.090	1.0	20.00	0	100	80	121	19.86	1.15	20	
1,2-Dichlorobenzene	20.250	1.0	20.00	0	101	71	122	19.73	2.60	20	
1,2-Dichloroethane	20.380	1.0	20.00	0	102	69	132	20.11	1.33	20	
1,2-Dichloropropane	20.710	1.0	20.00	0	104	75	125	20.34	1.80	20	
1,3,5-Trimethylbenzene	18.750	1.0	20.00	0	93.8	74	131	18.60	0.803	20	
1,3-Dichlorobenzene	20.450	1.0	20.00	0	102	75	124	19.92	2.63	20	
1,3-Dichloropropane	20.760	1.0	20.00	0	104	73	126	20.39	1.80	20	
1,4-Dichlorobenzene	19.850	1.0	20.00	0	99.2	74	123	19.07	4.01	20	
2,2-Dichloropropane	18.740	1.0	20.00	0	93.7	69	137	18.11	3.42	20	
2-Butanone	162.740	10	200.0	0	81.4	49	136	160.3	1.53	20	
2-Chlorotoluene	20.340	1.0	20.00	0	102	73	126	19.62	3.60	20	
4-Chlorotoluene	20.640	1.0	20.00	0	103	74	128	19.93	3.50	20	
4-Isopropyltoluene	20.990	1.0	20.00	0	105	73	130	20.25	3.59	20	
4-Methyl-2-pentanone	198.830	10	200.0	0	99.4	58	134	196.8	1.05	20	
Acetone	143.620	10	200.0	0	71.8	40	135	145.4	1.22	20	
Acrolein	208.850	20	200.0	0	104	75	125	196.6	6.05	20	
Acrylonitrile	202.700	20	200.0	0	101	75	125	191.1	5.88	20	
Benzene	20.420	1.0	20.00	0	102	81	122	19.96	2.28	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SDG 69955

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007489-001LMSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **ZZZZZZ** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	20.190	1.0	20.00	0	101	76	124	19.56	3.17	20	
Bromochloromethane	19.530	1.0	20.00	0	97.6	65	129	19.28	1.29	20	
Bromodichloromethane	20.770	1.0	20.00	0	104	76	121	20.48	1.41	20	
Bromoform	21.170	1.0	20.00	0	106	69	128	20.55	2.97	20	
Bromomethane	19.350	1.0	20.00	0	96.8	53	141	18.96	2.04	20	
Carbon disulfide	19.960	1.0	20.00	0	99.8	75	125	19.59	1.87	20	
Carbon tetrachloride	20.470	1.0	20.00	0	102	66	138	20.26	1.03	20	
Chlorobenzene	19.480	1.0	20.00	0	97.4	81	122	19.35	0.670	20	
Chloroethane	19.440	1.0	20.00	0	97.2	58	133	19.03	2.13	20	
Chloroform	20.340	1.0	20.00	0	102	69	128	20.16	0.889	20	
Chloromethane	19.340	1.0	20.00	0	96.7	56	131	18.76	3.04	20	
cis-1,2-Dichloroethene	20.350	1.0	20.00	0	102	72	126	20.04	1.54	20	
cis-1,3-Dichloropropene	20.810	1.0	20.00	0	104	69	131	20.55	1.26	20	
Dibromochloromethane	21.270	1.0	20.00	0	106	66	133	20.86	1.95	20	
Dibromomethane	20.590	1.0	20.00	0	103	76	125	20.15	2.16	20	
Dichlorodifluoromethane	19.550	1.0	20.00	0	97.8	53	153	19.18	1.91	20	
Ethylbenzene	19.490	1.0	20.00	0	97.5	73	127	19.02	2.44	20	
Freon-113	20.810	1.0	20.00	0	104	75	125	20.15	3.22	20	
Hexachlorobutadiene	20.110	1.0	20.00	0	101	67	131	19.38	3.70	20	
Isopropylbenzene	20.920	1.0	20.00	0	105	75	127	20.07	4.15	20	
m,p-Xylene	38.760	1.0	40.00	0	96.9	76	128	38.45	0.803	20	
Methylene chloride	19.460	5.0	20.00	0.5400	94.6	63	137	18.80	3.45	20	
MTBE	17.940	1.0	20.00	0	89.7	65	123	17.71	1.29	20	
n-Butylbenzene	21.300	1.0	20.00	0	106	69	137	20.48	3.93	20	
n-Propylbenzene	20.570	1.0	20.00	0	103	72	129	19.96	3.01	20	
Naphthalene	20.160	1.0	20.00	0	101	54	138	19.94	1.10	20	
o-Xylene	20.090	1.0	20.00	0	100	80	121	19.83	1.30	20	
sec-Butylbenzene	20.860	1.0	20.00	0	104	72	127	20.06	3.91	20	
Styrene	15.680	1.0	20.00	0	78.4	65	134	17.22	9.36	20	
tert-Butylbenzene	20.670	1.0	20.00	0	103	70	129	20.07	2.95	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007489-001LMSD**	SampType: **MSD**	TestCode: **8260_WP_LL**	Units: **ug/L**	Prep Date:	RunNo: **83654**
Client ID: **ZZZZZZ**	Batch ID: **D12VW028**	TestNo: **EPA 8260B**		Analysis Date: **3/20/2012**	SeqNo: **1375180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	19.970	1.0	20.00	0	99.8	66	128	19.31	3.36	20	
Toluene	19.190	2.5	20.00	0	96.0	77	122	18.89	1.58	20	
trans-1,2-Dichloroethene	20.790	1.0	20.00	0	104	63	137	20.28	2.48	20	
trans-1,3-Dichloropropene	20.670	1.0	20.00	0	103	59	135	20.19	2.35	20	
Trichloroethene	20.170	1.0	20.00	0	101	70	127	19.55	3.12	20	
Trichlorofluoromethane	19.900	1.0	20.00	0	99.5	57	129	19.13	3.95	20	
Vinyl chloride	19.780	1.0	20.00	0	98.9	50	134	19.25	2.72	20	
Xylenes, Total	58.850	2.0	60.00	0	98.1	75	125	58.28	0.973	20	
Surr: 1,2-Dichloroethane-d4	25.670		25.00		103	72	119		0		
Surr: 4-Bromofluorobenzene	25.420		25.00		102	76	119		0		
Surr: Dibromofluoromethane	25.900		25.00		104	85	115		0		
Surr: Toluene-d8	24.260		25.00		97.0	81	120		0		

Sample ID: **D120320MB2**	SampType: **MBLK**	TestCode: **8260_WP_LL**	Units: **ug/L**	Prep Date:	RunNo: **83654**
Client ID: **PBW**	Batch ID: **D12VW028**	TestNo: **EPA 8260B**		Analysis Date: **3/20/2012**	SeqNo: **1375181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1;2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120320MB2**	SampType: **MBLK**	TestCode: **8260_WP_LL**	Units: **ug/L**	Prep Date:	RunNo: **83654**
Client ID: **PBW**	Batch ID: **D12VW028**	TestNo: **EPA 8260B**		Analysis Date: **3/20/2012**	SeqNo: **1375181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

95999

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120320MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83654**
Client ID: **PBW** Batch ID: **D12VW028** TestNo: **EPA 8260B** Analysis Date: **3/20/2012** SeqNo: **1375181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	21.660		25.00		86.6	72	119				
Surr: 4-Bromofluorobenzene	24.830		25.00		99.3	76	119				
Surr: Dibromofluoromethane	22.410		25.00		89.6	85	115				
Surr: Toluene-d8	25.190		25.00		101	81	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007489
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007489-001

Client Sample ID: HNWR-01-004
Collection Date: 3/14/2012 12:45:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM							
EPA 3510C			**EPA 8270CSIM**				
RunID: **MS4_120321A**	QC Batch: **39294**			PrepDate:	**3/19/2012**		Analyst: **MDM**
1-Methylnaphthalene	ND	0.025	0.22		ug/L	1	3/21/2012 11:41 AM
2-Methylnaphthalene	ND	0.047	0.22		ug/L	1	3/21/2012 11:41 AM
Acenaphthene	ND	0.025	0.22		ug/L	1	3/21/2012 11:41 AM
Acenaphthylene	ND	0.028	0.22		ug/L	1	3/21/2012 11:41 AM
Anthracene	ND	0.027	0.22		ug/L	1	3/21/2012 11:41 AM
Benzo(a)anthracene	ND	0.017	0.22		ug/L	1	3/21/2012 11:41 AM
Benzo(a)pyrene	ND	0.025	0.22		ug/L	1	3/21/2012 11:41 AM
Benzo(b)fluoranthene	ND	0.019	0.22		ug/L	1	3/21/2012 11:41 AM
Benzo(g,h,i)perylene	ND	0.017	0.22		ug/L	1	3/21/2012 11:41 AM
Benzo(k)fluoranthene	ND	0.029	0.22		ug/L	1	3/21/2012 11:41 AM
Chrysene	ND	0.028	0.22		ug/L	1	3/21/2012 11:41 AM
Dibenz(a,h)anthracene	ND	0.027	0.22		ug/L	1	3/21/2012 11:41 AM
Fluoranthene	ND	0.028	0.22		ug/L	1	3/21/2012 11:41 AM
Fluorene	ND	0.017	0.22		ug/L	1	3/21/2012 11:41 AM
Indeno(1,2,3-cd)pyrene	ND	0.020	0.22		ug/L	1	3/21/2012 11:41 AM
Naphthalene	ND	0.028	0.22		ug/L	1	3/21/2012 11:41 AM
Phenanthrene	ND	0.027	0.22		ug/L	1	3/21/2012 11:41 AM
Pyrene	ND	0.028	0.22		ug/L	1	3/21/2012 11:41 AM
Surr: 1,2-Dichlorobenzene-d4	52.0	0	27-100		%REC	1	3/21/2012 11:41 AM
Surr: 2-Fluorobiphenyl	61.0	0	34-135		%REC	1	3/21/2012 11:41 AM
Surr: 4-Terphenyl-d14	81.0	0	34-167		%REC	1	3/21/2012 11:41 AM
Surr: Nitrobenzene-d5	74.0	0	25-135		%REC	1	3/21/2012 11:41 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

Date: *29-Mar-12*

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: **LCS-39294** SampType: **LCS** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83686**
Client ID: **LCSW** Batch ID: **39294** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **3/21/2012** SeqNo: **1376052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.680	0.20	1.000	0	68.0	35	131				
2-Methylnaphthalene	0.820	0.20	1.000	0	82.0	36	121				
Acenaphthene	0.790	0.20	1.000	0	79.0	39	125				
Acenaphthylene	0.800	0.20	1.000	0	80.0	43	140				
Anthracene	0.750	0.20	1.000	0	75.0	41	132				
Benzo(a)anthracene	1.000	0.20	1.000	0	100	58	141				
Benzo(a)pyrene	1.020	0.20	1.000	0	102	31	142				
Benzo(b)fluoranthene	1.160	0.20	1.000	0	116	42	156				
Benzo(g,h,i)perylene	1.130	0.20	1.000	0	113	12	171				
Benzo(k)fluoranthene	1.020	0.20	1.000	0	102	49	165				
Chrysene	0.930	0.20	1.000	0	93.0	51	155				
Dibenz(a,h)anthracene	1.140	0.20	1.000	0	114	28	153				
Fluoranthene	0.890	0.20	1.000	0	89.0	47	158				
Fluorene	0.850	0.20	1.000	0	85.0	40	140				
Indeno(1,2,3-cd)pyrene	1.110	0.20	1.000	0	111	20	167				
Naphthalene	0.760	0.20	1.000	0	76.0	39	125				
Phenanthrene	0.790	0.20	1.000	0	79.0	46	144				
Pyrene	0.830	0.20	1.000	0	83.0	39	158				
Surr: 1,2-Dichlorobenzene-d4	0.650		1.000		65.0	27	100				
Surr: 2-Fluorobiphenyl	0.780		1.000		78.0	34	135				
Surr: 4-Terphenyl-d14	0.860		1.000		86.0	34	167				
Surr: Nitrobenzene-d5	0.910		1.000		91.0	25	135				

Sample ID: **LCSD-39294** SampType: **LCSD** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83686**
Client ID: **LCSS02** Batch ID: **39294** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **3/21/2012** SeqNo: **1376053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.740	0.20	1.000	0	74.0	35	131	0.6800	8.45	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

00061

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: **LCSD-39294**	SampType: **LCSD**	TestCode: **8270_W_SIM**	Units: **ug/L**	Prep Date: **3/19/2012**	RunNo: **83686**
Client ID: **LCSS02**	Batch ID: **39294**	TestNo: **EPA 8270CSI**	**EPA 3510C**	Analysis Date: **3/21/2012**	SeqNo: **1376053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	0.880	0.20	1.000	0	88.0	36	121	0.8200	7.06	30	
Acenaphthene	0.850	0.20	1.000	0	85.0	39	125	0.7900	7.32	30	
Acenaphthylene	0.850	0.20	1.000	0	85.0	43	140	0.8000	6.06	30	
Anthracene	0.760	0.20	1.000	0	76.0	41	132	0.7500	1.32	30	
Benzo(a)anthracene	0.980	0.20	1.000	0	98.0	58	141	1.000	2.02	30	
Benzo(a)pyrene	1.000	0.20	1.000	0	100	31	142	1.020	1.98	30	
Benzo(b)fluoranthene	1.280	0.20	1.000	0	128	42	156	1.160	9.84	30	
Benzo(g,h,i)perylene	1.090	0.20	1.000	0	109	12	171	1.130	3.60	30	
Benzo(k)fluoranthene	0.870	0.20	1.000	0	87.0	49	165	1.020	15.9	30	
Chrysene	0.910	0.20	1.000	0	91.0	51	155	0.9300	2.17	30	
Dibenz(a,h)anthracene	1.110	0.20	1.000	0	111	28	153	1.140	2.67	30	
Fluoranthene	0.880	0.20	1.000	0	88.0	47	158	0.8900	1.13	30	
Fluorene	0.890	0.20	1.000	0	89.0	40	140	0.8500	4.60	30	
Indeno(1,2,3-cd)pyrene	1.070	0.20	1.000	0	107	20	167	1.110	3.67	30	
Naphthalene	0.810	0.20	1.000	0	81.0	39	125	0.7600	6.37	30	
Phenanthrene	0.820	0.20	1.000	0	82.0	46	144	0.7900	3.73	30	
Pyrene	0.830	0.20	1.000	0	83.0	39	158	0.8300	0	30	
Surr: 1,2-Dichlorobenzene-d4	0.690		1.000		69.0	27	100		0		
Surr: 2-Fluorobiphenyl	0.850		1.000		85.0	34	135		0		
Surr: 4-Terphenyl-d14	0.860		1.000		86.0	34	167		0		
Surr: Nitrobenzene-d5	0.940		1.000		94.0	25	135		0		

Sample ID: **MB-39294**	SampType: **MBLK**	TestCode: **8270_W_SIM**	Units: **ug/L**	Prep Date: **3/19/2012**	RunNo: **83686**
Client ID: **PBW**	Batch ID: **39294**	TestNo: **EPA 8270CSI**	**EPA 3510C**	Analysis Date: **3/21/2012**	SeqNo: **1376054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.20									
2-Methylnaphthalene	ND	0.20									
Acenaphthene	ND	0.20									
Acenaphthylene	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: **MB-39294** SampType: **MBLK** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **3/19/2012** RunNo: **83686**
Client ID: **PBW** Batch ID: **39294** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **3/21/2012** SeqNo: **1376054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Anthracene	ND	0.20									
Benzo(a)anthracene	ND	0.20									
Benzo(a)pyrene	ND	0.20									
Benzo(b)fluoranthene	ND	0.20									
Benzo(g,h,i)perylene	ND	0.20									
Benzo(k)fluoranthene	ND	0.20									
Chrysene	ND	0.20									
Dibenz(a,h)anthracene	ND	0.20									
Fluoranthene	ND	0.20									
Fluorene	ND	0.20									
Indeno(1,2,3-cd)pyrene	ND	0.20									
Naphthalene	ND	0.20									
Phenanthrene	ND	0.20									
Pyrene	ND	0.20									
Surr: 1,2-Dichlorobenzene-d4	0.750		1.000		75.0	27	100				
Surr: 2-Fluorobiphenyl	0.870		1.000		87.0	34	135				
Surr: 4-Terphenyl-d14	0.920		1.000		92.0	34	167				
Surr: Nitrobenzene-d5	1.010		1.000		101	25	135				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-004
Turnaround Time 10 Days
Shipping Date: 3/14/2012
COC Number: HNWR-004

	DATE	TIME	Matrix	Cr6 (E218.6) FF	Metals (6010B/6020A/7470Adis) FF T22:SbAsBaBeCdCrCoCuPbHgMoNi SeAgTlVZnAl	Metals (6010BFF) FF Na,K,Ca,Mg,Fe	Metals (6020AFF) FF As,Mn	Anions (E300.0) Chloride,Sulfate,Nitrate as N	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)	TOC (SM5310C)	Perchlorate (E314.0)	Cyanide (335.2)	TPH-Extractable (SW8015B-E)	PAHs (SW8270-Sim)	PCBs (SW8082)	Pesticides (SW8081A)	Herbicide (SW8151A)	VOCs (SW8260B)	TPH-Purgable (SW8015B)	Number of Containers	COMMENTS
Container:				250 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	1 Liter Poly	3 x 40 ml VOA	500 ml Poly	1L Amber	6X 1L Amber	6X 1L Amber	6X 1L Amber	6X 1L Amber	6X 1L Amber	3-40ml vials	3 x 40 ml VOA		
Preservatives:				(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	H2SO4, 4°C	4°C	NAOH	4°C	4°C	4°C	4°C	4°C	HCL,4°C	HCL,4°C		
Filtered:				Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Holding Time:				28	180	180	180	2	2	2	28	28	1	14	7	7	7	7	7	14	14		
HNWR-01-004	3-14-12	1245	water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	23	
TB01-004	"	1200	"						trip blank											X		~~50~~ 24	BC 1

TOTAL NUMBER OF CONTAINERS

	Signatures	Date/Time
Approved by		3-14-12
Sampled by		1715
Relinquished by		
Received by	PLN Baley	3/14/12 1715
Relinquished by		3/14/12 1747
Received by		3/14/12@1747

Shipping Details
Method of Shipment: FedEx
On Ice: ~~yes~~ / no 2+5°C
Airbill No: 1R#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

6363

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Advanced Technology Laboratories - Signal Hill
3283 Walnut Ave.
Signal Hill, California

TEL: (562) 989-4045
FAX: (562) 989-4045
Acct #:

Field Sampler: B. Collom

15-Mar-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 314.0	Requested Tests: SM4500-CN E	
N007489-001F / HNWR-01-004	Water	3/14/2012 12:45:00 PM	8OZP	1		
N007489-001G / HNWR-01-004	Water	3/14/2012 12:45:00 PM	32OZA		1	

3/23/12

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N007489 Please fax results by: Normal TAT

Please generate Level IV data package. CH2M Hill sample.

	Date/Time		Date/Time
Relinquished by:	3/15/12 @ 1700	**Received by:**	
Relinquished by:		**Received by:**	

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Test America
2800 George Washington Way
Richland, WA

TEL: (509) 375-3131
FAX: (509) 375-5590
Acct #:

Field Sampler: B. COLLOM

15-Mar-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
N007489-001K / HNWR-01-004	Water	3/14/2012 12:45:00 PM	32OZA	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: N007489 Please fax results by: Normal TAT

	Date/Time		Date/Time
Relinquished by:	3/15/12@1700	**Received by:**	
Relinquished by:		**Received by:**	

00067

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/14/2012	Workorder:	N007489
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 3/15/12

Reviewed By:

Glen S. Gesmundo

From: Glen S. Gesmundo
Sent: Wednesday, March 21, 2012 4:06 PM
To: 'Shawn.Duffy@CH2M.com'
Subject: PG&E Topock, 405681.MP.06.TS (N007489)

Per conversation, you are adding TSS analysis to HNWR-01-004 sample.

Thanks,

Glen Gesmundo
Advanced Technology Laboratories, Inc.
www.atl-labs.com
Tel: (702) 307-3248 ext. 406
Fax: (702) 307-2691

Advanced Technology Laboratories, Inc. is a full-service environmental lab providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. ATL is accredited by the State of California, NELAP and State of Nevada and holds various SBE, DBE and MBE certificates and a USDA soil permit. ATL takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates. Advanced Technology Labs - Your Partner for Quality Environmental Testing

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CLIENT CORRESPONDENCE LOG

DATE: 3/23/2012 1:56:49 PM

Client Name: -CH2M HILL-OAKLAND

ATL Workorder No.: N007489

DATE	CONTACT	CALL IN/OUT	ISSUE / PROBLEM	COMMENTS/CORRECTIVE ACTION	INITIAL
~~3/23/2012 1:51:14~~ 3/15/12 @1100	S. Duffy	OUT	Sample for Trip Blank got broken when pulling out of the cooler.	Client was informed and requested to put it on the case narrative.	marlonc

BC 3/23/12

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N007489-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.8992-60.8484)*1000000}{100}$$

$$= 508 \text{ mg/L}$$

Reporting result in two significant figures,

$$\text{TDS} = 510 \text{ mg/L}$$

NSh
3/23/12

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N007489-001C,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4372-1.4371)*1000000}{100}$$

$$= 1$$

Reporting result in two significant figures,

TSS = 1.0 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

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3/23/12
66681

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A \times DF$$

where:

A = µg /L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N007489-001A**, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 8.784912 * 2$$

$$= 17.57 \mu g/L$$

Reporting results in two significant figures:

Cr^{+6}, µg/L = 18

NS fn
3/16/12

QBM / 3/16/2012 6:55:33 PM

Sample ID: **N007489-001C @ Ph 8.02**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (10.275mL)

= **0.02433 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.35) (0.02433N) (1) * 1000

= **105.836 mg/L**

Reporting results in two significant figures,

= **110 mg/L** as CaCO3

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02433N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.35mL) (0.02433) (1) * 1000

= **105.836 mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	OH Alkalinity as $CaCO_3$	CO_3 Alkalinity as $CaCO_3$	HCO_3 Alkalinity as $CaCO_3$
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **105.836 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **110 mg/L**

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007489-001C**, concentration in mg/L are calculated as follows:

Sulfate, mg/L	=	8.834 * 5
	=	44.17 mg/L

Reporting **N007489-001C**, results in two significant figures,

Sulfate, mg/L = 44 mg/L

Sample Calculation

METHOD: EPA 314.0
TEST NAME: PERCHLORATE BY IC
MATRIX: Water

FORMULA:

Calculate the Perchlorate concentration, in µg/L, in the original sample as follows:

ClO_4^-, µg/L = A * DF

where:

A = ug/L, IC ClO_4^-, calculated concentration
DF = dilution factor

N007489-001F Asheville

For ~~N007329-004A~~, concentration in µg/L is calculated as follows:

ClO_4^-, µg/L = 0.0 * 1

= 0 µg/L

Reporting results in two significant figures,

ClO_4^-, µg/L = **ND**

SAMPLE CALCULATION

METHOD: SM4500-NH3C
TEST NAME: Ammonia-Nitrogen
MATRIX: Water

FORMULA:

Calculate the Ammonia as N concentration , in mg/L , in the original sample as follows:

Ammonia as N, mg/L = A*DF

Where:

A= mg/L, UV-VIS NH3 as N calculated concentration
DF= dilution factor

For **N007489-001D,** concentration in mg/L is calculated as follows:

Ammonia as N, mg/L = 0.119 *1
= 0.119 mg/L

Reporting result in two significant figures,

Ammonia as N = 0.12mg/L

NS fn
3/23/12

Sample Calculation

METHOD: SM5310C
TEST NAME: TOTAL ORGANIC CARBON
MATRIX: WATER

FORMULA:

Calculate the TOC concentration, in mg/L, in the original sample as follows:

TOC, mg/L = (A * DF) - B

where:

A = mg/L, instrument calculated concentration
DF = dilution factor
B = mg/L, TOC concentration in the calibration blank

For **N007489-001E**, concentration in mg/L are calculated as follows:

TOC, mg/L = (1.12* 1) – 0.158

= 0.962 mg/L

Reporting results in two significant figures,

TOC, mg/L = 0.96 mg/L

Since the reporting limit is 1.0 mg/L, therefore

TOC, mg/L = ND

3/26/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007489-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.11080* 1* (25/25) * 1000

= 110.80 ug/L

Reporting results in two significant figures,

Barium, ug/L = 110

JT / ICP-02 3/21/2012 4:01:15 PM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007489
Test Method: EPA 6010
Analysis Date: 03/20/12

Matrix: Water
Batch No.: 39297

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL.However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007489-001B-DT 5X	Aluminum	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Antimony	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Barium	ug/L	107.3246866	PASS	110.8020568	3.14%	10
N007489-001B-DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Copper	ug/L	4.093406974	NA	1.847792099	-121.53%	10
N007489-001B-DT 5X	Iron	ug/L	0	NA	15.23662426	100.00%	10
N007489-001B-DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Magnesium	ug/L	3134.991721	PASS	3221.97767	2.70%	10
N007489-001B-DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Silver	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007489-001B-DT 5X	Calcium	ug/L	18284.06439	PASS	19302.92816	5.28%	10
N007489-001B-DT 5X	Vanadium	ug/L	19.167422	NA	21.50856174	10.88%	10
N007489-001B-DT 5X	Zinc	ug/L	0	NA	16.41132856	100.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007489
Test Method: EPA 6010
Analysis Date: 03/20/12

Matrix: Water
Batch No.: 39297

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007489-001B DT 25X	Potassium	ug/L	3130.02992	NA	3957.16431	20.90%	10
N007489-001B DT 25X	Sodium	ug/L	121075.794	PASS	128298.702	5.63%	10

Note: NA - Not Applicable

JT / ICP-02 3/21/2012 4:01:17 PM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007489
Test Method: EPA 6010
Analysis Date: 03/21/12

Matrix: Water
Batch No.: 39297

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL.However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007489-001B-DT 5X	Molybdenum	ug/L	11.7373	NA	10.2553	-14.45%	10

Note: NA - Not Applicable

JT / ICP-02 3/21/2012 4:01:18 PM

Advanced Technology Laboratories, Inc.

Date: *21-Mar-12*

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007489-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83648**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5179.256	100	5000	0	104	75	125				
Antimony	262.841	20	250.0	0	105	75	125				
Barium	359.006	6.0	250.0	110.8	99.3	75	125				
Beryllium	258.810	2.0	250.0	0	104	75	125				
Cadmium	262.151	6.0	250.0	0	105	75	125				
Calcium	23587.996	1000	5000	19300	85.7	75	125				
Cobalt	273.995	6.0	250.0	0	110	75	125				
Copper	267.683	10	250.0	1.848	106	75	125				
Iron	5145.923	40	5000	15.24	103	75	125				
Lead	255.552	20	250.0	0	102	75	125				
Magnesium	8234.509	200	5000	3222	100	75	125				
Nickel	273.272	10	250.0	0	109	75	125				
Silver	253.901	6.0	250.0	0	102	75	125				
Vanadium	279.235	6.0	250.0	21.51	103	75	125				
Zinc	297.515	20	250.0	16.41	112	75	125				

Sample ID: **N007489-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83656**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/21/2012** SeqNo: **1375219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	270.556	10	250.0	10.26	104	75	125				

Sample ID: **N007489-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83657**
Client ID: **ZZZZZZ** Batch ID: **39297** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1375264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	11138.820	2500	6250	3957	115	75	125				
Sodium	272447.501	2500	125000	128300	115	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007489-001B**, the concentration in ug/L is calculated as follows:

Chromium, ug/L = 17.526 * 1 * (25/25)

= 17.526 ug/L

Reporting results in two significant figures,

Chromium, ug/L = 18

WSfn
3/24/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007489
Test Method: EPA 6020
Analysis Date: 03/20/12

Matrix: Water
Batch No.: 39299

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments: Analyzed By: Claire Ignacio
Dilution Test is not applicable, the calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007471-001B-DT 5X	Arsenic	µg/L	4.342970832	PASS	4.010323584	-8.29%	10
N007471-001B-DT 5X	Chromium	µg/L	37.68863183	PASS	36.96419938	-1.96%	11
N007471-001B-DT 5X	Manganese	µg/L	99.09967116	PASS	95.76468047	-3.48%	12
N007471-001B-DT 5X	Selenium	µg/L	0.584408708	NA	0.606033968	3.57%	13
N007471-001B-DT 5X	Thallium	µg/L	0	NA	0		14

Advanced Technology Laboratories, Inc.

Date: *24-Mar-12*

CLIENT: CH2M HILL
Work Order: N007489
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007471-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83700**
Client ID: **ZZZZZZ** Batch ID: **39299** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/20/2012** SeqNo: **1376433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.533	0.20	20.00	4.010	97.6	75	125				
Chromium	55.575	2.0	20.00	36.96	93.1	75	125				
Manganese	288.341	1.0	200.0	95.76	96.3	75	125				
Selenium	19.832	1.0	20.00	0.6060	96.1	75	125				
Thallium	19.882	1.0	20.00	0	99.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007489-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0 * 1 * (50/25) * 0.5

= 0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.0

Mercury, ug/L = ND

NS for
3/23/12

SAMPLE CALCULATION

METHOD: EPA 8015B
TEST NAME: Diesel Range Organics by GC/FID
MATRIX: Water

FORMULA:

Calculate the TPH-Diesel concentration, in ug/L, in the original sample as follows:

$$\text{TPH-Diesel, ug/mL} = \frac{A * 1mL * DF}{B}$$

Where:

A = ug/mL, GC TPH-Diesel calculated concentration
B = volume of sample in L
DF = Dilution factor

For **N007489-001H,** concentration in ug/L is calculated as follows:

$$\text{TPH-Diesel, ug/L} = \frac{179.015\ ug/mL * 1mL * 1}{0.940}$$

$$= 190.4415\ ug/L$$

Reporting result in two significant figures,

TPH-Diesel, ug/L = 190 ug/L

bs for
3/10/12

SAMPLE CALCULATION

METHOD: EPA 8015B
TEST NAME: Gasoline Range Organics by GC/FID
MATRIX: Water

FORMULA:

Calculate the TPH-Gasoline concentration, in ug/L , in the original sample as follows:

TPH-Gasoline, ug/L = A*DF*1000

Where:

A = mg/L, GC TPH-Gasoline calculated concentration

For **N007489-001M** concentration in ug/L are calculated as follows:

TPH-Gasoline, ug/L = 0.027 *1000

= 27 ug/L

Reporting result in two significant figures,

TPH-Gasoline = 27 ug/L

Since the reporting limit is 100 ug/L,

TPH-Gasoline= ND

OMS 3/19/12

SAMPLE CALCULATION

METHOD: EPA 8081
TEST NAME: Organochlorine Pesticides by GC/ECD
MATRIX: Water

FORMULA:

Calculate the OCP concentration, in ug/L, in the original sample as follows:

$$\text{OCP Analyte, ug/L} = \frac{A*0.005L*DF}{B}$$

Where:

A = ug/L, GC OCP Analyte calculated concentration
B = Volume of sample in L
DF = Dilution factor

For **N007489-001J,** concentration in ug/L is calculated as follows:

$$\text{Tetrachloro-m-xylene, ug/L} = \frac{50.526 * 0.005 *1}{0.940}$$

$$= 0.268755 \text{ ug/L}$$

Reporting result in two significant figures,

Tetrachloro-m-xylene, ug/L = 0.27 ug/L

WS for
3/28/12

SAMPLE CALCULATION

METHOD: EPA 8082
TEST NAME: Polychlorinated Biphenyls by GC/ECD
MATRIX: Water

FORMULA:

Calculate the PCB concentration, in ug/L, in the original sample as follows:

$$\text{PCB Aroclor, ug/L} = \frac{A*0.005L*DF}{B}$$

Where:

A = ug/L, GC PCB Aroclor calculated concentration
B = Volume of sample in L
DF = Dilution factor

For **N007489-001J,** concentration in ug/L is calculated as follows:

$$\text{Tetrachloro-m-xylene, ug/L} = \frac{52.551* 0.005 *1}{0.940L}$$

$$= 0.279527 \text{ ug/L}$$

Reporting result in two significant figures,

Tetrachloro-m-xylene, ug/L = 0.28 ug/L

WS for 3/28/12

SAMPLE CALCULATION

METHOD: EPA 8260B
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_X, ug/L = \frac{A_X * C_{IS}}{Ave\ RF * A_{IS}}$$

where:

A_x = Area of the TOTAL ion for the compound being measured
C_{IS} = Concentration of the specific internal standard in ug/L
A_{IS} = Area of the characteristic ion of the specific internal standard
C_x = Concentration of the compound being measured in ug/L

N007489-001L

For 1,2-Dichloroethane-d4 the corresponding Internal Standard is Pentafluorobenzene

Ave RF	0.361
Area of 1,2-Dichloroethane-d4	165945
Area of Internal Standard	545401
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of 1,2-Dichloroethane-d4 (ug/L)} = \frac{165945 * 25.00ug/L}{0.361 * 545401}$$

Conc of 1,2-Dichloroethane-d4 (ug/L)= 21.07080114

Reporting result in three significant figures,

Concentration of 1,2-Dichloroethane-d4 = 21.1 ug/L

SAMPLE CALCULATION

METHOD: EPA 8270C
TEST NAME: SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_X, ug/L = \frac{A_X * C_{IS} * V * 1000 * DF}{Ave\ RF * A_{IS} * Vx}$$

where:

A_x = Area of the TOTAL ion for the compound being measured
C_{IS} = Concentration of the specific internal standard in mg/L
A_{IS} = Area of the characteristic ion of the specific internal standard
C_x = Concentration of the compound being measured in ug/kg
V = Final Volume of sample in Liter
V_X = Volume of sample used in L
DF = Dilution Factor

N007489-001I

For 1,2-Dichlorobenzene-d4 the corresponding Internal Standard is 1,4-Dichlorobenzene-d4

Ave RF	0.794
Area of 1,2-Dichlorobenzene-d4	18811
Area of Internal Standard	90559
Conc of Internal Standard (mg/L)	2.00
Final Volume in L	0.001
Volume of sample in L	0.89
Dilution Factor	1

$$\text{Conc of 1,2-Dichlorobenzene-d4(ug/L)} = \frac{18811 * 2.00mg/L * 0.001L * 1000 * 1}{0.794 * 90559 * 0.89L}$$

Conc of 1,2-Dichlorobenzene-d4 (ug/L)= 0.587895

Reporting result in two significant figures,

Concentration of 1,2-Dichlorobenzene-d4 = 0.59 ug/L

ADVANCED TECHNOLOGY
LABORATORIES

March 27, 2012

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Marlon Cartin
Advanced Technology Laboratory-Las Vegas
3151 W Post Rd.
Las Vegas, NV 89118
Tel: (702) 307-2659
Fax:(702) 307-2691

Re: ATL Work Order Number : 1200950
Client Reference : [none]

Enclosed are the results for sample(s) received on March 16, 2012 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratory-Las Vegas	Project Number : -
3151 W Post Rd.	Report To : Marlon Cartin
Las Vegas , NV 89118	Reported : 03/27/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N007489-001G / HNWR-01-004	1200950-01	Water	3/14/12 12:45	3/16/12 11:03

CASE NARRATIVE

Sample Receiving/General Comments

1. All sample containers were received intact with proper chain of custody documentation.
2. Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.
3. Sample preservation was verified upon receipt of samples, if applicable.
4. All samples were analyzed within method holding times.

Advanced Technology Laboratory-Las Vegas	Project Number : -
3151 W Post Rd.	Report To : Marlon Cartin
Las Vegas , NV 89118	Reported : 03/27/2012

Client Sample ID N007489-001G / HNWR-01-004

Lab ID: 1200950-01

Cyanide, Total by SM4500-CN E **Analyst: AG**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Cyanide, Total	ND	0.01	0.006	1	B2C0649	03/22/2012	03/23/12 08:56	

QUALITY CONTROL SECTION

Cyanide, Total by SM4500-CN E - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2C0649 - Prep_WC_3_W									
Blank (B2C0649-BLK1)				Prepared: 3/22/2012 Analyzed: 3/23/2012					
Cyanide, Total	ND	0.01			NR				
LCS (B2C0649-BS1)				Prepared: 3/22/2012 Analyzed: 3/23/2012					
Cyanide, Total	0.4	0.01	0.400		99	80 - 120			
Matrix Spike (B2C0649-MS1)		**Source: 1200950-01**		Prepared: 3/22/2012 Analyzed: 3/23/2012					
Cyanide, Total	0.4	0.01	0.400	ND	99	80 - 120			
Matrix Spike Dup (B2C0649-MSD1)		**Source: 1200950-01**		Prepared: 3/22/2012 Analyzed: 3/23/2012					
Cyanide, Total	0.4	0.01	0.400	ND	102	80 - 120	3	20	

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atiglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Advanced Technology Laboratories - Signal Hill
3283 Walnut Ave.
Signal Hill, California

TEL: (562) 989-4045
FAX: (562) 989-4045
Acct #:

Field Sampler: B. Collom

15-Mar-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: ~~EPA 414.0~~	Requested Tests: SM4500-CN E	Requested Tests:
~~N007489-001F / HNWR-01-004~~	~~Water~~	~~3/14/2012 12:45:00 PM~~	~~60ZP~~	~~1~~		
120950 N007489-001G / HNWR-01-004	Water	3/14/2012 12:45:00 PM	32OZA		1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N007489 Please fax results by: Normal TAT

Please generate Level IV data package. CH2M Hill sample.

		Date/Time			Date/Time
Relinquished by:		3/15/12 @ 700	**Received by:**	FPDHL	3/16/12 1103
Relinquished by:			**Received by:**		

650 2.4 °C

ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1200950

Client: Advanced Technology Laboratory-Las Vegas	**Project Manager:** Rachelle Arada
Project: CH2M Hill_Level IV	**Project Number:** [none]

Report To:	**Invoice To:**
Advanced Technology Laboratory-Las Vegas	Advanced Technology Laboratory-Las Vegas
Marlon Cartin	Marlon Cartin
3151 W Post Rd.	3151 W Post Rd.
Las Vegas, NV 89118	Las Vegas, NV 89118
Phone: (702) 307-2659	Phone :(702) 307-2659
Fax: (702) 307-2691	Fax: (702) 307-2691

Date Due:	03/27/12 17:30 (7 day TAT)	Date Received:	03/16/12 11:03
Received By:	Ron Diwa	Date Logged In:	03/16/12 13:18
Logged In By:	Carmen Aguila	Shipped by:	GSO

Please review the checklist below. Any NO response signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed a as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (526) 989-4045.

Sample(s) received on ice?	Yes	☑	No	☐
Sample(s) received on blue ice?	Yes	☐	No	☑
Cooler temperature within acceptance limit?	Yes	☑	No	☐
Shipping container received in good condition?	Yes	☑	No	☐
Custody seals present on shipping container?	Yes	☐	No	☑
Custody seals intact on shipping container?	Yes	☐	No	☑
Custody seals present on sample bottles?	Yes	☐	No	☑
Custody seals intact on sample bottles?	Yes	☐	No	☑
Chain of Custody (COC) present?	Yes	☑	No	☐
Sampler name present in COC?	Yes	☑	No	☐
COC signed when relinquished and received?	Yes	☑	No	☐
COC agrees with sample labels?	Yes	☑	No	☐
Samples in proper container/bottle?	Yes	☑	No	☐
Sample containers intact?	Yes	☑	No	☐
Sufficient sample amount for indicated tests?	Yes	☑	No	☐
All samples received within holding time?	Yes	☑	No	☐
VOA vials for VOC meet headspace criteria?	Yes	☐	No	☑
Water samples meet preservation criteria?	Yes	☑	No	☐

Default Cooler	Temp: 2.4 °C

Sample Receipt Comments:

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Advanced Technology Laboratories - Signal Hill
3283 Walnut Ave.
Signal Hill, California

TEL: (562) 989-4045
FAX: (562) 989-4045
Acct #:

Field Sampler: B. BOLLOM

15-Mar-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				~~EPA 314.0~~	SM4500-CN E	
~~N007489-001F / HNWR-01-004~~	~~Water~~	~~3/14/2012 12:45:00 PM~~	~~8OZP~~	~~1~~		
N007489-001G / HNWR-01-004	Water	3/14/2012 12:45:00 PM	32OZA		1	

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: N007489 Please fax results by: Normal TAT
Please generate Level IV data package. CH2M Hill sample.

		Date/Time			Date/Time
Relinquished by:		3/15/12 @ 700	**Received by:**	FEDEX	3/16/12 1103
Relinquished by:			**Received by:**		

10

650 2.4 °C

ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1200950

Client: Advanced Technology Laboratory-Las Vegas	**Project Manager:** Rachelle Arada
Project: CH2M Hill_Level IV	**Project Number:** [none]

Report To:
Advanced Technology Laboratory-Las Vegas
Marlon Cartin
3151 W Post Rd.
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:
Advanced Technology Laboratory-Las Vegas
Marlon Cartin
3151 W Post Rd.
Las Vegas, NV 89118
Phone :(702) 307-2659
Fax: (702) 307-2691

Date Due:	03/27/12 17:30 (7 day TAT)	Date Received:	03/16/12 11:03
Received By:	Ron Diwa	Date Logged In:	03/16/12 13:18
Logged In By:	Carmen Aguila	Shipped by:	GSO

Please review the checklist below. Any NO response signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed a as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (526) 989-4045.

Sample(s) received on ice?	Yes	☑	No	☐
Sample(s) received on blue ice?	Yes	☐	No	☑
Cooler temperature within acceptance limit?	Yes	☑	No	☐
Shipping container received in good condition?	Yes	☑	No	☐
Custody seals present on shipping container?	Yes	☐	No	☑
Custody seals intact on shipping container?	Yes	☐	No	☑
Custody seals present on sample bottles?	Yes	☐	No	☑
Custody seals intact on sample bottles?	Yes	☐	No	☑
Chain of Custody (COC) present?	Yes	☑	No	☐
Sampler name present in COC?	Yes	☑	No	☐
COC signed when relinquished and received?	Yes	☑	No	☐
COC agrees with sample labels?	Yes	☑	No	☐
Samples in proper container/bottle?	Yes	☑	No	☐
Sample containers intact?	Yes	☑	No	☐
Sufficient sample amount for indicated tests?	Yes	☑	No	☐
All samples received within holding time?	Yes	☑	No	☐
VOA vials for VOC meet headspace criteria?	Yes	☐	No	☑
Water samples meet preservation criteria?	Yes	☑	No	☐

Default Cooler	Temp: 2.4 °C

Sample Receipt Comments:

SAMPLE CALCULATION

METHOD: SM 4500-CN E
TEST NAME: CYANIDE, TOTAL
MATRIX: WATER

FORMULA:

Calculate the cyanide concentration, in mg/L, in the original sample as follows:

$$C\ (mg/L) = C_X \times DF \times (V_D / V_S)$$

Where: C = sample concentration
C_X = concentration in mg/L from the spectra tape
V_D = volume of distillate, mL
W_S =volume of sample distilled, mL
DF = dilution factor

For **LCS (B2C0649-BS1),** concentration in mg/L is calculated as follows:

1. Cyanide (mg/L) = 0.397 * 1 * (50/50)

   Cyanide = 0.397

   Reporting result in one decimal digit,

   Cyanide = 0.4 mg/L

ANALYTICAL REPORT

Job Number: 580-31857-1

Job Description: Herbicides

For:
Advanced Technology Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118

Attention: Marlon Cartin

Approved for release.
Pam R Johnson
Project Manager I
4/2/2012 2:33 PM

Pam R Johnson
Project Manager I
pamr.johnson@testamericainc.com
04/02/2012

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This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

This report shall not be reproduced except in full, without prior express written approval by the laboratory. The results relate only to the item(s) tested and the sample(s) as received by the laboratory.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

CASE NARRATIVE

Client: Advanced Technology Laboratories
Project: Herbicides
Report Number: 580-31857-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 03/16/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 5.9 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

CHLORINATED HERBICIDES
Sample HNWR-01-004 (580-31857-1) was analyzed for chlorinated herbicides in accordance with EPA SW-846 8151A. The samples were prepared on 03/21/2012 and analyzed on 03/23/2012.

Internal standard (ISDT) response for the following sample HNWR-01-004 (580-31857-1) was outside control limits (49.2% vs 50%). The sample was diluted and re-analyzed with a passing internal standard value. Since both the original and the re-analysis showed no hits and the surrogates passed for both, the original results are reported as primary, and the re-analysis reported as secondary.

Sample HNWR-01-004 (580-31857-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chlorinated herbicides analysis.

All quality control parameters were within the acceptance limits.

Client: Advanced Technology Laboratories | Job Number: 580-31857-1

Client Sample ID: **HNWR-01-004**

Lab Sample ID: 580-31857-1 | Date Sampled: 03/14/2012 1245
Client Matrix: Water | Date Received: 03/16/2012 0950

8151A Herbicides (GC/MS)

Analysis Method:	8151A	Analysis Batch:	580-107865	Instrument ID:	TAC055
Prep Method:	8151A	Prep Batch:	580-107688	Lab File ID:	580-31857-a-1-b3-23-
Dilution:	1.0			Initial Weight/Volume:	910 mL
Analysis Date:	03/23/2012 2034			Final Weight/Volume:	10 mL
Prep Date:	03/21/2012 1347			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Dalapon	ND		0.44
4-Nitrophenol	ND		0.27
Dicamba	ND		0.27
Mecoprop	ND		0.27
MCPA	ND		0.27
Dichlorprop	ND		0.27
2,4-D	ND		0.27
Pentachlorophenol	ND		0.27
Silvex (2,4,5-TP)	ND		0.27
2,4,5-T	ND		0.27
Dinoseb	ND		0.27
2,4-DB	ND		0.27

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4-Dichlorophenylacetic acid	92		40 - 135

Client: Advanced Technology Laboratories | Job Number: 580-31857-1

Client Sample ID: **HNWR-01-004**

Lab Sample ID: 580-31857-1 | Date Sampled: 03/14/2012 1245
Client Matrix: Water | Date Received: 03/16/2012 0950

8151A Herbicides (GC/MS)

Analysis Method:	8151A	Analysis Batch:	580-107865	Instrument ID:	TAC055
Prep Method:	8151A	Prep Batch:	580-107688	Lab File ID:	580-31857-a-1-b3-23-
Dilution:	10			Initial Weight/Volume:	910 mL
Analysis Date:	03/23/2012 2056			Final Weight/Volume:	10 mL
Prep Date:	03/21/2012 1347			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Dalapon	ND		4.4
4-Nitrophenol	ND		2.7
Dicamba	ND		2.7
Mecoprop	ND		2.7
MCPA	ND		2.7
Dichlorprop	ND		2.7
2,4-D	ND		2.7
Pentachlorophenol	ND		2.7
Silvex (2,4,5-TP)	ND		2.7
2,4,5-T	ND		2.7
Dinoseb	ND		2.7
2,4-DB	ND		2.7

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4-Dichlorophenylacetic acid	87		40 - 135

Client: Advanced Technology Laboratories

Job Number: 580-31857-1

Surrogate Recovery Report

8151A Herbicides (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCPA %Rec
580-31857-1	HNWR-01-004	92
580-31857-1	HNWR-01-004	87
MB 580-107688/1-A		88
LCS 580-107688/2-A		103
LCSD 580-107688/3-A		107

Surrogate	Acceptance Limits
DCPA = 2,4-Dichlorophenylacetic acid	40-135

Client: Advanced Technology Laboratories

Job Number: 580-31857-1

Method Blank - Batch: 580-107688

Method: 8151A
Preparation: 8151A

Lab Sample ID:	MB 580-107688/1-A	Analysis Batch:	580-107865	Instrument ID:	TAC055
Client Matrix:	Water	Prep Batch:	580-107688	Lab File ID:	mb
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	03/23/2012 1819	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	03/21/2012 1347			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Dalapon	ND		0.40
4-Nitrophenol	ND		0.25
Dicamba	ND		0.25
Mecoprop	ND		0.25
MCPA	ND		0.25
Dichlorprop	ND		0.25
2,4-D	ND		0.25
Pentachlorophenol	ND		0.25
Silvex (2,4,5-TP)	ND		0.25
2,4,5-T	ND		0.25
Dinoseb	ND		0.25
2,4-DB	ND		0.25

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	88	40 - 135

Client: Advanced Technology Laboratories

Job Number: 580-31857-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 580-107688

Method: 8151A
Preparation: 8151A

LCS Lab Sample ID:	LCS 580-107688/2-A	Analysis Batch:	580-107865	Instrument ID:	TAC055
Client Matrix:	Water	Prep Batch:	580-107688	Lab File ID:	lcs
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	03/23/2012 1842	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	03/21/2012 1347			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 580-107688/3-A	Analysis Batch:	580-107865	Instrument ID:	TAC055
Client Matrix:	Water	Prep Batch:	580-107688	Lab File ID:	lcsd
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	03/23/2012 1904	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	03/21/2012 1347			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Dalapon	92	90	50 - 140	2	30		
4-Nitrophenol	109	103	60 - 130	6	30		
Dicamba	97	96	70 - 130	0	30		
Mecoprop	98	92	60 - 135	6	30		
MCPA	113	105	65 - 140	7	30		
Dichlorprop	108	95	50 - 145	13	30		
2,4-D	108	108	70 - 135	1	30		
Pentachlorophenol	96	102	45 - 130	6	30		
Silvex (2,4,5-TP)	97	98	55 - 130	1	30		
2,4,5-T	100	94	65 - 135	6	30		
Dinoseb	107	95	45 - 166	12	30		
2,4-DB	97	99	65 - 140	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	103	107	40 - 135

Client: Advanced Technology Laboratories

Job Number: 580-31857-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 580-107688

Method: 8151A
Preparation: 8151A

LCS Lab Sample ID:	LCS 580-107688/2-A	Units: ug/L		LCSD Lab Sample ID:	LCSD 580-107688/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	03/23/2012 1842			Analysis Date:	03/23/2012 1904
Prep Date:	03/21/2012 1347			Prep Date:	03/21/2012 1347
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Dalapon	10.0	10.0	9.16	9.00
4-Nitrophenol	10.0	10.0	10.9	10.3
Dicamba	10.0	10.0	9.65	9.62
Mecoprop	10.0	10.0	9.77	9.23
MCPA	10.0	10.0	11.3	10.5
Dichlorprop	10.0	10.0	10.8	9.48
2,4-D	10.0	10.0	10.8	10.8
Pentachlorophenol	10.0	10.0	9.57	10.2
Silvex (2,4,5-TP)	10.0	10.0	9.74	9.82
2,4,5-T	10.0	10.0	10.0	9.44
Dinoseb	10.0	10.0	10.7	9.51
2,4-DB	10.0	10.0	9.67	9.90

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

04/02/2012

31857

QC Level: Level IV

Subcontractor:

Test America
2800 George Washington Way
Richland, WA

TEL: (509) 375-3131
FAX: (509) 375-5590
Acct #:

Field Sampler: B. Colcom

15-Mar-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
N007489-001K / HNWR-01-004	Water	3/14/2012 12:45:00 PM	32OZA	1		

Page 90 of 91

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: N007489 Please fax results by: Normal TAT

IR = 5.9/6.3 w/o
Fed SO
Sm. BW/wh wef/bubble

		Date/Time			Date/Time
Relinquished by:		3/15/12@1700	**Received by:**	Tom	3/16/12 0950
Relinquished by:			**Received by:**		

Login Sample Receipt Checklist

Client: Advanced Technology Laboratories

Job Number: 580-31857-1

Login Number: 31857

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

July 19, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007611

RE: PG&E Topock, 423575.MP.06.TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 03, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary for sample N007611-001 since plasma was extinguished at no dilution.

Analytical Comment for EPA 6020:

Dilution was necessary for Selenium and Thallium for sample N007611-001 due to failing internal standard/%RSD at lower dilution.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.06.TS
Lab Order: N007611

CASE NARRATIVE

Analytical Report was revised to report the result for Antimony by EPA 6020.

Analytical Comments for EPA 6020:

Laboratory Conrol Sample (LCS) low bias for Antimony. Matrix Spike and Matrix Spike Duplicate for Antimony met LCS criteria of 85-115 % Recovery.

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *12-Apr-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.06.TS
Lab Order: N007611
Contract No: 2012-GMP-186A

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007611-001A	MW-55-120-186	Water	4/3/2012 11:03:00 AM	4/3/2012	4/12/2012
N007611-002A	MW-55-045-186	Water	4/3/2012 9:20:00 AM	4/3/2012	4/12/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691
000085

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *19-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007611
Project: PG&E Topock, 423575.MP.06.TS
Lab ID: N007611-001

Client Sample ID: MW-55-120-186
Collection Date: 4/3/2012 11:03:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120404A**	QC Batch: **39432**			PrepDate:	**4/4/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	4/4/2012
DISSOLVED METALS BY ICP							
		EPA 3010A		**EPA 6010B**			
RunID: **ICP2_120404A**	QC Batch: **39431**			PrepDate:	**4/4/2012**		Analyst: **JT**
Barium	60	1.8	15		ug/L	5	4/4/2012 03:57 PM
Cobalt	ND	1.8	15		ug/L	5	4/4/2012 03:57 PM
Copper	ND	11	25		ug/L	5	4/4/2012 03:57 PM
Molybdenum	26	3.0	25		ug/L	5	4/4/2012 03:57 PM
Nickel	ND	3.5	25		ug/L	5	4/4/2012 03:57 PM
Silver	ND	2.0	15		ug/L	5	4/5/2012 09:45 AM
Vanadium	ND	1.6	15		ug/L	5	4/4/2012 03:57 PM
Zinc	ND	6.8	50		ug/L	5	4/4/2012 03:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_120404A**	QC Batch: **39430**			PrepDate:	**4/4/2012**		Analyst: **CEI**
Antimony	ND	0.42	2.5		µg/L	5	4/4/2012 01:36 PM
Arsenic	5.2	0.17	0.50		µg/L	5	4/4/2012 01:36 PM
Beryllium	ND	0.38	2.5		µg/L	5	4/4/2012 01:36 PM
Cadmium	ND	0.42	2.5		µg/L	5	4/4/2012 01:36 PM
Lead	ND	1.5	10		µg/L	10	4/4/2012 02:36 PM
Selenium	ND	0.42	2.5		µg/L	5	4/4/2012 01:36 PM
Thallium	ND	0.75	5.0		µg/L	10	4/4/2012 02:36 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007611
Project: PG&E Topock, 423575.MP.06.TS
Lab ID: N007611-002

Client Sample ID: MW-55-045-186
Collection Date: 4/3/2012 9:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120404A**	QC Batch: **39432**			PrepDate:	**4/4/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	4/4/2012
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120404A**	QC Batch: **39431**			PrepDate:	**4/4/2012**		Analyst: **JT**
Barium	770	0.36	3.0		ug/L	1	4/4/2012 04:01 PM
Beryllium	ND	0.12	1.0		ug/L	1	4/4/2012 04:01 PM
Cadmium	ND	0.37	3.0		ug/L	1	4/4/2012 04:01 PM
Cobalt	ND	0.37	3.0		ug/L	1	4/4/2012 04:01 PM
Copper	ND	2.2	5.0		ug/L	1	4/4/2012 04:01 PM
Lead	ND	1.6	10		ug/L	1	4/4/2012 04:01 PM
Molybdenum	29	0.60	5.0		ug/L	1	4/4/2012 04:01 PM
Nickel	ND	0.70	5.0		ug/L	1	4/4/2012 04:01 PM
Silver	ND	0.39	3.0		ug/L	1	4/5/2012 10:04 AM
Vanadium	ND	0.31	3.0		ug/L	1	4/4/2012 04:01 PM
Zinc	ND	1.4	10		ug/L	1	4/4/2012 04:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120404A**	QC Batch: **39430**			PrepDate:	**4/4/2012**		Analyst: **CEI**
Antimony	ND	0.084	0.50		µg/L	1	4/4/2012 01:56 PM
Arsenic	4.7	0.035	0.10		µg/L	1	4/4/2012 01:56 PM
Selenium	ND	0.084	0.50		µg/L	1	4/4/2012 01:56 PM
Thallium	0.86	0.075	0.50		µg/L	1	4/4/2012 01:56 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39431** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **4/4/2012** RunNo: **83816**
Client ID: **PBW** Batch ID: **39431** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/4/2012** SeqNo: **1380151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Copper	ND	5.0									
Lead	ND	10									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39431** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **4/4/2012** RunNo: **83816**
Client ID: **LCSW** Batch ID: **39431** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/4/2012** SeqNo: **1380152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	50.388	3.0	50.00	0	101	85	115				
Beryllium	9.938	1.0	10.00	0	99.4	85	115				
Cadmium	10.169	3.0	10.00	0	102	85	115				
Cobalt	10.563	3.0	10.00	0	106	85	115				
Copper	11.066	5.0	10.00	0	111	85	115				
Lead	50.986	10	50.00	0	102	85	115				
Molybdenum	49.000	5.0	50.00	0	98.0	85	115				
Nickel	54.081	5.0	50.00	0	108	85	115				
Vanadium	10.203	3.0	10.00	0	102	85	115				
Zinc	55.878	10	50.00	0	112	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007611-001A-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **4/4/2012** RunNo: **83816**
Client ID: **ZZZZZZ** Batch ID: **39431** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/4/2012** SeqNo: **1380156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	93.629	15	50.00	60.46	66.3	75	125				S
Beryllium	8.545	5.0	10.00	0	85.5	75	125				
Cadmium	8.187	15	10.00	0	81.9	75	125				
Cobalt	9.079	15	10.00	0	90.8	75	125				
Copper	13.294	25	10.00	0	133	75	125				S
Lead	36.515	50	50.00	0	73.0	75	125				S
Molybdenum	63.081	25	50.00	25.88	74.4	75	125				S
Nickel	41.603	25	50.00	0	83.2	75	125				
Vanadium	11.050	15	10.00	2.452	86.0	75	125				
Zinc	44.316	50	50.00	0	88.6	75	125				

Sample ID: **N007611-001A-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **4/4/2012** RunNo: **83816**
Client ID: **ZZZZZZ** Batch ID: **39431** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/4/2012** SeqNo: **1380157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	93.025	15	50.00	60.46	65.1	75	125	93.63	0.648	20	S
Beryllium	8.548	5.0	10.00	0	85.5	75	125	8.545	0.0323	20	
Cadmium	8.284	15	10.00	0	82.8	75	125	8.187	0	20	
Cobalt	8.925	15	10.00	0	89.3	75	125	9.079	0	20	
Copper	12.878	25	10.00	0	129	75	125	13.29	0	20	S
Lead	40.390	50	50.00	0	80.8	75	125	36.52	0	20	
Molybdenum	61.975	25	50.00	25.88	72.2	75	125	63.08	1.77	20	S
Nickel	41.805	25	50.00	0	83.6	75	125	41.60	0.485	20	
Vanadium	11.082	15	10.00	2.452	86.3	75	125	11.05	0	20	
Zinc	44.192	50	50.00	0	88.4	75	125	44.32	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39452**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/4/2012**	RunNo: **83842**
Client ID: **PBW**	Batch ID: **39452**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/5/2012**	SeqNo: **1380887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	3.0									

Sample ID: **LCS-39452**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/4/2012**	RunNo: **83842**
Client ID: **LCSW**	Batch ID: **39452**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/5/2012**	SeqNo: **1380888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.083	3.0	10.00	0	90.8	85	115				

Sample ID: **N007611-001A-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/4/2012**	RunNo: **83842**
Client ID: **ZZZZZZ**	Batch ID: **39452**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/5/2012**	SeqNo: **1380892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	11.060	15	10.00	2.339	87.2	75	125				

Sample ID: **N007611-001A-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/4/2012**	RunNo: **83842**
Client ID: **ZZZZZZ**	Batch ID: **39452**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/5/2012**	SeqNo: **1380893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.926	15	10.00	2.339	85.9	75	125	11.06	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39430**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/4/2012**	RunNo: **83818**
Client ID: **PBW**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.085	0.50									
Arsenic	ND	0.10									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Lead	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39430**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/4/2012**	RunNo: **83818**
Client ID: **LCSW**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	8.379	0.50	10.00	0	83.8	85	115				S
Arsenic	8.592	0.10	10.00	0	85.9	85	115				
Beryllium	9.097	0.50	10.00	0	91.0	85	115				
Cadmium	9.153	0.50	10.00	0	91.5	85	115				
Lead	9.180	1.0	10.00	0	91.8	85	115				
Selenium	8.537	0.50	10.00	0	85.4	85	115				
Thallium	9.424	0.50	10.00	0	94.2	85	115				

Sample ID: **N007611-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/4/2012**	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.265	2.5	10.00	0	92.6	75	125				
Arsenic	14.467	0.50	10.00	5.164	93.0	75	125				
Beryllium	9.935	2.5	10.00	0	99.4	75	125				
Cadmium	9.310	2.5	10.00	0	93.1	75	125				
Selenium	9.154	2.5	10.00	0.5722	85.8	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Revision 3, 07/19/12
000011

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007611-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/4/2012**	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.110	2.5	10.00	0	91.1	75	125	9.265	1.69	20	
Arsenic	14.459	0.50	10.00	5.164	92.9	75	125	14.47	0.0547	20	
Beryllium	10.190	2.5	10.00	0	102	75	125	9.935	2.53	20	
Cadmium	9.490	2.5	10.00	0	94.9	75	125	9.310	1.91	20	
Selenium	9.859	2.5	10.00	0.5722	92.9	75	125	9.154	7.42	20	

Sample ID: **N007611-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/4/2012**	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.290	10	10.00	0	92.9	75	125				
Thallium	9.723	5.0	10.00	0	97.2	75	125				

Sample ID: **N007611-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/4/2012**	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.330	10	10.00	0	93.3	75	125	9.290	0	20	
Thallium	9.799	5.0	10.00	0	98.0	75	125	9.723	0.776	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39432** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **4/4/2012** RunNo: **83817**
Client ID: **LCSW** Batch ID: **39432** TestNo: **EPA 7470A** Analysis Date: **4/4/2012** SeqNo: **1380117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.937	0.20	10.00	0	99.4	85	115				

Sample ID: **MB-39432** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **4/4/2012** RunNo: **83817**
Client ID: **PBW** Batch ID: **39432** TestNo: **EPA 7470A** Analysis Date: **4/4/2012** SeqNo: **1380119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007611-001A-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **4/4/2012** RunNo: **83817**
Client ID: **ZZZZZZ** Batch ID: **39432** TestNo: **EPA 7470A** Analysis Date: **4/4/2012** SeqNo: **1380122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.411	0.20	10.00	0	104	75	125				

Sample ID: **N007611-001A-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **4/4/2012** RunNo: **83817**
Client ID: **ZZZZZZ** Batch ID: **39432** TestNo: **EPA 7470A** Analysis Date: **4/4/2012** SeqNo: **1380123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.199	0.20	10.00	0	102	75	125	10.41	2.05	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.06.TS
Task Order
Project 2012-GMP-186A-AZ
Turnaround Time 2 Days
Shipping Date: 4/2/2012
COC Number: ATL-186aAZ

	Container:	Preservatives:	Filtered:	Holding Time:	
	500 ml Poly	HNO3, 4°C	Field	180	Metals (6010B/6020A/7470Adis) FF Title22:SbAsBaBeCdCoCuPbHgMoNi SeAgTlVZn

DATE	TIME	Matrix			Number of Containers	COMMENTS
MW-55-120-186	4-3-12	1103	water	X	N007611 -1	1	
MW-55-045-186	4-3-12	0920	"	X	-2	1	
					TOTAL NUMBER OF CONTAINERS	2	

	Signatures	Date/Time
Approved by		4-3-12 1423
Sampled by		
Relinquished by		
Received by		4/3/12 1423
Relinquished by		4/3/12 2100
Received by		4/3/12 2300

Shipping Details
Method of Shipment: FedEx
On Ice: ~~yes~~ no 2.2°C
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

CT0000

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.06.TS
Task Order
Project 2012-GMP-186A-AZ
Turnaround Time 2 Days
Shipping Date: 4/2/2012
COC Number: ATL-186aAZ

	Container:	Preservatives:	Filtered:	Holding Time:	Metals (6010B/6020A/7470Adis) FF Title22:SbAsBaBeCdCoCuPbHgMoNiSeAgTlVZn	Number of Containers	COMMENTS
DATE	TIME	Matrix	500 ml Poly	HNO3, 4°C	Field	180			
MW-55-120-186	4-3-12	1103	water			X	1	
MW-55-045-186	4-3-12	0920	"			X	1	
						TOTAL NUMBER OF CONTAINERS	2	

	Signatures	Date/Time
Approved by		4-3-12 1423
Sampled by		
Relinquished by		
Received by		4/3/12 1423
Relinquished by		4/3/12 2100
Received by		4/3/12 @ 2100

Shipping Details
Method of Shipment: FedEx
On Ice: ~~yes~~ + no 2.2°C
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

9559

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/3/2012 Workorder: N007611

Rep sample Temp (Deg C): 2.2 IR Gun ID: 2

Temp Blank: ☐ Yes ☑ No

Carrier name: ATL

Last 4 digits of Tracking No.: na Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 4/3/12

Reviewed By: [signature]

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007611-001A**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.01209* 5* (25/25) * 1000

= 60.45667ug/L

Reporting results in two significant figures,

Barium, ug/L = 60

JT / ICP-02 4/9/2012 5:51:38 PM

MS for 4/12/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007611
Test Method: EPA 6010
Analysis Date: 04/04/12

Matrix: Water
Batch No.: 39431

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefVal	%DIFF	%DIFFlimit
N007611-001A-DT 5X 25X	Antimony	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Barium	ug/L	63.62774895	NA	60.4566694	-5.25%	10
N007611-001A-DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Copper	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Molybdenum	ug/L	23.06746649	NA	25.87897221	10.86%	10
N007611-001A-DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007611-001A-DT 5X	Vanadium	ug/L	0	NA	2.452008621	100.00%	10
N007611-001A-DT 5X	Zinc	ug/L	0	NA	0	0.00%	10

MS for 4/12/12

Note: NA - Not Applicable

JT / ICP-02 4/9/2012 6:26:35 PM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007611
Test Method: EPA 6010
Analysis Date: 04/05/12

Matrix: Water
Batch No.: 39452

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007611-001A-DT 5X	Silver	ug/L	0	NA	2.338596	100.00%	10

Note: NA - Not Applicable

JT / ICP-02 4/9/2012 6:26:35 PM

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007611-001A-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83816**
Client ID: **ZZZZZZ** Batch ID: **39431** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/4/2012** SeqNo: **1380155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	641.972	50	625.0	0	103	75	125				
Barium	705.917	15	625.0	60.46	103	75	125				
Beryllium	608.417	5.0	625.0	0	97.3	75	125				
Cadmium	601.745	15	625.0	0	96.3	75	125				
Cobalt	627.049	15	625.0	0	100	75	125				
Copper	647.534	25	625.0	0	104	75	125				
Lead	591.634	50	625.0	0	94.7	75	125				
Molybdenum	631.186	25	625.0	25.88	96.8	75	125				
Nickel	624.651	25	625.0	0	99.9	75	125				
Vanadium	626.284	15	625.0	2.452	99.8	75	125				
Zinc	625.639	50	625.0	0	100	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007611-001A-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **83842**
Client ID: **ZZZZZZ**	Batch ID: **39452**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/5/2012**	SeqNo: **1380891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	646.997	15	625.0	2.339	103	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

423575

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007611-001A**, the concentration in ug/L is calculated as follows:

Chromium, ug/L = 5.19590* 1 * (25/25)

= 5.19590 ug/L

Reporting results in two significant figures,

Chromium, ug/L = 5.2

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007611
Test Method: EPA 6020
Analysis Date: 04/04/12

Matrix: Water
Batch No.: 39430

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable, the calc. values were < 25X the RL. PS @ 2x,PS @ 5x &PS @ 10x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007611-001A-DT 5X	Chromium	µg/L	5.851221559	NA	5.195901249	-12.61%	10
N007611-001A-DT 25X	Arsenic	µg/L	4.956865206	NA	5.164449107	4.02%	10
N007611-001A-DT 25X	Selenium	µg/L	0	NA	0.572235827	100.00%	10

CLIENT: CH2M HILL
Work Order: N007611
Project: PG&E Topock, 423575.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007611-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.307	2.0	20.00	5.196	85.6	75	125				

Sample ID: **N007611-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.314	0.50	50.00	5.164	98.3	75	125				
Selenium	46.883	2.5	50.00	0.5722	92.6	75	125				

Sample ID: **N007611-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **83818**
Client ID: **ZZZZZZ**	Batch ID: **39430**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/4/2012**	SeqNo: **1380185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	99.253	5.0	100.0	0	99.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

1529

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007611-01A**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	=	**0.0**
Mercury, ug/L	=	**ND**

MS for 4/12/12

July 19, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007618

RE: PG&E Topock, 405681.MP.06.TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 04, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,

Jose Tenorio Jr.
Laboratory Director

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

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Cyanide (SM 4500-CN) was subcontracted to Advanced Technology Laboratories-Signal Hill, CA .

Herbicides by EPA 8151 was subcontracted to Test America- Tacoma,WA.

Analytical Comments for EPA 6010B:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Calcium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8015B_DRO/ORO:

Matrix Spike (MS) is outside recovery criteria possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8015B_GRO:

Matrix Spike Duplicate (MSD) is outside recovery criteria possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8260B:

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Laboratory Control Sample (LCS) recovery bias high for Acetone and Acrylonitrile. Sample results were non- detect (ND) for these analytes, therefore reanalysis was not necessary.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for 1,2,4-Trimethylbenzene, Naphthalene and Styrene ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2695

Advanced Technology Laboratories, Inc.

Date: *12-Apr-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 405681.MP.06.TS
Lab Order: N007618
Contract No: 2012-HNWR-00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007618-001A	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001B	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001C	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001D	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001E	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001F	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001G	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001H	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001I	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001J	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001K	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001L	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-001M	HNWR-01-005	Groundwater	4/4/2012 11:49:00 AM	4/4/2012	4/12/2012
N007618-002A	TB01-05	Groundwater	4/4/2012 12:00:00 PM	4/4/2012	4/12/2012

Advanced Technology Laboratories, Inc.
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CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_120410A**	QC Batch: **39428**			PrepDate:		**4/9/2012**	Analyst: **KAB**
Total Dissolved Solids (Residue, Filterable)	430	10	10		mg/L	1	4/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID: **MB-39428** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: RunNo: **83869**
Client ID: **PBW** Batch ID: **39428** TestNo: **SM2540C** Analysis Date: **4/10/2012** SeqNo: **1381948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: **LCS-39428** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: RunNo: **83869**
Client ID: **LCSW** Batch ID: **39428** TestNo: **SM2540C** Analysis Date: **4/10/2012** SeqNo: **1381949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1009.000	10	1000	0	101	80	120				

Sample ID: **N007620-003A-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/9/2012** RunNo: **83869**
Client ID: **ZZZZZZ** Batch ID: **39428** TestNo: **SM2540C** Analysis Date: **4/10/2012** SeqNo: **1381952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	534.000	10						537.0	0.560	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC1_120411A**	QC Batch: **R83902**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	14	0.028	0.40		µg/L	2	4/11/2012 03:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120410A**	QC Batch: **39467**			PrepDate:	**4/5/2012**		Analyst: **CEI**
Chromium	17	0.17	1.0		µg/L	1	4/10/2012 05:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R83902**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83902**
Client ID: **PBW**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**	SeqNo: **1382847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R83902**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83902**
Client ID: **LCSW**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**	SeqNo: **1382848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.961	0.20	5.000	0	99.2	90	110				

Sample ID: **N007632-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**	SeqNo: **1382850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.234	0.20	1.000	3.273	96.1	90	110				

Sample ID: **N007632-007AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**	SeqNo: **1382851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.250	0.20	1.000	3.273	97.7	90	110	4.234	0.375	20	

Sample ID: **N007632-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**	SeqNo: **1382853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N007632-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:		RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**		SeqNo: **1382858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.280	0.20	1.000	1.292	98.8	90	110				

Sample ID: **N007632-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:		RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**		SeqNo: **1382860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.795	0.20	1.000	1.812	98.3	90	110				

Sample ID: **N007632-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:		RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**		SeqNo: **1382862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.045	0.20	1.000	1.058	98.7	90	110				

Sample ID: **N007632-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:		RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**		SeqNo: **1382864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.199	0.20	1.000	3.257	94.1	90	110				

Sample ID: **N007618-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:		RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**		SeqNo: **1382865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.836	0.40	10.00	14.11	97.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N007632-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.618	0.20	1.000	0.6161	100	90	110				

Sample ID: **N007632-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.290	0.20	1.000	0.2851	101	90	110				

Sample ID: **N007632-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.203	0.20	1.000	1.207	99.5	90	110				

Sample ID: **N007632-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.309	0.20	1.000	1.313	99.6	90	110				

Sample ID: **N007640-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1534	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N007640-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.817	0.20	1.000	0.8173	100	90	110				

Sample ID: **N007640-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.486	0.20	1.000	1.478	101	90	110				

Sample ID: **N007640-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **83902**
Client ID: **ZZZZZZ**	Batch ID: **R83902**	TestNo: **EPA 218.6**		Analysis Date: **4/11/2012**			SeqNo: **1382887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.726	0.20	1.000	0.7123	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **MB-39467**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83901**
Client ID: **PBW**	Batch ID: **39467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **LCS-39467**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83901**
Client ID: **LCSW**	Batch ID: **39467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.420	1.0	10.00	0	104	85	115				

Sample ID: **N007621-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83901**
Client ID: **ZZZZZZ**	Batch ID: **39467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.700	1.0	10.00	0.3415	93.6	75	125				

Sample ID: **N007621-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83901**
Client ID: **ZZZZZZ**	Batch ID: **39467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.068	1.0	10.00	0.3415	97.3	75	125	9.700	3.72	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_120406A**	QC Batch: **R83838**			PrepDate:			Analyst: **KAB**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	4/6/2012
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	4/6/2012
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	4/6/2012
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	4/6/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **LCS-R83838** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83838**
Client ID: **LCSW** Batch ID: **R83838** TestNo: **SM 2320 B** Analysis Date: **4/6/2012** SeqNo: **1380798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.703	5.0	100.0	0	101	85	115				
Alkalinity, Total (As CaCO3)	100.703	5.0	100.0	0	101	85	115				

Sample ID: **LCSD-R83838** SampType: **LCSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83838**
Client ID: **LCSS02** Batch ID: **R83838** TestNo: **SM 2320 B** Analysis Date: **4/6/2012** SeqNo: **1380799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.703	5.0	100.0	0	101	85	115	100.7	0	20	
Alkalinity, Total (As CaCO3)	100.703	5.0	100.0	0	101	85	115	100.7	0	20	

Sample ID: **MB-R83838** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83838**
Client ID: **PBW** Batch ID: **R83838** TestNo: **SM 2320 B** Analysis Date: **4/6/2012** SeqNo: **1380800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID: **N007618-001C-DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **83838**
Client ID: **ZZZZZZ** Batch ID: **R83838** TestNo: **SM 2320 B** Analysis Date: **4/6/2012** SeqNo: **1380802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	105.386	5.0						106.6	1.10	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	105.386	5.0						106.6	1.10	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **N007618-001C-MS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **83838**
Client ID: **ZZZZZZ**	Batch ID: **R83838**	TestNo: **SM 2320 B**		Analysis Date: **4/6/2012**	SeqNo: **1380803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	203.747	5.0	100.0	106.6	97.2	75	125				
Alkalinity, Total (As CaCO3)	203.747	5.0	100.0	106.6	97.2	75	125				

Sample ID: **N007618-001C-MSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **83838**
Client ID: **ZZZZZZ**	Batch ID: **R83838**	TestNo: **SM 2320 B**		Analysis Date: **4/6/2012**	SeqNo: **1380804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	204.918	5.0	100.0	106.6	98.4	75	125	203.7	0.573	20	
Alkalinity, Total (As CaCO3)	204.918	5.0	100.0	106.6	98.4	75	125	203.7	0.573	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120405A**	QC Batch: **R83898**			PrepDate:			Analyst: **QBM**
Chloride	130	0.70	25		mg/L	50	4/5/2012 12:00 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120405A**	QC Batch: **R83898**			PrepDate:			Analyst: **QBM**
Sulfate	45	0.16	2.5		mg/L	5	4/5/2012 12:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120405A**	QC Batch: **R83898**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.5	0.024	1.0		mg/L	2	4/5/2012 12:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **MB-R83898_CL**	SampType: **MBLK**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:			RunNo: **83898**			
Client ID: **PBW**	Batch ID: **R83898**	TestNo: **EPA 300.0**		Analysis Date: **4/5/2012**			SeqNo: **1382637**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: **LCS-R83898_CL**	SampType: **LCS**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:			RunNo: **83898**			
Client ID: **LCSW**	Batch ID: **R83898**	TestNo: **EPA 300.0**		Analysis Date: **4/5/2012**			SeqNo: **1382638**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.429	0.50	2.500	0	97.2	90	110				

Sample ID: **N007618-001CDUP**	SampType: **DUP**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:			RunNo: **83898**			
Client ID: **ZZZZZZ**	Batch ID: **R83898**	TestNo: **EPA 300.0**		Analysis Date: **4/5/2012**			SeqNo: **1382640**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	132.150	25						132.8	0.491	20	

Sample ID: **N007618-001CMS**	SampType: **MS**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:			RunNo: **83898**			
Client ID: **ZZZZZZ**	Batch ID: **R83898**	TestNo: **EPA 300.0**		Analysis Date: **4/5/2012**			SeqNo: **1382642**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	258.450	25	125.0	132.8	101	80	120				

Sample ID: **N007618-001CMSD**	SampType: **MSD**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:			RunNo: **83898**			
Client ID: **ZZZZZZ**	Batch ID: **R83898**	TestNo: **EPA 300.0**		Analysis Date: **4/5/2012**			SeqNo: **1382643**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	257.450	25	125.0	132.8	99.7	80	120	258.4	0.388	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: MB-R83898_SO4	SampType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: PBW	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: LCS-R83898_SO4	SampType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: LCSW	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.003	0.50	5.000	0	100	90	110				

Sample ID: N007618-001CDUP	SampType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: ZZZZZZ	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	45.470	2.5						44.95	1.15	20	

Sample ID: N007618-001CMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: ZZZZZZ	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	70.495	2.5	25.00	44.95	102	80	120				

Sample ID: N007618-001CMSD	SampType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: ZZZZZZ	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	69.875	2.5	25.00	44.95	99.7	80	120	70.50	0.883	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: MB-R83898_NO3	SampType: MBLK	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: PBW	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382651

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: LCS-R83898_NO3	SampType: LCS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: LCSW	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382652

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.436	0.50	2.500	0	97.4	90	110				

Sample ID: N007618-001CDUP	SampType: DUP	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: ZZZZZZ	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.506	1.0						2.530	0.953	20	

Sample ID: N007618-001CMS	SampType: MS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: ZZZZZZ	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382656

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.592	1.0	5.000	2.530	101	80	120				

Sample ID: N007618-001CMSD	SampType: MSD	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 83898
Client ID: ZZZZZZ	Batch ID: R83898	TestNo: EPA 300.0		Analysis Date: 4/5/2012	SeqNo: 1382657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.558	1.0	5.000	2.530	101	80	120	7.592	0.449	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PERCHLORATE BY ION CHROMATOGRAPHY							
			EPA 314.0				
RunID: **IC5_120410A**	QC Batch: **R83887**			PrepDate:			Analyst: **JT**
Perchlorate	ND	1.2	2.0		µg/L	1	4/10/2012 07:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 314_W

Sample ID: **MB-R83887**	SampType: **MBLK**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83887**
Client ID: **PBW**	Batch ID: **R83887**	TestNo: **EPA 314.0**		Analysis Date: **4/10/2012**	SeqNo: **1382452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	ND	2.0									

Sample ID: **LCS-R83887**	SampType: **LCS**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83887**
Client ID: **LCSW**	Batch ID: **R83887**	TestNo: **EPA 314.0**		Analysis Date: **4/10/2012**	SeqNo: **1382453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	10.631	2.0	10.00	0	106	85	115				

Sample ID: **N007618-001F-MS**	SampType: **MS**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83887**
Client ID: **ZZZZZZ**	Batch ID: **R83887**	TestNo: **EPA 314.0**		Analysis Date: **4/10/2012**	SeqNo: **1382456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	11.029	2.0	10.00	0	110	80	120				

Sample ID: **N007618-001F-MSD**	SampType: **MSD**	TestCode: **314_W**	Units: **µg/L**	Prep Date:	RunNo: **83887**
Client ID: **ZZZZZZ**	Batch ID: **R83887**	TestNo: **EPA 314.0**		Analysis Date: **4/10/2012**	SeqNo: **1382457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Perchlorate	11.043	2.0	10.00	0	110	80	120	11.03	0.127	15	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
AMMONIA-N							
			SM4500-NH3C				
RunID: **WETCHEM_120409A**	QC Batch: **39447**			PrepDate:	**4/6/2012**		Analyst: **KAB**
Nitrogen, Ammonia (As N)	0.15	0.030	0.10		mg/L	1	4/9/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 350.2_4500NH3C_WPGE

Sample ID: **LCS-39447**	SampType: **LCS**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **4/6/2012**	RunNo: **83857**
Client ID: **LCSW**	Batch ID: **39447**	TestNo: **SM4500-NH3**		Analysis Date: **4/9/2012**	SeqNo: **1382533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	1.086	0.10	1.000	0	109	85	115				

Sample ID: **MB-39447**	SampType: **MBLK**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **4/6/2012**	RunNo: **83857**
Client ID: **PBW**	Batch ID: **39447**	TestNo: **SM4500-NH3**		Analysis Date: **4/9/2012**	SeqNo: **1382534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.10									

Sample ID: **N007618-001D-DUP**	SampType: **DUP**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **4/6/2012**	RunNo: **83857**
Client ID: **ZZZZZZ**	Batch ID: **39447**	TestNo: **SM4500-NH3**		Analysis Date: **4/9/2012**	SeqNo: **1382537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	0.147	0.10						0.1480	0.678	20	

Sample ID: **N007618-001D-MS**	SampType: **MS**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **4/6/2012**	RunNo: **83857**
Client ID: **ZZZZZZ**	Batch ID: **39447**	TestNo: **SM4500-NH3**		Analysis Date: **4/9/2012**	SeqNo: **1382538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.120	0.10	2.000	0.1480	98.6	75	125				

Sample ID: **N007618-001D-MSD**	SampType: **MSD**	TestCode: **350.2_4500N**	Units: **mg/L**	Prep Date: **4/6/2012**	RunNo: **83857**
Client ID: **ZZZZZZ**	Batch ID: **39447**	TestNo: **SM4500-NH3**		Analysis Date: **4/9/2012**	SeqNo: **1382539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.121	0.10	2.000	0.1480	98.6	75	125	2.120	0.0472	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM5310C				
RunID: **TOC1_120411A**	QC Batch: **R83906**			PrepDate:			Analyst: **JT**
Organic Carbon, Total	ND	0.073	1.0		mg/L	1	4/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T

Sample ID: **MB-R83906**	SampType: **MBLK**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **83906**
Client ID: **PBW**	Batch ID: **R83906**	TestNo: **SM5310C**		Analysis Date: **4/11/2012**	SeqNo: **1382943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R83906**	SampType: **LCS**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **83906**
Client ID: **LCSW**	Batch ID: **R83906**	TestNo: **SM5310C**		Analysis Date: **4/11/2012**	SeqNo: **1382944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	10.588	1.0	10.00	0	106	85	115				

Sample ID: **N007618-001EMS**	SampType: **MS**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **83906**
Client ID: **ZZZZZZ**	Batch ID: **R83906**	TestNo: **SM5310C**		Analysis Date: **4/11/2012**	SeqNo: **1382946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	10.588	1.0	10.00	0.07600	105	75	125				

Sample ID: **N007618-001EMSD**	SampType: **MSD**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **83906**
Client ID: **ZZZZZZ**	Batch ID: **R83906**	TestNo: **SM5310C**		Analysis Date: **4/11/2012**	SeqNo: **1382947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	10.688	1.0	10.00	0.07600	106	75	125	10.59	0.940	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Lab Order: N007618
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007618-001

Client Sample ID: HNWR-01-005
Collection Date: 4/4/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120410A**	QC Batch: **39465**			PrepDate:		**4/5/2012**	Analyst: **JT**
Aluminum	ND	7.0	50		ug/L	1	4/10/2012 10:12 AM
Antimony	ND	3.4	10		ug/L	1	4/10/2012 10:12 AM
Barium	110	0.36	3.0		ug/L	1	4/10/2012 10:12 AM
Beryllium	ND	0.12	1.0		ug/L	1	4/10/2012 10:12 AM
Cadmium	ND	0.37	3.0		ug/L	1	4/10/2012 10:12 AM
Calcium	20000	75	500		ug/L	1	4/10/2012 10:12 AM
Cobalt	ND	0.37	3.0		ug/L	1	4/10/2012 10:12 AM
Copper	ND	2.2	5.0		ug/L	1	4/10/2012 10:12 AM
Iron	25	7.2	20		ug/L	1	4/10/2012 10:12 AM
Lead	ND	1.6	10		ug/L	1	4/10/2012 10:12 AM
Magnesium	3100	13	100		ug/L	1	4/10/2012 10:12 AM
Molybdenum	9.0	0.60	5.0		ug/L	1	4/10/2012 10:12 AM
Nickel	ND	0.70	5.0		ug/L	1	4/10/2012 10:12 AM
Potassium	3700	33	500		ug/L	10	4/11/2012 06:55 PM
Silver	ND	0.39	3.0		ug/L	1	4/10/2012 10:12 AM
Sodium	130000	730	5000		ug/L	10	4/11/2012 06:55 PM
Vanadium	20	0.31	3.0		ug/L	1	4/11/2012 08:33 AM
Zinc	ND	1.4	10		ug/L	1	4/10/2012 10:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39465**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83883**
Client ID: **PBW**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	20.251	50									
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Calcium	ND	500									
Cobalt	ND	3.0									
Copper	ND	5.0									
Iron	10.024	20									
Lead	ND	10									
Magnesium	23.554	100									
Molybdenum	1.280	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39465**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83883**
Client ID: **LCSW**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1136.367	50	1000	0	114	85	115				
Antimony	50.834	10	50.00	0	102	85	115				
Barium	54.030	3.0	50.00	0	108	85	115				
Beryllium	10.102	1.0	10.00	0	101	85	115				
Cadmium	10.037	3.0	10.00	0	100	85	115				
Calcium	1091.029	500	1000	0	109	85	115				
Cobalt	10.858	3.0	10.00	0	109	85	115				
Copper	10.121	5.0	10.00	0	101	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: LCS-39465	SampType: LCS	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83883
Client ID: LCSW	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/10/2012	SeqNo: 1382190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.646	10	50.00	0	103	85	115				
Magnesium	1048.975	100	1000	0	105	85	115				
Molybdenum	49.902	5.0	50.00	0	99.8	85	115				
Nickel	54.222	5.0	50.00	0	108	85	115				
Silver	8.745	3.0	10.00	0	87.4	85	115				
Zinc	53.438	10	50.00	0	107	85	115				

Sample ID: LCS-39465	SampType: LCS	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83883
Client ID: LCSW	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/10/2012	SeqNo: 1382191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	111.653	20	100.0	0	112	85	115				

Sample ID: N007618-001B-MS	SampType: MS	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83883
Client ID: ZZZZZZ	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/10/2012	SeqNo: 1382195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1137.020	50	1000	0	114	75	125				
Antimony	50.666	10	50.00	0	101	75	125				
Barium	154.615	3.0	50.00	109.5	90.2	75	125				
Beryllium	10.134	1.0	10.00	0	101	75	125				
Cadmium	9.776	3.0	10.00	0	97.8	75	125				
Calcium	20637.892	500	1000	19790	84.5	75	125				
Cobalt	10.578	3.0	10.00	0	106	75	125				
Copper	11.079	5.0	10.00	0	111	75	125				
Iron	136.402	20	100.0	25.10	111	75	125				
Lead	49.885	10	50.00	0	99.8	75	125				
Magnesium	4095.838	100	1000	3117	97.9	75	125				
Molybdenum	58.477	5.0	50.00	8.961	99.0	75	125				
Nickel	53.220	5.0	50.00	0	106	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007618-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83883**
Client ID: **ZZZZZZ**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.183	3.0	10.00	0	91.8	75	125				
Zinc	55.291	10	50.00	1.748	107	75	125				

Sample ID: **N007618-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83883**
Client ID: **ZZZZZZ**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1129.406	50	1000	0	113	75	125	1137	0.672	20	
Antimony	49.239	10	50.00	0	98.5	75	125	50.67	2.86	20	
Barium	157.365	3.0	50.00	109.5	95.7	75	125	154.6	1.76	20	
Beryllium	10.048	1.0	10.00	0	100	75	125	10.13	0.848	20	
Cadmium	9.478	3.0	10.00	0	94.8	75	125	9.776	3.10	20	
Calcium	21228.809	500	1000	19790	144	75	125	20640	2.82	20	S
Cobalt	10.558	3.0	10.00	0	106	75	125	10.58	0.196	20	
Copper	10.987	5.0	10.00	0	110	75	125	11.08	0.834	20	
Iron	138.879	20	100.0	25.10	114	75	125	136.4	1.80	20	
Lead	49.721	10	50.00	0	99.4	75	125	49.88	0.329	20	
Magnesium	4179.934	100	1000	3117	106	75	125	4096	2.03	20	
Molybdenum	58.428	5.0	50.00	8.961	98.9	75	125	58.48	0.0838	20	
Nickel	52.641	5.0	50.00	0	105	75	125	53.22	1.09	20	
Silver	8.888	3.0	10.00	0	88.9	75	125	9.183	3.26	20	
Zinc	54.816	10	50.00	1.748	106	75	125	55.29	0.864	20	

Sample ID: **MB-39465**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83899**
Client ID: **PBW**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/11/2012**	SeqNo: **1382733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: LCS-39465	SampType: LCS	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83899
Client ID: LCSW	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/11/2012	SeqNo: 1382734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.915	3.0	10.00	0	99.2	85	115				

Sample ID: N007618-001B-MS	SampType: MS	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83899
Client ID: ZZZZZZ	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/11/2012	SeqNo: 1382738

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	30.202	3.0	10.00	19.85	103	75	125				

Sample ID: N007618-001B-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83899
Client ID: ZZZZZZ	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/11/2012	SeqNo: 1382739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	30.505	3.0	10.00	19.85	107	75	125	30.20	0.999	20	

Sample ID: MB-39465	SampType: MBLK	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83900
Client ID: PBW	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/11/2012	SeqNo: 1382749

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	50									
Sodium	ND	500									

Sample ID: LCS-39465	SampType: LCS	TestCode: 6010_WDPG	Units: ug/L	Prep Date: 4/5/2012	RunNo: 83900
Client ID: LCSW	Batch ID: 39465	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 4/11/2012	SeqNo: 1382750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	2200.212	50	2500	0	88.0	85	115				
Sodium	23177.929	500	25000	0	92.7	85	115				

Qualifiers:

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- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
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- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007618-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83900**
Client ID: **ZZZZZZ**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/11/2012**	SeqNo: **1382754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	8457.850	500	5000	3654	96.1	75	125				
Sodium	235567.035	5000	100000	131300	104	75	125				

Sample ID: **N007618-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/5/2012**	RunNo: **83900**
Client ID: **ZZZZZZ**	Batch ID: **39465**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/11/2012**	SeqNo: **1382755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	8452.929	500	5000	3654	96.0	75	125	8458	0.0582	20	
Sodium	236455.089	5000	100000	131300	105	75	125	235600	0.376	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *19-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007618
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007618-001

Client Sample ID: HNWR-01-005
Collection Date: 4/4/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120410A**	QC Batch: **39467**			PrepDate:	**4/5/2012**		Analyst: **CEI**
Antimony	ND	0.084	0.50		µg/L	1	4/10/2012 05:57 PM
Arsenic	15	0.035	0.10		µg/L	1	4/10/2012 05:57 PM
Manganese	1.7	0.16	0.50		µg/L	1	4/10/2012 05:57 PM
Selenium	0.75	0.084	0.50		µg/L	1	4/10/2012 05:57 PM
Thallium	ND	0.075	0.50		µg/L	1	4/10/2012 05:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39467** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83901**
Client ID: **PBW** Batch ID: **39467** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/10/2012** SeqNo: **1383003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39467** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83901**
Client ID: **LCSW** Batch ID: **39467** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/10/2012** SeqNo: **1383009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.587	0.50	10.00	0	95.9	85	115				
Arsenic	10.079	0.10	10.00	0	101	85	115				
Manganese	102.269	0.50	100.0	0	102	85	115				
Selenium	10.399	0.50	10.00	0	104	85	115				
Thallium	10.465	0.50	10.00	0	105	85	115				

Sample ID: **N007621-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83901**
Client ID: **ZZZZZZ** Batch ID: **39467** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/10/2012** SeqNo: **1383012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.330	0.50	10.00	0	93.3	75	125				
Arsenic	9.364	0.10	10.00	0.08402	92.8	75	125				
Manganese	92.928	0.50	100.0	0	92.9	75	125				
Selenium	9.143	0.50	10.00	0	91.4	75	125				
Thallium	9.689	0.50	10.00	0	96.9	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007621-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83901**
Client ID: **ZZZZZZ** Batch ID: **39467** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/10/2012** SeqNo: **1383013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.503	0.50	10.00	0	95.0	75	125	9.330	1.84	20	
Arsenic	9.306	0.10	10.00	0.08402	92.2	75	125	9.364	0.621	20	
Manganese	96.170	0.50	100.0	0	96.2	75	125	92.93	3.43	20	
Selenium	9.243	0.50	10.00	0	92.4	75	125	9.143	1.08	20	
Thallium	9.839	0.50	10.00	0	98.4	75	125	9.689	1.54	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120411A**	QC Batch: **39462**			PrepDate:	**4/5/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	4/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
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S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39462**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83908**
Client ID: **LCSW**	Batch ID: **39462**	TestNo: **EPA 7470A**		Analysis Date: **4/11/2012**	SeqNo: **1382965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.687	0.20	5.000	0	93.7	85	115				

Sample ID: **MB-39462**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83908**
Client ID: **PBW**	Batch ID: **39462**	TestNo: **EPA 7470A**		Analysis Date: **4/11/2012**	SeqNo: **1382967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007618-001B-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83908**
Client ID: **ZZZZZZ**	Batch ID: **39462**	TestNo: **EPA 7470A**		Analysis Date: **4/11/2012**	SeqNo: **1382969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.757	0.20	5.000	0	95.1	75	125				

Sample ID: **N007618-001B-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83908**
Client ID: **ZZZZZZ**	Batch ID: **39462**	TestNo: **EPA 7470A**		Analysis Date: **4/11/2012**	SeqNo: **1382970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.791	0.20	5.000	0	95.8	75	125	4.757	0.718	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID							
EPA 3510C			**EPA 8015B**				
RunID: **GC1_120410D**	QC Batch: **39487**			PrepDate:		**4/9/2012**	Analyst: **MDM**
TPH-Diesel	ND	22	51		ug/L	1	4/11/2012 08:31 AM
TPH-Motor Oil	ND	8.6	51		ug/L	1	4/11/2012 08:31 AM
Surr: Octacosane	65.5	0	26-152		%REC	1	4/11/2012 08:31 AM
Surr: p-Terphenyl	65.3	0	57-132		%REC	1	4/11/2012 08:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_PGE

Sample ID: **LCS-39487_ORO**	SampType: **LCS**	TestCode: **8015_W_DM_**	Units: **ug/L**	Prep Date: **4/9/2012**	RunNo: **83890**
Client ID: **LCSW**	Batch ID: **39487**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2012**	SeqNo: **1382520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Motor Oil	1216.212	50	1000	0	122	50	150				
Surr: Octacosane	72.056		80.00		90.1	26	152				
Surr: p-Terphenyl	74.090		80.00		92.6	57	132				

Sample ID: **LCSD-39487_ORO**	SampType: **LCSD**	TestCode: **8015_W_DM_**	Units: **ug/L**	Prep Date: **4/9/2012**	RunNo: **83890**
Client ID: **LCSS02**	Batch ID: **39487**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2012**	SeqNo: **1382521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Motor Oil	1340.972	50	1000	0	134	50	150	1216	9.76	30	
Surr: Octacosane	74.384		80.00		93.0	26	152		0		
Surr: p-Terphenyl	76.259		80.00		95.3	57	132		0		

Sample ID: **MB-39487**	SampType: **MBLK**	TestCode: **8015_W_DM_**	Units: **ug/L**	Prep Date: **4/9/2012**	RunNo: **83890**
Client ID: **PBW**	Batch ID: **39487**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2012**	SeqNo: **1382522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	22.916	50									
TPH-Motor Oil	11.755	50									
Surr: Octacosane	68.896		80.00		86.1	26	152				
Surr: p-Terphenyl	67.730		80.00		84.7	57	132				

Sample ID: **N007618-001H-MS**	SampType: **MS**	TestCode: **8015_W_DM_**	Units: **ug/L**	Prep Date: **4/9/2012**	RunNo: **83890**
Client ID: **ZZZZZZ**	Batch ID: **39487**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2012**	SeqNo: **1382524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	656.078	51	1010	47.44	60.3	61	143				S
Surr: Octacosane	79.780		80.81		98.7	26	152				
Surr: p-Terphenyl	82.282		80.81		102	57	132				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_PGE

Sample ID: **N007618-001H-MSD**	SampType: **MSD**	TestCode: **8015_W_DM_**	Units: **ug/L**	Prep Date: **4/9/2012**	RunNo: **83890**
Client ID: **ZZZZZZ**	Batch ID: **39487**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2012**	SeqNo: **1382525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	698.133	52	1042	47.44	62.5	61	143	656.1	6.21	30	
Surr: Octacosane	79.786		83.33		95.7	26	152		0		
Surr: p-Terphenyl	82.014		83.33		98.4	57	132		0		

Sample ID: **LCS-39487**	SampType: **LCS**	TestCode: **8015_W_DM_**	Units: **ug/L**	Prep Date: **4/9/2012**	RunNo: **83890**
Client ID: **LCSW**	Batch ID: **39487**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2012**	SeqNo: **1382526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel	924.398	50	1000	0	92.4	61	143				
Surr: Octacosane	70.138		80.00		87.7	26	152				
Surr: p-Terphenyl	71.766		80.00		89.7	57	132				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID							
			EPA 8015B				
RunID: **GC4_120405A**	QC Batch: **E12VW015**			PrepDate:			Analyst: **MCS**
TPH-Gasoline	ND	8.5	100		ug/L	1	4/5/2012
Surr: Chlorobenzene - d5	104	0	74-138		%REC	1	4/5/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GPLLPGE

Sample ID: **E120405LCS** SampType: **LCS** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83833**
Client ID: **LCSW** Batch ID: **E12VW015** TestNo: **EPA 8015B** Analysis Date: **4/5/2012** SeqNo: **1380658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	1256.000	100	1000	0	126	67	136				
Surr: Chlorobenzene - d5	49.228		50.00		98.5	74	138				

Sample ID: **E120405MB2** SampType: **MBLK** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83833**
Client ID: **PBW** Batch ID: **E12VW015** TestNo: **EPA 8015B** Analysis Date: **4/5/2012** SeqNo: **1380659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	22.000	100									
Surr: Chlorobenzene - d5	51.835		50.00		104	74	138				

Sample ID: **N007608-001BMS** SampType: **MS** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83833**
Client ID: **ZZZZZZ** Batch ID: **E12VW015** TestNo: **EPA 8015B** Analysis Date: **4/5/2012** SeqNo: **1380660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	1221.000	100	1000	33.00	119	67	136				
Surr: Chlorobenzene - d5	48.874		50.00		97.7	74	138				

Sample ID: **N007608-001BMSD** SampType: **MSD** TestCode: **8015_W_GPL** Units: **ug/L** Prep Date: RunNo: **83833**
Client ID: **ZZZZZZ** Batch ID: **E12VW015** TestNo: **EPA 8015B** Analysis Date: **4/5/2012** SeqNo: **1380662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline	1573.000	100	1000	33.00	154	67	136	1221	25.2	30	S
Surr: Chlorobenzene - d5	54.545		50.00		109	74	138		0	0	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Lab Order: N007618
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007618-001

Client Sample ID: HNWR-01-005
Collection Date: 4/4/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD							
EPA 3510C			**EPA 8081A**				
RunID: **GC5_120406B**	QC Batch: **39456**				PrepDate:	**4/5/2012**	Analyst: **MDM**
4,4'-DDD	ND	0.0052	0.052		µg/L	1	4/6/2012 02:42 AM
4,4'-DDE	ND	0.0052	0.052		µg/L	1	4/6/2012 02:42 AM
4,4'-DDT	ND	0.0052	0.052		µg/L	1	4/6/2012 02:42 AM
Aldrin	ND	0.0085	0.026		µg/L	1	4/6/2012 02:42 AM
alpha-BHC	ND	0.0090	0.026		µg/L	1	4/6/2012 02:42 AM
alpha-Chlordane	ND	0.0090	0.026		µg/L	1	4/6/2012 02:42 AM
beta-BHC	ND	0.011	0.026		µg/L	1	4/6/2012 02:42 AM
delta-BHC	ND	0.015	0.026		µg/L	1	4/6/2012 02:42 AM
Dieldrin	ND	0.019	0.052		µg/L	1	4/6/2012 02:42 AM
Endosulfan I	ND	0.0090	0.026		µg/L	1	4/6/2012 02:42 AM
Endosulfan II	ND	0.021	0.052		µg/L	1	4/6/2012 02:42 AM
Endosulfan sulfate	ND	0.028	0.052		µg/L	1	4/6/2012 02:42 AM
Endrin	ND	0.014	0.052		µg/L	1	4/6/2012 02:42 AM
Endrin aldehyde	ND	0.028	0.052		µg/L	1	4/6/2012 02:42 AM
gamma-BHC	ND	0.012	0.026		µg/L	1	4/6/2012 02:42 AM
gamma-Chlordane	ND	0.0073	0.026		µg/L	1	4/6/2012 02:42 AM
Heptachlor	ND	0.013	0.026		µg/L	1	4/6/2012 02:42 AM
Heptachlor epoxide	ND	0.0084	0.026		µg/L	1	4/6/2012 02:42 AM
Methoxychlor	ND	0.047	0.26		µg/L	1	4/6/2012 02:42 AM
Toxaphene	ND	0.16	2.6		µg/L	1	4/6/2012 02:42 AM
Surr: Tetrachloro-m-xylene	82.8	0	33-138		%REC	1	4/6/2012 02:42 AM
Surr: Decachlorobiphenyl	111	0	29-135		%REC	1	4/6/2012 02:42 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: **N007608-001P-MSD** SampType: **MSD** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83852**
Client ID: **ZZZZZZ** Batch ID: **39456** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **4/6/2012** SeqNo: **1381223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	0.420	0.050	0.5000	0	83.9	50	139	0.4365	3.91	30	
4,4'-DDE	0.434	0.050	0.5000	0	86.8	48	137	0.4414	1.70	30	
4,4'-DDT	0.443	0.050	0.5000	0	88.6	47	138	0.4512	1.84	30	
Aldrin	0.383	0.025	0.5000	0	76.6	42	138	0.4089	6.52	30	
alpha-BHC	0.393	0.025	0.5000	0	78.5	60	128	0.4153	5.59	30	
alpha-Chlordane	0.394	0.025	0.5000	0	78.8	63	123	0.4003	1.58	30	
beta-BHC	0.433	0.025	0.5000	0	86.6	66	126	0.4911	12.6	30	
delta-BHC	0.288	0.025	0.5000	0	57.5	46	136	0.2892	0.564	30	
Dieldrin	0.478	0.050	0.5000	0	95.7	62	129	0.4811	0.548	30	
Endosulfan I	0.439	0.025	0.5000	0	87.8	49	120	0.4346	1.06	30	
Endosulfan II	0.443	0.050	0.5000	0	88.6	42	130	0.4472	0.926	30	
Endosulfan sulfate	0.354	0.050	0.5000	0	70.9	54	137	0.3517	0.720	30	
Endrin	0.495	0.050	0.5000	0	99.0	56	134	0.5039	1.82	30	
Endrin aldehyde	0.480	0.050	0.5000	0	96.0	56	137	0.4886	1.82	30	
gamma-BHC	0.400	0.025	0.5000	0	80.0	30	146	0.4107	2.59	30	
gamma-Chlordane	0.410	0.025	0.5000	0	82.1	67	120	0.4175	1.71	30	
Heptachlor	0.399	0.025	0.5000	0	79.7	51	128	0.4155	4.15	30	
Heptachlor epoxide	0.412	0.025	0.5000	0	82.4	62	131	0.4172	1.29	30	
Methoxychlor	0.446	0.25	0.5000	0	89.1	56	150	0.4647	4.18	30	
Surr: Tetrachloro-m-xylene	0.398		0.5000		79.5	33	138		0	30	
Surr: Decachlorobiphenyl	0.485		0.5000		97.1	29	135		0	30	

Sample ID: **MB-39456** SampType: **MBLK** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83852**
Client ID: **PBW** Batch ID: **39456** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **4/6/2012** SeqNo: **1381224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	0.050									
4,4'-DDE	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: **MB-39456**	SampType: **MBLK**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83852**
Client ID: **PBW**	Batch ID: **39456**	TestNo: **EPA 8081A**	**EPA 3510C**	Analysis Date: **4/6/2012**	SeqNo: **1381224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	ND	0.050									
Aldrin	ND	0.025									
alpha-BHC	ND	0.025									
alpha-Chlordane	ND	0.025									
beta-BHC	ND	0.025									
delta-BHC	ND	0.025									
Dieldrin	ND	0.050									
Endosulfan I	ND	0.025									
Endosulfan II	ND	0.050									
Endosulfan sulfate	ND	0.050									
Endrin	ND	0.050									
Endrin aldehyde	ND	0.050									
gamma-BHC	ND	0.025									
gamma-Chlordane	ND	0.025									
Heptachlor	ND	0.025									
Heptachlor epoxide	ND	0.025									
Methoxychlor	ND	0.25									
Toxaphene	ND	2.5									
Surr: Tetrachloro-m-xylene	0.418		0.5000		83.6	33	138				
Surr: Decachlorobiphenyl	0.548		0.5000		110	29	135				

Sample ID: **LCS-39456_OCP**	SampType: **LCS**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83852**
Client ID: **LCSW**	Batch ID: **39456**	TestNo: **EPA 8081A**	**EPA 3510C**	Analysis Date: **4/6/2012**	SeqNo: **1381227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	0.481	0.050	0.5000	0	96.2	50	139				
4,4'-DDE	0.498	0.050	0.5000	0	99.6	48	137				
4,4'-DDT	0.520	0.050	0.5000	0	104	47	138				
Aldrin	0.462	0.025	0.5000	0	92.4	42	138				
alpha-BHC	0.498	0.025	0.5000	0	99.7	60	128				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: **LCS-39456_OCP**	SampType: **LCS**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83852**
Client ID: **LCSW**	Batch ID: **39456**	TestNo: **EPA 8081A**	**EPA 3510C**	Analysis Date: **4/6/2012**	SeqNo: **1381227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
alpha-Chlordane	0.458	0.025	0.5000	0	91.6	63	123				
beta-BHC	0.506	0.025	0.5000	0	101	66	126				
delta-BHC	0.317	0.025	0.5000	0	63.3	46	136				
Dieldrin	0.525	0.050	0.5000	0	105	62	129				
Endosulfan I	0.492	0.025	0.5000	0	98.3	49	120				
Endosulfan II	0.512	0.050	0.5000	0	102	42	130				
Endosulfan sulfate	0.438	0.050	0.5000	0	87.6	54	137				
Endrin	0.587	0.050	0.5000	0	117	56	134				
Endrin aldehyde	0.547	0.050	0.5000	0	109	56	137				
gamma-BHC	0.559	0.025	0.5000	0	112	30	146				
gamma-Chlordane	0.476	0.025	0.5000	0	95.3	67	120				
Heptachlor	0.472	0.025	0.5000	0	94.5	51	128				
Heptachlor epoxide	0.470	0.025	0.5000	0	94.0	62	131				
Methoxychlor	0.597	0.25	0.5000	0	119	56	150				
Surr: Tetrachloro-m-xylene	0.511		0.5000		102	33	138				
Surr: Decachlorobiphenyl	0.554		0.5000		111	29	135				

Sample ID: **N007608-001P-MS**	SampType: **MS**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83852**
Client ID: **ZZZZZZ**	Batch ID: **39456**	TestNo: **EPA 8081A**	**EPA 3510C**	Analysis Date: **4/6/2012**	SeqNo: **1381228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	0.436	0.050	0.5000	0	87.3	50	139				
4,4'-DDE	0.441	0.050	0.5000	0	88.3	48	137				
4,4'-DDT	0.451	0.050	0.5000	0	90.2	47	138				
Aldrin	0.409	0.025	0.5000	0	81.8	42	138				
alpha-BHC	0.415	0.025	0.5000	0	83.1	60	128				
alpha-Chlordane	0.400	0.025	0.5000	0	80.1	63	123				
beta-BHC	0.491	0.025	0.5000	0	98.2	66	126				
delta-BHC	0.289	0.025	0.5000	0	57.8	46	136				
Dieldrin	0.481	0.050	0.5000	0	96.2	62	129				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID: **N007608-001P-MS** SampType: **MS** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83852**
Client ID: **ZZZZZZ** Batch ID: **39456** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **4/6/2012** SeqNo: **1381228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Endosulfan I	0.435	0.025	0.5000	0	86.9	49	120				
Endosulfan II	0.447	0.050	0.5000	0	89.4	42	130				
Endosulfan sulfate	0.352	0.050	0.5000	0	70.3	54	137				
Endrin	0.504	0.050	0.5000	0	101	56	134				
Endrin aldehyde	0.489	0.050	0.5000	0	97.7	56	137				
gamma-BHC	0.411	0.025	0.5000	0	82.1	30	146				
gamma-Chlordane	0.418	0.025	0.5000	0	83.5	67	120				
Heptachlor	0.415	0.025	0.5000	0	83.1	51	128				
Heptachlor epoxide	0.417	0.025	0.5000	0	83.4	62	131				
Methoxychlor	0.465	0.25	0.5000	0	92.9	56	150				
Surr: Tetrachloro-m-xylene	0.417		0.5000		83.4	33	138				
Surr: Decachlorobiphenyl	0.487		0.5000		97.4	29	135				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PCBS BY GC/ECD							
	EPA 3510C			**EPA 8082**			
RunID: **GC5_120405A**	QC Batch: **39456**			PrepDate:	**4/5/2012**		Analyst: **MDM**
Aroclor 1016	ND	0.20	0.52		µg/L	1	4/5/2012 08:52 PM
Aroclor 1221	ND	0.51	1.0		µg/L	1	4/5/2012 08:52 PM
Aroclor 1232	ND	0.26	0.52		µg/L	1	4/5/2012 08:52 PM
Aroclor 1242	ND	0.24	0.52		µg/L	1	4/5/2012 08:52 PM
Aroclor 1248	ND	0.14	0.52		µg/L	1	4/5/2012 08:52 PM
Aroclor 1254	ND	0.25	0.52		µg/L	1	4/5/2012 08:52 PM
Aroclor 1260	ND	0.072	0.52		µg/L	1	4/5/2012 08:52 PM
Surr: Decachlorobiphenyl	98.7	0	29-133		%REC	1	4/5/2012 08:52 PM
Surr: Tetrachloro-m-xylene	86.3	0	50-120		%REC	1	4/5/2012 08:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_W_PGE

Sample ID: **LCS-39456**	SampType: **LCS**	TestCode: **8082_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83840**
Client ID: **LCSW**	Batch ID: **39456**	TestNo: **EPA 8082**	**EPA 3510C**	Analysis Date: **4/5/2012**	SeqNo: **1380811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	5.706	0.50	5.000	0	114	40	144				
Aroclor 1260	5.788	0.50	5.000	0	116	45	145				
Surr: Decachlorobiphenyl	0.544		0.5000		109	29	133				
Surr: Tetrachloro-m-xylene	0.548		0.5000		110	50	120				

Sample ID: **MB-39456**	SampType: **MBLK**	TestCode: **8082_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83840**
Client ID: **PBW**	Batch ID: **39456**	TestNo: **EPA 8082**	**EPA 3510C**	Analysis Date: **4/5/2012**	SeqNo: **1380812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.50									
Aroclor 1221	ND	1.0									
Aroclor 1232	ND	0.50									
Aroclor 1242	ND	0.50									
Aroclor 1248	ND	0.50									
Aroclor 1254	ND	0.50									
Aroclor 1260	ND	0.50									
Surr: Decachlorobiphenyl	0.474		0.5000		94.7	29	133				
Surr: Tetrachloro-m-xylene	0.436		0.5000		87.2	50	120				

Sample ID: **N007608-001P-MS**	SampType: **MS**	TestCode: **8082_W_PGE**	Units: **µg/L**	Prep Date: **4/5/2012**	RunNo: **83840**
Client ID: **ZZZZZZ**	Batch ID: **39456**	TestNo: **EPA 8082**	**EPA 3510C**	Analysis Date: **4/5/2012**	SeqNo: **1380815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	4.703	0.50	5.000	0	94.1	40	144				
Aroclor 1260	4.398	0.50	5.000	0	88.0	45	145				
Surr: Decachlorobiphenyl	0.439		0.5000		87.8	29	133				
Surr: Tetrachloro-m-xylene	0.383		0.5000		76.6	50	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_W_PGE

Sample ID: **N007608-001P-MSD** SampType: **MSD** TestCode: **8082_W_PGE** Units: **µg/L** Prep Date: **4/5/2012** RunNo: **83840**
Client ID: **ZZZZZZ** Batch ID: **39456** TestNo: **EPA 8082** **EPA 3510C** Analysis Date: **4/5/2012** SeqNo: **1380816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	5.161	0.50	5.000	0	103	40	144	4.703	9.28	30	
Aroclor 1260	5.163	0.50	5.000	0	103	45	145	4.398	16.0	30	
Surr: Decachlorobiphenyl	0.466		0.5000		93.3	29	133		0		
Surr: Tetrachloro-m-xylene	0.452		0.5000		90.4	50	120		0		

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas. NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Lab Order: N007618
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007618-001

Client Sample ID: HNWR-01-005
Collection Date: 4/4/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS1_120405A**	QC Batch: **D12VW040**			PrepDate:			Analyst: **QBM**
1,1,1,2-Tetrachloroethane	ND	0.12	1.0		ug/L	1	4/5/2012 01:42 PM
1,1,1-Trichloroethane	ND	0.14	1.0		ug/L	1	4/5/2012 01:42 PM
1,1,2,2-Tetrachloroethane	ND	0.20	1.0		ug/L	1	4/5/2012 01:42 PM
1,1,2-Trichloroethane	ND	0.18	1.0		ug/L	1	4/5/2012 01:42 PM
1,1-Dichloroethane	ND	0.13	1.0		ug/L	1	4/5/2012 01:42 PM
1,1-Dichloroethene	ND	0.18	1.0		ug/L	1	4/5/2012 01:42 PM
1,1-Dichloropropene	ND	0.085	1.0		ug/L	1	4/5/2012 01:42 PM
1,2,3-Trichlorobenzene	ND	0.098	1.0		ug/L	1	4/5/2012 01:42 PM
1,2,3-Trichloropropane	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
1,2,4-Trichlorobenzene	ND	0.082	1.0		ug/L	1	4/5/2012 01:42 PM
1,2,4-Trimethylbenzene	ND	0.076	1.0		ug/L	1	4/5/2012 01:42 PM
1,2-Dibromo-3-chloropropane	ND	0.34	2.0		ug/L	1	4/5/2012 01:42 PM
1,2-Dibromoethane	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
1,2-Dichlorobenzene	ND	0.095	1.0		ug/L	1	4/5/2012 01:42 PM
1,2-Dichloroethane	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
1,2-Dichloropropane	ND	0.17	1.0		ug/L	1	4/5/2012 01:42 PM
1,3,5-Trimethylbenzene	ND	0.13	1.0		ug/L	1	4/5/2012 01:42 PM
1,3-Dichlorobenzene	ND	0.094	1.0		ug/L	1	4/5/2012 01:42 PM
1,3-Dichloropropane	ND	0.13	1.0		ug/L	1	4/5/2012 01:42 PM
1,4-Dichlorobenzene	ND	0.069	1.0		ug/L	1	4/5/2012 01:42 PM
2,2-Dichloropropane	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
2-Butanone	ND	0.59	10		ug/L	1	4/5/2012 01:42 PM
2-Chlorotoluene	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
4-Chlorotoluene	ND	0.083	1.0		ug/L	1	4/5/2012 01:42 PM
4-Isopropyltoluene	ND	0.054	1.0		ug/L	1	4/5/2012 01:42 PM
4-Methyl-2-pentanone	ND	0.64	10		ug/L	1	4/5/2012 01:42 PM
Acetone	ND	1.3	10		ug/L	1	4/5/2012 01:42 PM
Acrolein	ND	4.3	20		ug/L	1	4/5/2012 01:42 PM
Acrylonitrile	ND	0.61	20		ug/L	1	4/5/2012 01:42 PM
Benzene	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
Bromobenzene	ND	0.083	1.0		ug/L	1	4/5/2012 01:42 PM
Bromochloromethane	ND	0.15	1.0		ug/L	1	4/5/2012 01:42 PM
Bromodichloromethane	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
Bromoform	ND	0.18	1.0		ug/L	1	4/5/2012 01:42 PM
Bromomethane	ND	0.14	1.0		ug/L	1	4/5/2012 01:42 PM
Carbon disulfide	ND	0.15	1.0		ug/L	1	4/5/2012 01:42 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: **MS1_120405A** QC Batch: **D12VW040** PrepDate: Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Carbon tetrachloride	ND	0.12	1.0		ug/L	1	4/5/2012 01:42 PM
Chlorobenzene	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
Chloroethane	ND	0.17	1.0		ug/L	1	4/5/2012 01:42 PM
Chloroform	ND	0.079	1.0		ug/L	1	4/5/2012 01:42 PM
Chloromethane	ND	0.19	1.0		ug/L	1	4/5/2012 01:42 PM
cis-1,2-Dichloroethene	ND	0.18	1.0		ug/L	1	4/5/2012 01:42 PM
cis-1,3-Dichloropropene	ND	0.16	1.0		ug/L	1	4/5/2012 01:42 PM
Dibromochloromethane	ND	0.16	1.0		ug/L	1	4/5/2012 01:42 PM
Dibromomethane	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
Dichlorodifluoromethane	ND	0.057	1.0		ug/L	1	4/5/2012 01:42 PM
Ethylbenzene	ND	0.13	1.0		ug/L	1	4/5/2012 01:42 PM
Freon-113	ND	0.18	1.0		ug/L	1	4/5/2012 01:42 PM
Hexachlorobutadiene	ND	0.20	1.0		ug/L	1	4/5/2012 01:42 PM
Isopropylbenzene	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
m,p-Xylene	ND	0.16	1.0		ug/L	1	4/5/2012 01:42 PM
Methylene chloride	ND	0.14	5.0		ug/L	1	4/5/2012 01:42 PM
MTBE	ND	0.089	1.0		ug/L	1	4/5/2012 01:42 PM
n-Butylbenzene	ND	0.070	1.0		ug/L	1	4/5/2012 01:42 PM
n-Propylbenzene	ND	0.076	1.0		ug/L	1	4/5/2012 01:42 PM
Naphthalene	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
o-Xylene	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
sec-Butylbenzene	ND	0.096	1.0		ug/L	1	4/5/2012 01:42 PM
Styrene	ND	0.10	1.0		ug/L	1	4/5/2012 01:42 PM
tert-Butylbenzene	ND	0.11	1.0		ug/L	1	4/5/2012 01:42 PM
Tetrachloroethene	ND	0.19	1.0		ug/L	1	4/5/2012 01:42 PM
Toluene	ND	0.082	2.5		ug/L	1	4/5/2012 01:42 PM
trans-1,2-Dichloroethene	ND	0.13	1.0		ug/L	1	4/5/2012 01:42 PM
trans-1,3-Dichloropropene	ND	0.15	1.0		ug/L	1	4/5/2012 01:42 PM
Trichloroethene	ND	0.18	1.0		ug/L	1	4/5/2012 01:42 PM
Trichlorofluoromethane	ND	0.19	1.0		ug/L	1	4/5/2012 01:42 PM
Vinyl chloride	ND	0.23	1.0		ug/L	1	4/5/2012 01:42 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	4/5/2012 01:42 PM
Surr: 1,2-Dichloroethane-d4	89.5	0	72-119		%REC	1	4/5/2012 01:42 PM
Surr: 4-Bromofluorobenzene	106	0	76-119		%REC	1	4/5/2012 01:42 PM
Surr: Dibromofluoromethane	96.6	0	85-115		%REC	1	4/5/2012 01:42 PM
Surr: Toluene-d8	109	0	81-120		%REC	1	4/5/2012 01:42 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	TB01-05
Lab Order:	N007618	**Collection Date:**	4/4/2012 12:00:00 PM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS1_120405A**	QC Batch: **D12VW040**			PrepDate:			Analyst: **QBM**
1,1,1,2-Tetrachloroethane	ND	0.12	1.0		ug/L	1	4/5/2012 02:41 PM
1,1,1-Trichloroethane	ND	0.14	1.0		ug/L	1	4/5/2012 02:41 PM
1,1,2,2-Tetrachloroethane	ND	0.20	1.0		ug/L	1	4/5/2012 02:41 PM
1,1,2-Trichloroethane	ND	0.18	1.0		ug/L	1	4/5/2012 02:41 PM
1,1-Dichloroethane	ND	0.13	1.0		ug/L	1	4/5/2012 02:41 PM
1,1-Dichloroethene	ND	0.18	1.0		ug/L	1	4/5/2012 02:41 PM
1,1-Dichloropropene	ND	0.085	1.0		ug/L	1	4/5/2012 02:41 PM
1,2,3-Trichlorobenzene	ND	0.098	1.0		ug/L	1	4/5/2012 02:41 PM
1,2,3-Trichloropropane	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
1,2,4-Trichlorobenzene	ND	0.082	1.0		ug/L	1	4/5/2012 02:41 PM
1,2,4-Trimethylbenzene	ND	0.076	1.0		ug/L	1	4/5/2012 02:41 PM
1,2-Dibromo-3-chloropropane	ND	0.34	2.0		ug/L	1	4/5/2012 02:41 PM
1,2-Dibromoethane	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
1,2-Dichlorobenzene	ND	0.095	1.0		ug/L	1	4/5/2012 02:41 PM
1,2-Dichloroethane	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
1,2-Dichloropropane	ND	0.17	1.0		ug/L	1	4/5/2012 02:41 PM
1,3,5-Trimethylbenzene	ND	0.13	1.0		ug/L	1	4/5/2012 02:41 PM
1,3-Dichlorobenzene	ND	0.094	1.0		ug/L	1	4/5/2012 02:41 PM
1,3-Dichloropropane	ND	0.13	1.0		ug/L	1	4/5/2012 02:41 PM
1,4-Dichlorobenzene	ND	0.069	1.0		ug/L	1	4/5/2012 02:41 PM
2,2-Dichloropropane	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
2-Butanone	ND	0.59	10		ug/L	1	4/5/2012 02:41 PM
2-Chlorotoluene	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
4-Chlorotoluene	ND	0.083	1.0		ug/L	1	4/5/2012 02:41 PM
4-Isopropyltoluene	ND	0.054	1.0		ug/L	1	4/5/2012 02:41 PM
4-Methyl-2-pentanone	ND	0.64	10		ug/L	1	4/5/2012 02:41 PM
Acetone	ND	1.3	10		ug/L	1	4/5/2012 02:41 PM
Acrolein	ND	4.3	20		ug/L	1	4/5/2012 02:41 PM
Acrylonitrile	ND	0.61	20		ug/L	1	4/5/2012 02:41 PM
Benzene	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
Bromobenzene	ND	0.083	1.0		ug/L	1	4/5/2012 02:41 PM
Bromochloromethane	ND	0.15	1.0		ug/L	1	4/5/2012 02:41 PM
Bromodichloromethane	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
Bromoform	ND	0.18	1.0		ug/L	1	4/5/2012 02:41 PM
Bromomethane	ND	0.14	1.0		ug/L	1	4/5/2012 02:41 PM
Carbon disulfide	ND	0.15	1.0		ug/L	1	4/5/2012 02:41 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Lab Order: N007618
Project: PG&E Topock, 405681.MP.06.TS
Lab ID: N007618-002

Client Sample ID: TB01-05
Collection Date: 4/4/2012 12:00:00 PM
Matrix: GROUNDWATER

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: **MS1_120405A** QC Batch: **D12VW040** PrepDate: Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Carbon tetrachloride	ND	0.12	1.0		ug/L	1	4/5/2012 02:41 PM
Chlorobenzene	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
Chloroethane	ND	0.17	1.0		ug/L	1	4/5/2012 02:41 PM
Chloroform	ND	0.079	1.0		ug/L	1	4/5/2012 02:41 PM
Chloromethane	ND	0.19	1.0		ug/L	1	4/5/2012 02:41 PM
cis-1,2-Dichloroethene	ND	0.18	1.0		ug/L	1	4/5/2012 02:41 PM
cis-1,3-Dichloropropene	ND	0.16	1.0		ug/L	1	4/5/2012 02:41 PM
Dibromochloromethane	ND	0.16	1.0		ug/L	1	4/5/2012 02:41 PM
Dibromomethane	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
Dichlorodifluoromethane	ND	0.057	1.0		ug/L	1	4/5/2012 02:41 PM
Ethylbenzene	ND	0.13	1.0		ug/L	1	4/5/2012 02:41 PM
Freon-113	ND	0.18	1.0		ug/L	1	4/5/2012 02:41 PM
Hexachlorobutadiene	ND	0.20	1.0		ug/L	1	4/5/2012 02:41 PM
Isopropylbenzene	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
m,p-Xylene	ND	0.16	1.0		ug/L	1	4/5/2012 02:41 PM
Methylene chloride	ND	0.14	5.0		ug/L	1	4/5/2012 02:41 PM
MTBE	ND	0.089	1.0		ug/L	1	4/5/2012 02:41 PM
n-Butylbenzene	ND	0.070	1.0		ug/L	1	4/5/2012 02:41 PM
n-Propylbenzene	ND	0.076	1.0		ug/L	1	4/5/2012 02:41 PM
Naphthalene	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
o-Xylene	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
sec-Butylbenzene	ND	0.096	1.0		ug/L	1	4/5/2012 02:41 PM
Styrene	ND	0.10	1.0		ug/L	1	4/5/2012 02:41 PM
tert-Butylbenzene	ND	0.11	1.0		ug/L	1	4/5/2012 02:41 PM
Tetrachloroethene	ND	0.19	1.0		ug/L	1	4/5/2012 02:41 PM
Toluene	ND	0.082	2.5		ug/L	1	4/5/2012 02:41 PM
trans-1,2-Dichloroethene	ND	0.13	1.0		ug/L	1	4/5/2012 02:41 PM
trans-1,3-Dichloropropene	ND	0.15	1.0		ug/L	1	4/5/2012 02:41 PM
Trichloroethene	ND	0.18	1.0		ug/L	1	4/5/2012 02:41 PM
Trichlorofluoromethane	ND	0.19	1.0		ug/L	1	4/5/2012 02:41 PM
Vinyl chloride	ND	0.23	1.0		ug/L	1	4/5/2012 02:41 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	4/5/2012 02:41 PM
Surr: 1,2-Dichloroethane-d4	90.7	0	72-119		%REC	1	4/5/2012 02:41 PM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	1	4/5/2012 02:41 PM
Surr: Dibromofluoromethane	96.4	0	85-115		%REC	1	4/5/2012 02:41 PM
Surr: Toluene-d8	106	0	81-120		%REC	1	4/5/2012 02:41 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120405LCS** SampType: **LCS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **LCSW** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	19.810	1.0	20.00	0	99.0	81	129				
1,1,1-Trichloroethane	18.870	1.0	20.00	0	94.4	67	132				
1,1,2,2-Tetrachloroethane	19.550	1.0	20.00	0	97.8	63	128				
1,1,2-Trichloroethane	20.230	1.0	20.00	0	101	75	125				
1,1-Dichloroethane	17.880	1.0	20.00	0	89.4	69	133				
1,1-Dichloroethene	17.510	1.0	20.00	0	87.6	68	130				
1,1-Dichloropropene	19.470	1.0	20.00	0	97.4	73	132				
1,2,3-Trichlorobenzene	21.500	1.0	20.00	0	108	67	137				
1,2,3-Trichloropropane	19.110	1.0	20.00	0	95.6	73	124				
1,2,4-Trichlorobenzene	21.660	1.0	20.00	0	108	66	134				
1,2,4-Trimethylbenzene	18.190	1.0	20.00	0	91.0	74	132				
1,2-Dibromo-3-chloropropane	19.850	2.0	20.00	0	99.2	50	132				
1,2-Dibromoethane	20.840	1.0	20.00	0	104	80	121				
1,2-Dichlorobenzene	19.220	1.0	20.00	0	96.1	71	122				
1,2-Dichloroethane	18.860	1.0	20.00	0	94.3	69	132				
1,2-Dichloropropane	19.340	1.0	20.00	0	96.7	75	125				
1,3,5-Trimethylbenzene	18.140	1.0	20.00	0	90.7	74	131				
1,3-Dichlorobenzene	19.390	1.0	20.00	0	97.0	75	124				
1,3-Dichloropropane	20.080	1.0	20.00	0	100	73	126				
1,4-Dichlorobenzene	18.670	1.0	20.00	0	93.4	74	123				
2,2-Dichloropropane	15.170	1.0	20.00	0	75.8	69	137				
2-Butanone	231.650	10	200.0	0	116	49	136				
2-Chlorotoluene	18.010	1.0	20.00	0	90.1	73	126				
4-Chlorotoluene	18.550	1.0	20.00	0	92.8	74	128				
4-Isopropyltoluene	19.190	1.0	20.00	0	96.0	73	130				
4-Methyl-2-pentanone	214.210	10	200.0	0	107	58	134				
Acetone	314.290	10	200.0	0	157	40	135				S
Acrolein	171.170	20	200.0	0	85.6	75	125				
Acrylonitrile	257.190	20	200.0	0	129	75	125				S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120405LCS** SampType: **LCS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **LCSW** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.130	1.0	20.00	0	95.7	81	122				
Bromobenzene	18.830	1.0	20.00	0	94.2	76	124				
Bromochloromethane	19.160	1.0	20.00	0	95.8	65	129				
Bromodichloromethane	20.390	1.0	20.00	0	102	76	121				
Bromoform	23.840	1.0	20.00	0	119	69	128				
Bromomethane	16.710	1.0	20.00	0	83.6	53	141				
Carbon disulfide	17.430	1.0	20.00	0	87.2	75	125				
Carbon tetrachloride	19.650	1.0	20.00	0	98.2	66	138				
Chlorobenzene	19.450	1.0	20.00	0	97.3	81	122				
Chloroethane	16.830	1.0	20.00	0	84.2	58	133				
Chloroform	18.530	1.0	20.00	0	92.6	69	128				
Chloromethane	17.430	1.0	20.00	0	87.2	56	131				
cis-1,2-Dichloroethene	18.450	1.0	20.00	0	92.2	72	126				
cis-1,3-Dichloropropene	19.820	1.0	20.00	0	99.1	69	131				
Dibromochloromethane	21.900	1.0	20.00	0	110	66	133				
Dibromomethane	20.560	1.0	20.00	0	103	76	125				
Dichlorodifluoromethane	17.240	1.0	20.00	0	86.2	53	153				
Ethylbenzene	18.660	1.0	20.00	0	93.3	73	127				
Freon-113	18.070	1.0	20.00	0	90.4	75	125				
Hexachlorobutadiene	20.160	1.0	20.00	0	101	67	131				
Isopropylbenzene	18.180	1.0	20.00	0	90.9	75	127				
m,p-Xylene	38.710	1.0	40.00	0	96.8	76	128				
Methylene chloride	19.420	5.0	20.00	0	97.1	63	137				
MTBE	15.640	1.0	20.00	0	78.2	65	123				
n-Butylbenzene	19.120	1.0	20.00	0	95.6	69	137				
n-Propylbenzene	18.240	1.0	20.00	0	91.2	72	129				
Naphthalene	21.770	1.0	20.00	0	109	54	138				
o-Xylene	19.920	1.0	20.00	0	99.6	80	121				
sec-Butylbenzene	18.660	1.0	20.00	0	93.3	72	127				
Styrene	20.600	1.0	20.00	0	103	65	134				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120405LCS** SampType: **LCS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **LCSW** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
tert-Butylbenzene	18.300	1.0	20.00	0	91.5	70	129				
Tetrachloroethene	19.020	1.0	20.00	0	95.1	66	128				
Toluene	19.200	2.5	20.00	0	96.0	77	122				
trans-1,2-Dichloroethene	18.720	1.0	20.00	0	93.6	63	137				
trans-1,3-Dichloropropene	19.660	1.0	20.00	0	98.3	59	135				
Trichloroethene	19.340	1.0	20.00	0	96.7	70	127				
Trichlorofluoromethane	16.970	1.0	20.00	0	84.8	57	129				
Vinyl chloride	17.320	1.0	20.00	0	86.6	50	134				
Xylenes, Total	58.630	2.0	60.00	0	97.7	75	125				
Surr: 1,2-Dichloroethane-d4	23.560		25.00		94.2	72	119				
Surr: 4-Bromofluorobenzene	25.410		25.00		102	76	119				
Surr: Dibromofluoromethane	25.220		25.00		101	85	115				
Surr: Toluene-d8	25.050		25.00		100	81	120				

Sample ID: **N007618-001LMS** SampType: **MS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **ZZZZZZ** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.190	1.0	20.00	0	101	81	129				
1,1,1-Trichloroethane	19.350	1.0	20.00	0	96.8	67	132				
1,1,2,2-Tetrachloroethane	21.690	1.0	20.00	0	108	63	128				
1,1,2-Trichloroethane	21.160	1.0	20.00	0	106	75	125				
1,1-Dichloroethane	18.170	1.0	20.00	0	90.9	69	133				
1,1-Dichloroethene	17.570	1.0	20.00	0	87.9	68	130				
1,1-Dichloropropene	19.710	1.0	20.00	0	98.6	73	132				
1,2,3-Trichlorobenzene	22.320	1.0	20.00	0	112	67	137				
1,2,3-Trichloropropane	18.090	1.0	20.00	0	90.4	73	124				
1,2,4-Trichlorobenzene	22.110	1.0	20.00	0	111	66	134				
1,2,4-Trimethylbenzene	13.620	1.0	20.00	0	68.1	74	132				S
1,2-Dibromo-3-chloropropane	21.610	2.0	20.00	0	108	50	132				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007618-001LMS** SampType: **MS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **ZZZZZZ** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	22.190	1.0	20.00	0	111	80	121				
1,2-Dichlorobenzene	19.910	1.0	20.00	0	99.6	71	122				
1,2-Dichloroethane	19.800	1.0	20.00	0	99.0	69	132				
1,2-Dichloropropane	20.130	1.0	20.00	0	101	75	125				
1,3,5-Trimethylbenzene	15.510	1.0	20.00	0	77.6	74	131				
1,3-Dichlorobenzene	19.670	1.0	20.00	0	98.4	75	124				
1,3-Dichloropropane	20.200	1.0	20.00	0	101	73	126				
1,4-Dichlorobenzene	19.340	1.0	20.00	0	96.7	74	123				
2,2-Dichloropropane	15.540	1.0	20.00	0	77.7	69	137				
2-Butanone	169.810	10	200.0	0	84.9	49	136				
2-Chlorotoluene	18.230	1.0	20.00	0	91.2	73	126				
4-Chlorotoluene	18.660	1.0	20.00	0	93.3	74	128				
4-Isopropyltoluene	18.480	1.0	20.00	0	92.4	73	130				
4-Methyl-2-pentanone	224.480	10	200.0	0	112	58	134				
Acetone	153.720	10	200.0	3.340	75.2	40	135				
Acrolein	169.670	20	200.0	0	84.8	75	125				
Acrylonitrile	258.720	20	200.0	0	129	75	125				S
Benzene	19.700	1.0	20.00	0	98.5	81	122				
Bromobenzene	19.590	1.0	20.00	0	98.0	76	124				
Bromochloromethane	19.490	1.0	20.00	0	97.5	65	129				
Bromodichloromethane	21.130	1.0	20.00	0	106	76	121				
Bromoform	25.310	1.0	20.00	0	127	69	128				
Bromomethane	17.390	1.0	20.00	0	87.0	53	141				
Carbon disulfide	17.690	1.0	20.00	0	88.4	75	125				
Carbon tetrachloride	20.010	1.0	20.00	0	100	66	138				
Chlorobenzene	19.750	1.0	20.00	0	98.8	81	122				
Chloroethane	16.800	1.0	20.00	0	84.0	58	133				
Chloroform	19.070	1.0	20.00	0	95.4	69	128				
Chloromethane	18.160	1.0	20.00	0	90.8	56	131				
cis-1,2-Dichloroethene	19.180	1.0	20.00	0	95.9	72	126				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007618-001LMS** SampType: **MS** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **ZZZZZZ** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	20.530	1.0	20.00	0	103	69	131				
Dibromochloromethane	21.890	1.0	20.00	0	109	66	133				
Dibromomethane	21.370	1.0	20.00	0	107	76	125				
Dichlorodifluoromethane	17.680	1.0	20.00	0	88.4	53	153				
Ethylbenzene	18.470	1.0	20.00	0	92.4	73	127				
Freon-113	18.530	1.0	20.00	0	92.6	75	125				
Hexachlorobutadiene	20.380	1.0	20.00	0	102	67	131				
Isopropylbenzene	18.460	1.0	20.00	0	92.3	75	127				
m,p-Xylene	36.330	1.0	40.00	0	90.8	76	128				
Methylene chloride	19.100	5.0	20.00	0.6700	92.2	63	137				
MTBE	16.460	1.0	20.00	0	82.3	65	123				
n-Butylbenzene	19.040	1.0	20.00	0	95.2	69	137				
n-Propylbenzene	18.250	1.0	20.00	0	91.2	72	129				
Naphthalene	21.270	1.0	20.00	0	106	54	138				
o-Xylene	19.130	1.0	20.00	0	95.7	80	121				
sec-Butylbenzene	18.810	1.0	20.00	0	94.1	72	127				
Styrene	12.270	1.0	20.00	0	61.4	65	134				S
tert-Butylbenzene	19.050	1.0	20.00	0	95.2	70	129				
Tetrachloroethene	19.030	1.0	20.00	0	95.2	66	128				
Toluene	19.300	2.5	20.00	0	96.5	77	122				
trans-1,2-Dichloroethene	18.710	1.0	20.00	0	93.6	63	137				
trans-1,3-Dichloropropene	20.570	1.0	20.00	0	103	59	135				
Trichloroethene	19.920	1.0	20.00	0	99.6	70	127				
Trichlorofluoromethane	17.400	1.0	20.00	0	87.0	57	129				
Vinyl chloride	17.650	1.0	20.00	0	88.2	50	134				
Xylenes, Total	55.460	2.0	60.00	0	92.4	75	125				
Surr: 1,2-Dichloroethane-d4	24.640		25.00		98.6	72	119				
Surr: 4-Bromofluorobenzene	25.600		25.00		102	76	119				
Surr: Dibromofluoromethane	25.840		25.00		103	85	115				
Surr: Toluene-d8	25.140		25.00		101	81	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007618-001LMSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **ZZZZZZ** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.340	1.0	20.00	0	102	81	129	20.19	0.740	20	
1,1,1-Trichloroethane	19.850	1.0	20.00	0	99.2	67	132	19.35	2.55	20	
1,1,2,2-Tetrachloroethane	20.010	1.0	20.00	0	100	63	128	21.69	8.06	20	
1,1,2-Trichloroethane	20.260	1.0	20.00	0	101	75	125	21.16	4.35	20	
1,1-Dichloroethane	18.770	1.0	20.00	0	93.8	69	133	18.17	3.25	20	
1,1-Dichloroethene	17.000	1.0	20.00	0	85.0	68	130	17.57	3.30	20	
1,1-Dichloropropene	19.680	1.0	20.00	0	98.4	73	132	19.71	0.152	20	
1,2,3-Trichlorobenzene	22.040	1.0	20.00	0	110	67	137	22.32	1.26	20	
1,2,3-Trichloropropane	16.680	1.0	20.00	0	83.4	73	124	18.09	8.11	20	
1,2,4-Trichlorobenzene	22.300	1.0	20.00	0	112	66	134	22.11	0.856	20	
1,2,4-Trimethylbenzene	9.370	1.0	20.00	0	46.9	74	132	13.62	37.0	20	SR
1,2-Dibromo-3-chloropropane	20.230	2.0	20.00	0	101	50	132	21.61	6.60	20	
1,2-Dibromoethane	21.030	1.0	20.00	0	105	80	121	22.19	5.37	20	
1,2-Dichlorobenzene	20.270	1.0	20.00	0	101	71	122	19.91	1.79	20	
1,2-Dichloroethane	19.220	1.0	20.00	0	96.1	69	132	19.80	2.97	20	
1,2-Dichloropropane	20.170	1.0	20.00	0	101	75	125	20.13	0.199	20	
1,3,5-Trimethylbenzene	13.120	1.0	20.00	0	65.6	74	131	15.51	16.7	20	S
1,3-Dichlorobenzene	20.270	1.0	20.00	0	101	75	124	19.67	3.00	20	
1,3-Dichloropropane	20.010	1.0	20.00	0	100	73	126	20.20	0.945	20	
1,4-Dichlorobenzene	19.710	1.0	20.00	0	98.6	74	123	19.34	1.90	20	
2,2-Dichloropropane	15.930	1.0	20.00	0	79.6	69	137	15.54	2.48	20	
2-Butanone	161.010	10	200.0	0	80.5	49	136	169.8	5.32	20	
2-Chlorotoluene	18.190	1.0	20.00	0	91.0	73	126	18.23	0.220	20	
4-Chlorotoluene	19.030	1.0	20.00	0	95.2	74	128	18.66	1.96	20	
4-Isopropyltoluene	18.020	1.0	20.00	0	90.1	73	130	18.48	2.52	20	
4-Methyl-2-pentanone	202.240	10	200.0	0	101	58	134	224.5	10.4	20	
Acetone	146.760	10	200.0	3.340	71.7	40	135	153.7	4.63	20	
Acrolein	150.250	20	200.0	0	75.1	75	125	169.7	12.1	20	
Acrylonitrile	238.180	20	200.0	0	119	75	125	258.7	8.27	20	
Benzene	19.990	1.0	20.00	0	100	81	122	19.70	1.46	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. 3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007618-001LMSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **ZZZZZZ** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	19.820	1.0	20.00	0	99.1	76	124	19.59	1.17	20	
Bromochloromethane	19.460	1.0	20.00	0	97.3	65	129	19.49	0.154	20	
Bromodichloromethane	20.690	1.0	20.00	0	103	76	121	21.13	2.10	20	
Bromoform	23.960	1.0	20.00	0	120	69	128	25.31	5.48	20	
Bromomethane	17.370	1.0	20.00	0	86.9	53	141	17.39	0.115	20	
Carbon disulfide	18.360	1.0	20.00	0	91.8	75	125	17.69	3.72	20	
Carbon tetrachloride	20.490	1.0	20.00	0	102	66	138	20.01	2.37	20	
Chlorobenzene	19.730	1.0	20.00	0	98.6	81	122	19.75	0.101	20	
Chloroethane	17.350	1.0	20.00	0	86.8	58	133	16.80	3.22	20	
Chloroform	18.950	1.0	20.00	0	94.8	69	128	19.07	0.631	20	
Chloromethane	18.140	1.0	20.00	0	90.7	56	131	18.16	0.110	20	
cis-1,2-Dichloroethene	20.050	1.0	20.00	0	100	72	126	19.18	4.44	20	
cis-1,3-Dichloropropene	20.270	1.0	20.00	0	101	69	131	20.53	1.27	20	
Dibromochloromethane	22.110	1.0	20.00	0	111	66	133	21.89	1.00	20	
Dibromomethane	20.660	1.0	20.00	0	103	76	125	21.37	3.38	20	
Dichlorodifluoromethane	17.870	1.0	20.00	0	89.4	53	153	17.68	1.07	20	
Ethylbenzene	18.400	1.0	20.00	0	92.0	73	127	18.47	0.380	20	
Freon-113	19.070	1.0	20.00	0	95.4	75	125	18.53	2.87	20	
Hexachlorobutadiene	21.060	1.0	20.00	0	105	67	131	20.38	3.28	20	
Isopropylbenzene	18.550	1.0	20.00	0	92.8	75	127	18.46	0.486	20	
m,p-Xylene	34.320	1.0	40.00	0	85.8	76	128	36.33	5.69	20	
Methylene chloride	19.620	5.0	20.00	0.6700	94.8	63	137	19.10	2.69	20	
MTBE	15.730	1.0	20.00	0	78.7	65	123	16.46	4.54	20	
n-Butylbenzene	19.530	1.0	20.00	0	97.6	69	137	19.04	2.54	20	
n-Propylbenzene	18.480	1.0	20.00	0	92.4	72	129	18.25	1.25	20	
Naphthalene	14.540	1.0	20.00	0	72.7	54	138	21.27	37.6	20	R
o-Xylene	18.390	1.0	20.00	0	92.0	80	121	19.13	3.94	20	
sec-Butylbenzene	19.250	1.0	20.00	0	96.2	72	127	18.81	2.31	20	
Styrene	5.800	1.0	20.00	0	29.0	65	134	12.27	71.6	20	SR
tert-Butylbenzene	19.650	1.0	20.00	0	98.2	70	129	19.05	3.10	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **N007618-001LMSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **ZZZZZZ** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	19.850	1.0	20.00	0	99.2	66	128	19.03	4.22	20	
Toluene	19.110	2.5	20.00	0	95.6	77	122	19.30	0.989	20	
trans-1,2-Dichloroethene	18.920	1.0	20.00	0	94.6	63	137	18.71	1.12	20	
trans-1,3-Dichloropropene	19.850	1.0	20.00	0	99.2	59	135	20.57	3.56	20	
Trichloroethene	20.230	1.0	20.00	0	101	70	127	19.92	1.54	20	
Trichlorofluoromethane	17.970	1.0	20.00	0	89.8	57	129	17.40	3.22	20	
Vinyl chloride	17.640	1.0	20.00	0	88.2	50	134	17.65	0.0567	20	
Xylenes, Total	52.710	2.0	60.00	0	87.9	75	125	55.46	5.08	20	
Surr: 1,2-Dichloroethane-d4	23.660		25.00		94.6	72	119		0		
Surr: 4-Bromofluorobenzene	25.600		25.00		102	76	119		0		
Surr: Dibromofluoromethane	25.160		25.00		101	85	115		0		
Surr: Toluene-d8	24.580		25.00		98.3	81	120		0		

Sample ID: **D120405MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **PBW** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120405MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **PBW** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LLPGE

Sample ID: **D120405MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **ug/L** Prep Date: RunNo: **83830**
Client ID: **PBW** Batch ID: **D12VW040** TestNo: **EPA 8260B** Analysis Date: **4/5/2012** SeqNo: **1380646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	0.970	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	23.000		25.00		92.0	72	119				
Surr: 4-Bromofluorobenzene	26.570		25.00		106	76	119				
Surr: Dibromofluoromethane	24.210		25.00		96.8	85	115				
Surr: Toluene-d8	27.410		25.00		110	81	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-005
Lab Order:	N007618	**Collection Date:**	4/4/2012 11:49:00 AM
Project:	PG&E Topock, 405681.MP.06.TS	**Matrix:**	GROUNDWATER
Lab ID:	N007618-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM							
EPA 3510C			**EPA 8270CSIM**				
RunID: **MS4_120411A**	QC Batch: **39492**			PrepDate:	**4/10/2012**		Analyst: **MDM**
1-Methylnaphthalene	ND	0.022	0.20		ug/L	1	4/11/2012 03:10 PM
2-Methylnaphthalene	ND	0.042	0.20		ug/L	1	4/11/2012 03:10 PM
Acenaphthene	ND	0.022	0.20		ug/L	1	4/11/2012 03:10 PM
Acenaphthylene	ND	0.025	0.20		ug/L	1	4/11/2012 03:10 PM
Anthracene	ND	0.024	0.20		ug/L	1	4/11/2012 03:10 PM
Benzo(a)anthracene	ND	0.015	0.20		ug/L	1	4/11/2012 03:10 PM
Benzo(a)pyrene	ND	0.022	0.20		ug/L	1	4/11/2012 03:10 PM
Benzo(b)fluoranthene	ND	0.017	0.20		ug/L	1	4/11/2012 03:10 PM
Benzo(g,h,i)perylene	ND	0.015	0.20		ug/L	1	4/11/2012 03:10 PM
Benzo(k)fluoranthene	ND	0.026	0.20		ug/L	1	4/11/2012 03:10 PM
Chrysene	ND	0.025	0.20		ug/L	1	4/11/2012 03:10 PM
Dibenz(a,h)anthracene	ND	0.024	0.20		ug/L	1	4/11/2012 03:10 PM
Fluoranthene	ND	0.025	0.20		ug/L	1	4/11/2012 03:10 PM
Fluorene	ND	0.015	0.20		ug/L	1	4/11/2012 03:10 PM
Indeno(1,2,3-cd)pyrene	ND	0.018	0.20		ug/L	1	4/11/2012 03:10 PM
Naphthalene	ND	0.025	0.20		ug/L	1	4/11/2012 03:10 PM
Phenanthrene	ND	0.024	0.20		ug/L	1	4/11/2012 03:10 PM
Pyrene	ND	0.025	0.20		ug/L	1	4/11/2012 03:10 PM
Surr: 1,2-Dichlorobenzene-d4	65.0	0	27-100		%REC	1	4/11/2012 03:10 PM
Surr: 2-Fluorobiphenyl	74.0	0	34-135		%REC	1	4/11/2012 03:10 PM
Surr: 4-Terphenyl-d14	82.0	0	34-167		%REC	1	4/11/2012 03:10 PM
Surr: Nitrobenzene-d5	96.0	0	25-135		%REC	1	4/11/2012 03:10 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: **LCS-39492** SampType: **LCS** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **4/10/2012** RunNo: **83895**
Client ID: **LCSW** Batch ID: **39492** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **4/11/2012** SeqNo: **1382612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.770	0.20	1.000	0	77.0	35	131				
2-Methylnaphthalene	0.980	0.20	1.000	0	98.0	36	121				
Acenaphthene	0.920	0.20	1.000	0	92.0	39	125				
Acenaphthylene	0.940	0.20	1.000	0	94.0	43	140				
Anthracene	0.830	0.20	1.000	0	83.0	41	132				
Benzo(a)anthracene	1.020	0.20	1.000	0	102	58	141				
Benzo(a)pyrene	1.070	0.20	1.000	0	107	31	142				
Benzo(b)fluoranthene	1.210	0.20	1.000	0	121	42	156				
Benzo(g,h,i)perylene	1.180	0.20	1.000	0	118	12	171				
Benzo(k)fluoranthene	0.980	0.20	1.000	0	98.0	49	165				
Chrysene	0.960	0.20	1.000	0	96.0	51	155				
Dibenz(a,h)anthracene	1.170	0.20	1.000	0	117	28	153				
Fluoranthene	0.960	0.20	1.000	0	96.0	47	158				
Fluorene	1.000	0.20	1.000	0	100	40	140				
Indeno(1,2,3-cd)pyrene	1.140	0.20	1.000	0	114	20	167				
Naphthalene	0.880	0.20	1.000	0	88.0	39	125				
Phenanthrene	0.870	0.20	1.000	0	87.0	46	144				
Pyrene	0.920	0.20	1.000	0	92.0	39	158				
Surr: 1,2-Dichlorobenzene-d4	0.760		1.000		76.0	27	100				
Surr: 2-Fluorobiphenyl	0.880		1.000		88.0	34	135				
Surr: 4-Terphenyl-d14	0.960		1.000		96.0	34	167				
Surr: Nitrobenzene-d5	1.160		1.000		116	25	135				

Sample ID: **MB-39492** SampType: **MBLK** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **4/10/2012** RunNo: **83895**
Client ID: **PBW** Batch ID: **39492** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **4/11/2012** SeqNo: **1382613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: **MB-39492** SampType: **MBLK** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **4/10/2012** RunNo: **83895**
Client ID: **PBW** Batch ID: **39492** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **4/11/2012** SeqNo: **1382613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	0.20									
Acenaphthene	ND	0.20									
Acenaphthylene	ND	0.20									
Anthracene	ND	0.20									
Benzo(a)anthracene	ND	0.20									
Benzo(a)pyrene	ND	0.20									
Benzo(b)fluoranthene	ND	0.20									
Benzo(g,h,i)perylene	ND	0.20									
Benzo(k)fluoranthene	ND	0.20									
Chrysene	ND	0.20									
Dibenz(a,h)anthracene	ND	0.20									
Fluoranthene	ND	0.20									
Fluorene	ND	0.20									
Indeno(1,2,3-cd)pyrene	ND	0.20									
Naphthalene	ND	0.20									
Phenanthrene	ND	0.20									
Pyrene	ND	0.20									
Surr: 1,2-Dichlorobenzene-d4	0.630		1.000		63.0	27	100				
Surr: 2-Fluorobiphenyl	0.740		1.000		74.0	34	135				
Surr: 4-Terphenyl-d14	0.840		1.000		84.0	34	167				
Surr: Nitrobenzene-d5	0.990		1.000		99.0	25	135				

Sample ID: **N007618-001I-MS** SampType: **MS** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **4/10/2012** RunNo: **83895**
Client ID: **ZZZZZZ** Batch ID: **39492** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **4/11/2012** SeqNo: **1382615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.909	0.20	4.040	0	47.3	35	131				
2-Methylnaphthalene	2.414	0.20	4.040	0	59.8	36	121				
Acenaphthene	2.384	0.20	4.040	0	59.0	39	125				
Acenaphthylene	2.434	0.20	4.040	0	60.3	43	140				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
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CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: N007618-001I-MS	SampType: MS	TestCode: 8270_W_SIM	Units: ug/L	Prep Date: 4/10/2012	RunNo: 83895
Client ID: ZZZZZZ	Batch ID: 39492	TestNo: EPA 8270CSI EPA 3510C		Analysis Date: 4/11/2012	SeqNo: 1382615

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Anthracene	2.869	0.20	4.040	0	71.0	41	132				
Benzo(a)anthracene	3.596	0.20	4.040	0	89.0	58	141				
Benzo(a)pyrene	3.778	0.20	4.040	0	93.5	31	142				
Benzo(b)fluoranthene	4.010	0.20	4.040	0	99.2	42	156				
Benzo(g,h,i)perylene	4.121	0.20	4.040	0	102	12	171				
Benzo(k)fluoranthene	3.465	0.20	4.040	0	85.8	49	165				
Chrysene	3.141	0.20	4.040	0	77.8	51	155				
Dibenz(a,h)anthracene	4.212	0.20	4.040	0	104	28	153				
Fluoranthene	3.111	0.20	4.040	0	77.0	47	158				
Fluorene	2.707	0.20	4.040	0	67.0	40	140				
Indeno(1,2,3-cd)pyrene	4.061	0.20	4.040	0	101	20	167				
Naphthalene	2.131	0.20	4.040	0	52.8	39	125				
Phenanthrene	2.707	0.20	4.040	0	67.0	46	144				
Pyrene	3.010	0.20	4.040	0	74.5	39	158				
Surr: 1,2-Dichlorobenzene-d4	0.465		1.010		46.0	27	100				
Surr: 2-Fluorobiphenyl	0.616		1.010		61.0	34	135				
Surr: 4-Terphenyl-d14	0.848		1.010		84.0	34	167				
Surr: Nitrobenzene-d5	0.798		1.010		79.0	25	135				

Sample ID: N007618-001I-MSD	SampType: MSD	TestCode: 8270_W_SIM	Units: ug/L	Prep Date: 4/10/2012	RunNo: 83895
Client ID: ZZZZZZ	Batch ID: 39492	TestNo: EPA 8270CSI EPA 3510C		Analysis Date: 4/11/2012	SeqNo: 1382616

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.818	0.20	4.040	0	45.0	35	131	1.909	4.88	30	
2-Methylnaphthalene	2.333	0.20	4.040	0	57.8	36	121	2.414	3.40	30	
Acenaphthene	2.202	0.20	4.040	0	54.5	39	125	2.384	7.93	30	
Acenaphthylene	2.232	0.20	4.040	0	55.2	43	140	2.434	8.66	30	
Anthracene	2.566	0.20	4.040	0	63.5	41	132	2.869	11.2	30	
Benzo(a)anthracene	3.444	0.20	4.040	0	85.2	58	141	3.596	4.30	30	
Benzo(a)pyrene	3.697	0.20	4.040	0	91.5	31	142	3.778	2.16	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID: **N007618-001I-MSD** SampType: **MSD** TestCode: **8270_W_SIM** Units: **ug/L** Prep Date: **4/10/2012** RunNo: **83895**
Client ID: **ZZZZZZ** Batch ID: **39492** TestNo: **EPA 8270CSI EPA 3510C** Analysis Date: **4/11/2012** SeqNo: **1382616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	4.253	0.20	4.040	0	105	42	156	4.010	5.87	30	
Benzo(g,h,i)perylene	4.000	0.20	4.040	0	99.0	12	171	4.121	2.99	30	
Benzo(k)fluoranthene	3.091	0.20	4.040	0	76.5	49	165	3.465	11.4	30	
Chrysene	3.081	0.20	4.040	0	76.2	51	155	3.141	1.95	30	
Dibenz(a,h)anthracene	4.081	0.20	4.040	0	101	28	153	4.212	3.17	30	
Fluoranthene	2.939	0.20	4.040	0	72.8	47	158	3.111	5.68	30	
Fluorene	2.475	0.20	4.040	0	61.3	40	140	2.707	8.97	30	
Indeno(1,2,3-cd)pyrene	3.949	0.20	4.040	0	97.8	20	167	4.061	2.77	30	
Naphthalene	2.071	0.20	4.040	0	51.3	39	125	2.131	2.88	30	
Phenanthrene	2.495	0.20	4.040	0	61.8	46	144	2.707	8.16	30	
Pyrene	2.919	0.20	4.040	0	72.2	39	158	3.010	3.07	30	
Surr: 1,2-Dichlorobenzene-d4	0.444		1.010		44.0	27	100		0		
Surr: 2-Fluorobiphenyl	0.576		1.010		57.0	34	135		0		
Surr: 4-Terphenyl-d14	0.808		1.010		80.0	34	167		0		
Surr: Nitrobenzene-d5	0.747		1.010		74.0	25	135		0		

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-005
Turnaround Time 10 Days
Shipping Date: 3/29/2012
COC Number: HNWR-005

				Container:	250 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	1 Liter Poly	3 x 40 ml VOA	500 ml Poly	1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	3-40ml vials	3 x 40 ml VOA		
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	H2SO4, 4°C	4°C	NAOH	4°C	4°C	4°C	4°C	4°C	HCL,4°C	HCL,4°C		
				Filtered:	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
				Holding Time:	28	180	180	180	2	2	2	28	28	1	14	7	7	7	7	7	14	14		
		DATE	TIME	Matrix	Cr6 (E218.6) FF	Metals (6010BFF) FF Na,K,Ca,Mg,Fe	Metals (6020AFF) FF As,Mn	Metals (6010B/6020A/7470Adis) FF T22:SbAsBaBeCdCrCoCuPbHgMoNiSeAgTlVZnAl	Anions (E300.0) Chloride,Sulfate,Nitrate as N	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)	TOC (SM5310C)	Perchlorate (E314.0)	Cyanide (335.2)	TPH-Extractable (SW8015B-E)	PAHs (SW8270-Sim)	PCBs (SW8082)	Pesticides (SW8081A)	Herbicide (SW8151A)	VOCs (SW8260B)	TPH-Purgable (SW8015B)	Number of Containers	COMMENTS
-1	HNWR-01-005	4-4-12	1149	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
-2	TBØ1-05	"	1200	"								trip blank											TOTAL NUMBER OF CONTAINERS	
					2	1	1	1		2		2	3	1	2			10			3	3		

35 Total

(1) TB

+3

N007610

	Signatures	Date/Time
Approved by	[signature]	4-4-12 1555
Sampled by	[signature]	4-4-12
Relinquished by	[signature]	4-4-12
Received by	MBCARTON [signature]	4/4/12 @ 1555
Relinquished by		
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 4.2, 1.6°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

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CH2MHILL

CHAIN OF CUSTODY RECORD

Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 405681.MP.06.TS
Task Order
Project 2012-HNWR-005
Turnaround Time 10 Days
Shipping Date: 3/29/2012
COC Number: HNWR-005

	Container:	250 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	1 Liter Poly	3 x 40 ml VOA	500 ml Poly	1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	3-40ml vials	3 x 40 ml VOA		
	Preservatives:	(NH4)2SO 4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	H2SO4, 4°C	4°C	NAOH	4°C	4°C	4°C	4°C	4°C	HCL,4°C	HCL,4°C		
	Filtered:	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	Holding Time:	28	180	180	180	2	2	2	28	28	1	14	7	7	7	7	7	14	14		
DATE	TIME	Matrix	Cr6 (E218.6) FF	Metals (6010BFF) FF Na,K,Ca,Mg,Fe	Metals (6020AFF) FF As,Mn	Metals (6010B/6020A/7470Adis) FF T22:SbAsBaBeCdCrCoCuPbHgMoNi SeAgTlVZnAl	Anions (E300.0) Chloride,Sulfate,Nitrate as N	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)	TOC (SM5310C)	Perchlorate (E314.0)	Cyanide (335.2)	TPH-Extractable (SW8015B-E)	PAHs (SW8270-Sim)	PCBs (SW8082)	Pesticides (SW8081A)	Herbicide (SW8151A)	VOCs (SW8260B)	TPH-Purgable (SW8015B)	Number of Containers	COMMENTS
HNWR-01-005	4-4-12	1149	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
TB01-05	11	1200	11						trip blank											TOTAL NUMBER OF CONTAINERS	

2 1 1 1 2 2 3 1 2 10 3 3

(1) TB

+3

35 Total

	Signatures	Date/Time
Approved by		4-4-12 1535
Sampled by		4-4-12
Relinquished by		4-4-12
Received by		4/4/12 1535
Relinquished by		
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: (yes) no 4.2, 1.6°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

3

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Advanced Technology Laboratories - Signal Hill
3283 Walnut Ave.
Signal Hill, California

TEL: (562) 989-4045
FAX: (562) 989-4045
Acct #:

Field Sampler: Signed

05-Apr-12

				Requested Tests	
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-CN E**	
N007618-001G / HNWR-01-005	Ground Water	4/4/2012 11:49:00 AM	32OZA	1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N007618 Please fax results by: Normal TAT

Please analyze for Cyanide. Please generate a level IV data package. CH2MHill sample.

	Date/Time		Date/Time
Relinquished by:	4/5/12	**Received by:**	
Relinquished by:		**Received by:**	

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Test America
2800 George Washington Way ~~Richland, WA~~ 5755 8th St. East Tacoma, WA 98424
TEL: (509) 375-3131
FAX: (509) 375-5590
Acct #:

Field Sampler: Signed

05-Apr-12

m 4/12/12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
N007618-001K / HNWR-01-005	Ground Water	4/4/2012 11:49:00 AM	32OZA	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: N007618 Please fax results by: Normal TAT
Please analyze for Herbicides by EPA 8151.

	Date/Time		Date/Time
Relinquished by:	4/5/12	**Received by:**	
Relinquished by:		**Received by:**	

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/4/2012	Workorder:	N007618
Rep sample Temp (Deg C):	4.2,1.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By NS 4/5/12

Reviewed By: 4/4/12

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N007618-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.0176-59.9747)*1000000}{100}$$

$$= 429 \text{ mg/L}$$

Reporting result in two significant figures,

$$\text{TDS} = 430 \text{ mg/L}$$

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007618-001A, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.052665 * 2$$

$$= 14.10533 \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 14 \mu g/L$$

OM 4/11/12

Sample ID: **N007618-001C @ Ph 7.88**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (10.675mL)

= **0.02342 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.55) (0.02342N) (1) * 1000

= **106.56 mg/L**

Reporting results in two significant figures,

= **110 mg/L** as CaCO3

4/6/17

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02342N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.35mL) (0.02342) (1) * 1000

= **106.56 mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **106.56 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **110 mg/L**

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007618-001C**, concentration in mg/L are calculated as follows:

Chloride, mg/L	=	2.656 * 50
	=	132.8 mg/L

Reporting **N007618-001C**, results in two significant figures,

Chloride, mg/L	**=**	**130 mg/L**

JMS 4/12/12

Sample Calculation

METHOD: EPA 314.0
TEST NAME: PERCHLORATE BY IC
MATRIX: Water

FORMULA:

Calculate the Perchlorate concentration, in µg/L, in the original sample as follows:

ClO_4^-, µg/L = A * DF

where:

A = ug/L, IC ClO_4^-, calculated concentration
DF = dilution factor

For N007618-001F, concentration in µg/L is calculated as follows:

ClO_4^-, µg/L = 0.0 * 1

= 0 µg/L

Reporting results in two significant figures,

ClO_4^-, µg/L = **ND**

JT / IC-05 4/12/2012 11:50:47 AM

SAMPLE CALCULATION

METHOD: SM4500-NH3C
TEST NAME: Ammonia-Nitrogen
MATRIX: Water

FORMULA:

Calculate the Ammonia as N concentration , in mg/L , in the original sample as follows:

$$\text{Ammonia as N, mg/L} = A * DF$$

Where:

A= mg/L, UV-VIS NH3 as N calculated concentration
DF= dilution factor

For **N007618-001D,** concentration in mg/L is calculated as follows:

$$\text{Ammonia as N, mg/L} = 0.148 * 1$$
$$= 0.148 \text{ mg/L}$$

Reporting result in two significant figures,

Ammonia as N = 0.15 mg/L

NS for
4/11/12

Sample Calculation

METHOD: SM5310C
TEST NAME: TOTAL ORGANIC CARBON
MATRIX: WATER

FORMULA:

Calculate the TOC concentration, in mg/L, in the original sample as follows:

TOC, mg/L = (A * DF) - B

where:

A = mg/L, instrument calculated concentration
DF = dilution factor
B = mg/L, TOC concentration in the calibration blank

For **N007618-001E**, concentration in mg/L are calculated as follows:

TOC, mg/L = (0.288* 1) – 0.212

= 0.076mg/L

Reporting results in two significant figures,

TOC, mg/L = 0.076mg/L

Since the reporting limit is 1.0 mg/L, therefore

TOC, mg/L = ND

ms fn
4/12/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007618-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.109512991* 1* (25/25) * 1000

= 109.51 ug/L

Reporting results in two significant figures,

Barium, ug/L = 110

NS for
4/12/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007618
Test Method: EPA 6010
Analysis Date: 04/10/12

Matrix: Water
Batch No.: 39465

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL.
Dilution test of Mg failed, however the PS @2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007618-001B DT 5X	Aluminum	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Antimony	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Barium	ug/L	112.04203	PASS	109.512991	-2.31%	10
N007618-001B DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Copper	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Iron	ug/L	0	NA	25.104049	100.00%	10
N007618-001B DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Magnesium	ug/L	3501.06294	FAIL	3116.990192	-12.32%	10
N007618-001B DT 5X	Molybdenum	ug/L	10.099435	NA	8.960803	-12.71%	10
N007618-001B DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Silver	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007618-001B DT 5X	Calcium	ug/L	19592.6664	PASS	19792.77528	1.01%	10
N007618-001B DT 5X	Zinc	ug/L	0	NA	1.747544	100.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007618
Test Method: EPA 6010
Analysis Date: 04/11/12

Matrix: Water
Batch No.: 39465

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007618-001B DT 5X	Vanadium	ug/L	20.8712	PASS	19.8538	-5.12%	10

JT/ ICP-02 4/11/2012 11:54:52 PM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007618
Test Method: EPA 6010
Analysis Date: 04/11/12

Matrix: Water
Batch No.: 39465

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007618-001B-DT 50X	Potassium	ug/L	3120.64591	NA	3654.283716	14.60%	10
N007618-001B-DT 50X	Sodium	ug/L	126671.192	PASS	131316.5544	3.54%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007618-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83883**
Client ID: **ZZZZZZ** Batch ID: **39465** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/10/2012** SeqNo: **1382194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5066.274	100	5000	0	101	75	125				
Antimony	259.089	20	250.0	0	104	75	125				
Barium	358.227	6.0	250.0	109.5	99.5	75	125				
Beryllium	252.025	2.0	250.0	0	101	75	125				
Cadmium	252.534	6.0	250.0	0	101	75	125				
Calcium	24559.073	1000	5000	19790	95.3	75	125				
Cobalt	261.640	6.0	250.0	0	105	75	125				
Copper	252.157	10	250.0	0	101	75	125				
Iron	5001.795	40	5000	25.10	99.5	75	125				
Lead	249.266	20	250.0	0	99.7	75	125				
Magnesium	8123.265	200	5000	3117	100	75	125				
Molybdenum	254.160	10	250.0	8.961	98.1	75	125				
Nickel	259.903	10	250.0	0	104	75	125				
Silver	249.211	6.0	250.0	0	99.7	75	125				
Zinc	265.437	20	250.0	1.748	105	75	125				

Sample ID: **N007618-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83899**
Client ID: **ZZZZZZ** Batch ID: **39465** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/11/2012** SeqNo: **1382737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	280.027	6.0	250.0	19.85	104	75	125				

Sample ID: **N007618-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83900**
Client ID: **ZZZZZZ** Batch ID: **39465** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/11/2012** SeqNo: **1382753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	17203.830	500	12500	3654	108	75	125				
Sodium	384799.302	5000	250000	131300	101	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007618-001B**, the concentration in ug/L is calculated as follows:

Chromium, ug/L = 17.1797* 1 * (25/25)

= 17.1797 ug/L

Reporting results in two significant figures,

Chromium, ug/L = 17

4/12/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007618
Test Method: EPA 6020
Analysis Date: 04/10/12

Matrix: Water
Batch No.: 39467

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable, the calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007621-001B-DT 5X	Arsenic	µg/L	0	NA	0.084024148	100.00%	10
N007621-001B-DT 5X	Chromium	µg/L	0	NA	0.341501996	100.00%	10
N007621-001B-DT 5X	Manganese	µg/L	0	NA	0	0.00%	10
N007621-001B-DT 5X	Selenium	µg/L	0	NA	0	0.00%	10
N007621-001B-DT 5X	Thallium	µg/L	0	NA	0	0.00%	10

not applicable
< 2x RL

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007621-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **83901**
Client ID: **ZZZZZZ**	Batch ID: **39467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1383023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.148	0.20	20.00	0.08402	100	75	125				
Manganese	210.664	1.0	200.0	0	105	75	125				
Selenium	20.612	1.0	20.00	0	103	75	125				
Thallium	20.974	1.0	20.00	0	105	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007618
Project: PG&E Topock, 405681.MP.06.TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007621-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **83901**
Client ID: **ZZZZZZ**	Batch ID: **39467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/10/2012**	SeqNo: **1382806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.235	2.0	20.00	0.3415	104	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007618-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	=	**0.0**

Mercury, ug/L	=	**ND**

SAMPLE CALCULATION

METHOD: EPA 8015B
TEST NAME: Diesel Range Organics by GC/FID
MATRIX: Water

FORMULA:

Calculate the TPH-Diesel concentration, in ug/L, in the original sample as follows:

$$\text{TPH-Diesel, ug/mL} = \frac{A * 1mL * DF}{B}$$

Where:

A = ug/mL, GC TPH-Diesel calculated concentration
B = volume of sample in L
DF = Dilution factor

For **N007618-001H,** concentration in ug/L is calculated as follows:

$$\text{TPH-Diesel, ug/L} = \frac{46.967\ ug/mL * 1mL * 1}{0.990}$$

$$= 47.44141\ ug/L$$

Reporting result in two significant figures,

TPH-Diesel, ug/L = 47 ug/L
TPH-Diesel, ug/L = ND

Note: Calculated result is below PQL, thus, sample was reported as ND (Not Detected)

SAMPLE CALCULATION

METHOD: EPA 8015B
TEST NAME: Gasoline Range Organics by GC/FID
MATRIX: Water

FORMULA:

Calculate the TPH-Gasoline concentration, in ug/L , in the original sample as follows:

TPH-Gasoline, ug/L = A*DF*1000

Where:

A = mg/L, GC TPH-Gasoline calculated concentration

For **N007618-001M** concentration in ug/L are calculated as follows:

TPH-Gasoline, ug/L = 0.024 *1000

= 24 ug/L

Reporting result in two significant figures,

TPH-Gasoline = 24 ug/L

Since the reporting limit is 100 ug/L,

TPH-Gasoline= ND

AM 4/6/12

SAMPLE CALCULATION

METHOD: EPA 8081
TEST NAME: Organochlorine Pesticides by GC/ECD
MATRIX: Water

FORMULA:

Calculate the OCP concentration, in ug/L, in the original sample as follows:

$$\text{OCP Analyte, ug/L} = \frac{A*0.005L*DF}{B}$$

Where:

A = ug/L, GC OCP Analyte calculated concentration
B = Volume of sample in L
DF = Dilution factor

For **N007618-001J,** concentration in ug/L is calculated as follows:

$$\text{Tetrachloro-m-xylene, ug/L} = \frac{82.778 * 0.005 * 1}{0.970}$$

$$= 0.42669 \text{ ug/L}$$

Reporting result in two significant figures,

Tetrachloro-m-xylene, ug/L = 0.43 ug/L

SAMPLE CALCULATION

METHOD: EPA 8082
TEST NAME: Polychlorinated Biphenyls by GC/ECD
MATRIX: Water

FORMULA:

Calculate the PCB concentration, in ug/L, in the original sample as follows:

$$\text{PCB Aroclor, ug/L} = \frac{A*0.005L*DF}{B}$$

Where:

A = ug/L, GC PCB Aroclor calculated concentration
B = Volume of sample in L
DF = Dilution factor

For **N007618-001J,** concentration in ug/L is calculated as follows:

$$\text{Tetrachloro-m-xylene, ug/L} = \frac{82.277* 0.005 *1}{0.970L}$$

$$= 0.42411 \text{ ug/L}$$

Reporting result in two significant figures,

Tetrachloro-m-xylene, ug/L = 0.42 ug/L

SAMPLE CALCULATION

METHOD: EPA 8260B
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_X, ug/L = \frac{A_X * C_{IS}}{Ave\ RF * A_{IS}}$$

where:

A_x = Area of the TOTAL ion for the compound being measured
C_{IS} = Concentration of the specific internal standard in ug/L
A_{IS} = Area of the characteristic ion of the specific internal standard
C_x = Concentration of the compound being measured in ug/L

N007618-001L

For 1,2-Dichloroethane-d4 the corresponding Internal Standard is Pentafluorobenzene

Ave RF	0.361
Area of 1,2-Dichloroethane-d4	149415
Area of Internal Standard	462057
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of 1,2-Dichloroethane-d4 (ug/L)} = \frac{149415 * 25.00 ug/L}{0.361 * 462057}$$

Conc of 1,2-Dichloroethane-d4 (ug/L)= 22.39398855

Reporting result in three significant figures,

Concentration of 1,2-Dichloroethane-d4 = 22.4 ug/L

SAMPLE CALCULATION

METHOD: EPA 8270C
TEST NAME: SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_X, ug/L = \frac{A_X * C_{IS} * V * 1000 * DF}{Ave\ RF * A_{IS} * Vx}$$

where:

A_x = Area of the TOTAL ion for the compound being measured
C_{IS} = Concentration of the specific internal standard in mg/L
A_{IS} = Area of the characteristic ion of the specific internal standard
C_x = Concentration of the compound being measured in ug/kg
V = Final Volume of sample in Liter
V_X = Volume of sample used in L
DF = Dilution Factor

N007489-001I

For 1,2-Dichlorobenzene-d4 the corresponding Internal Standard is 1,4-Dichlorobenzene-d4

Ave RF	0.794
Area of 1,2-Dichlorobenzene-d4	26073
Area of Internal Standard	101617
Conc of Internal Standard (mg/L)	2.00
Final Volume in L	0.001
Volume of sample in L	1
Dilution Factor	1

Conc of 1,2-Dichlorobenzene-d4(ug/L)= $\frac{26073 * 2.00mg/L * 0.001L * 1000 * 1}{0.794 * 101617 * 1L}$

Conc of 1,2-Dichlorobenzene-d4 (ug/L)= 0.6463

Reporting result in two significant figures,

Concentration of 1,2-Dichlorobenzene-d4 = 0.65 ug/L

ADVANCED TECHNOLOGY LABORATORIES

April 26, 2012

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Marlon Cartin
Advanced Technology Laboratory-Las Vegas
3151 W Post Rd.
Las Vegas, NV 89118
Tel: (702) 307-2659
Fax:(702) 307-2691

Re: ATL Work Order Number : 1201268

Client Reference : [none]

Enclosed are the results for sample(s) received on April 06, 2012 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez

Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratory-Las Vegas	Project Number : -
3151 W Post Rd.	Report To : Marlon Cartin
Las Vegas , NV 89118	Reported : 04/17/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N007618-001G / HNWR-01-005	1201268-01	Groundwater	4/04/12 11:49	4/06/12 8:17

CASE NARRATIVE

Sample Receiving/General Comments:

1. All sample containers were received intact with proper chain of custody documentation.
2. Information on sample receipt conditions including discrepancies can be found in the attached Sample Receipt Acknowledgment Form.
3. Sample preservation was verified upon receipt of samples, if applicable.
4. All samples were analyzed with method holding times.

Advanced Technology Laboratory-Las Vegas	Project Number : -
3151 W Post Rd.	Report To : Marlon Cartin
Las Vegas , NV 89118	Reported : 04/17/2012

Client Sample ID N007618-001G / HNWR-01-005

Lab ID: 1201268-01

Cyanide, Total by SM4500-CN E **Analyst: AG**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Cyanide, Total	ND	0.01	0.006	1	B2D0361	04/10/2012	04/10/12 14:41	

QUALITY CONTROL SECTION

Cyanide, Total by SM4500-CN E - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2D0361 - Prep_WC_3_W									
Blank (B2D0361-BLK1)				Prepared: 4/10/2012 Analyzed: 4/10/2012					
Cyanide, Total	ND	0.01			NR				
LCS (B2D0361-BS1)				Prepared: 4/10/2012 Analyzed: 4/10/2012					
Cyanide, Total	0.4	0.01	0.400		98	80 - 120			
Matrix Spike (B2D0361-MS1)		**Source: 1201268-01**		Prepared: 4/10/2012 Analyzed: 4/10/2012					
Cyanide, Total	0.4	0.01	0.400	ND	92	80 - 120			
Matrix Spike Dup (B2D0361-MSD1)		**Source: 1201268-01**		Prepared: 4/10/2012 Analyzed: 4/10/2012					
Cyanide, Total	0.4	0.01	0.400	ND	98	80 - 120	7	20	

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Advanced Technology Laboratories - Signal Hill
3283 Walnut Ave.
Signal Hill, California

TEL: (562) 989-4045
FAX: (562) 989-4045
Acct #:

Field Sampler: Signed

05-Apr-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests SM4500-CN E
N007618-001G / HNWR-01-005 /20/268-01	Ground Water	4/4/2012 11:49:00 AM	32OZA	1

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N007618 Please fax results by: Normal TAT

Please analyze for Cyanide. Please generate a level IV data package. CH2MHill sample.

	Date/Time		Date/Time
Relinquished by:	4/5/12 3pm	**Received by:**	4/6/12 8/7
Relinquished by:		**Received by:**	

G40
5.4

7

ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1201268

Client:	**Advanced Technology Laboratory-Las Vegas**	**Project Manager:**	**Rachelle Arada**
Project:	**CH2M Hill_Level IV**	**Project Number:**	**[none]**

Report To:
Advanced Technology Laboratory-Las Vegas
Marlon Cartin
3151 W Post Rd.
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:
Advanced Technology Laboratory-Las Vegas
Marlon Cartin
3151 W Post Rd.
Las Vegas, NV 89118
Phone :(702) 307-2659
Fax: (702) 307-2691

Date Due:	04/17/12 17:30 (7 day TAT)	Date Received:	04/06/12 08:17
Received By:	Margo Penaflor	Date Logged In:	04/07/12 12:32
Logged In By:	Ron Diwa	Shipped by:	GSO

Please review the checklist below. Any NO response signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed a as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (526) 989-4045.

Sample(s) received on ice?	Yes	☑	No	☐
Sample(s) received on blue ice?	Yes	☐	No	☑
Cooler temperature within acceptance limit?	Yes	☑	No	☐
Shipping container received in good condition?	Yes	☑	No	☐
Custody seals present on shipping container?	Yes	☐	No	☑
Custody seals intact on shipping container?	Yes	☐	No	☑
Custody seals present on sample bottles?	Yes	☐	No	☑
Custody seals intact on sample bottles?	Yes	☐	No	☑
Chain of Custody (COC) present?	Yes	☑	No	☐
Sampler name present in COC?	Yes	☑	No	☐
COC signed when relinquished and received?	Yes	☑	No	☐
COC agrees with sample labels?	Yes	☑	No	☐
Samples in proper container/bottle?	Yes	☑	No	☐
Sample containers intact?	Yes	☑	No	☐
Sufficient sample amount for indicated tests?	Yes	☑	No	☐
All samples received within holding time?	Yes	☑	No	☐
VOA vials for VOC meet headspace criteria?	Yes	☐	No	☑
Water samples meet preservation criteria?	Yes	☑	No	☐

Default Cooler	Temp: 5.4 °C

Sample Receipt Comments:

SAMPLE CALCULATION

METHOD: SM 4500-CN E
TEST NAME: CYANIDE, TOTAL
MATRIX: WATER

FORMULA:

Calculate the cyanide concentration, in mg/L, in the original sample as follows:

$$C\ (mg/L) = C_X \times DF \times (V_D / V_S)$$

Where: C = sample concentration
C_X = concentration in mg/L from the spectra tape
V_D = volume of distillate, mL
W_S =volume of sample distilled, mL
DF = dilution factor

For **LCS (B2D0361-BS1),** concentration in mg/L is calculated as follows:

1. Cyanide (mg/L) = 0.394 * 1 * (50/50)

   Cyanide = 0.394

   Reporting result in one decimal digit,

   Cyanide = 0.4 mg/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 580-32236-1

Job Description: Herbicides

For:
Advanced Technology Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118

Attention: Marlon Cartin

Pamela R. Johnson

Approved for release.
Pam R Johnson
Project Manager I
4/20/2012 10:03 AM

Pam R Johnson
Project Manager I
pamr.johnson@testamericainc.com
04/20/2012

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This report shall not be reproduced except in full, without prior express written approval by the laboratory. The results relate only to the item(s) tested and the sample(s) as received by the laboratory.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

CASE NARRATIVE

Client: Advanced Technology Laboratories
Project: Herbicides
Report Number: 580-32236-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 04/07/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.2 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

CHLORINATED HERBICIDES
Sample HNWR-01-005 (580-32236-1) was analyzed for chlorinated herbicides in accordance with EPA SW-846 8151A. The samples were prepared on 04/10/2012 and analyzed on 04/16/2012.

No difficulties were encountered during the chlorinated herbicides analysis.

All quality control parameters were within the acceptance limits.

Client: Advanced Technology Laboratories | Job Number: 580-32236-1

Client Sample ID: **HNWR-01-005**

Lab Sample ID: 580-32236-1 | Date Sampled: 04/04/2012 1149
Client Matrix: Water | Date Received: 04/07/2012 0840

8151A Herbicides (GC/MS)

Analysis Method:	8151A	Analysis Batch:	580-109406	Instrument ID:	TAC055
Prep Method:	8151A	Prep Batch:	580-108948	Lab File ID:	580-32236-A-1-A4-16
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/16/2012 2114			Final Weight/Volume:	10 mL
Prep Date:	04/10/2012 1339			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Dalapon	ND		0.42
4-Nitrophenol	ND		0.26
Dicamba	ND		0.26
Mecoprop	ND		0.26
MCPA	ND		0.26
Dichlorprop	ND		0.26
2,4-D	ND		0.26
Pentachlorophenol	ND		0.26
Silvex (2,4,5-TP)	ND		0.26
2,4,5-T	ND		0.26
Dinoseb	ND		0.26
2,4-DB	ND		0.26

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4-Dichlorophenylacetic acid	88		40 - 135

Client: Advanced Technology Laboratories

Job Number: 580-32236-1

Surrogate Recovery Report

8151A Herbicides (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCPA %Rec
580-32236-1	HNWR-01-005	88
MB 580-108948/1-A		115
LCS 580-108948/2-A		105
LCSD 580-108948/3-A		104

Surrogate	Acceptance Limits
DCPA = 2,4-Dichlorophenylacetic acid	40-135

Client: Advanced Technology Laboratories

Job Number: 580-32236-1

Method Blank - Batch: 580-108948

Method: 8151A
Preparation: 8151A

Lab Sample ID:	MB 580-108948/1-A	Analysis Batch:	580-109406	Instrument ID:	TAC055
Client Matrix:	Water	Prep Batch:	580-108948	Lab File ID:	MB
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	04/16/2012 2007	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	04/10/2012 1339			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Dalapon	ND		0.40
4-Nitrophenol	ND		0.25
Dicamba	ND		0.25
Mecoprop	ND		0.25
MCPA	ND		0.25
Dichlorprop	ND		0.25
2,4-D	ND		0.25
Pentachlorophenol	ND		0.25
Silvex (2,4,5-TP)	ND		0.25
2,4,5-T	ND		0.25
Dinoseb	ND		0.25
2,4-DB	ND		0.25

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	115	40 - 135

Client: Advanced Technology Laboratories

Job Number: 580-32236-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 580-108948

Method: 8151A
Preparation: 8151A

LCS Lab Sample ID:	LCS 580-108948/2-A	Analysis Batch:	580-109406	Instrument ID:	TAC055
Client Matrix:	Water	Prep Batch:	580-108948	Lab File ID:	LCS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	04/16/2012 2029	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	04/10/2012 1339			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 580-108948/3-A	Analysis Batch:	580-109406	Instrument ID:	TAC055
Client Matrix:	Water	Prep Batch:	580-108948	Lab File ID:	LCSD
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	04/16/2012 2051	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	04/10/2012 1339			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Dalapon	98	89	50 - 140	9.52	30		
4-Nitrophenol	89	85	60 - 130	4.04	30		
Dicamba	100	94	70 - 130	5.35	30		
Mecoprop	99	99	60 - 135	0.000	30		
MCPA	91	93	65 - 140	2.28	30		
Dichlorprop	99	94	50 - 145	5.58	30		
2,4-D	98	96	70 - 135	2.19	30		
Pentachlorophenol	85	81	45 - 130	4.29	30		
Silvex (2,4,5-TP)	84	81	55 - 130	3.22	30		
2,4,5-T	95	90	65 - 135	5.36	30		
Dinoseb	98	95	45 - 166	3.53	30		
2,4-DB	93	96	65 - 140	2.77	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	105	104	40 - 135

Client: Advanced Technology Laboratories

Job Number: 580-32236-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 580-108948

Method: 8151A
Preparation: 8151A

LCS Lab Sample ID:	LCS 580-108948/2-A	Units: ug/L		LCSD Lab Sample ID:	LCSD 580-108948/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	04/16/2012 2029			Analysis Date:	04/16/2012 2051
Prep Date:	04/10/2012 1339			Prep Date:	04/10/2012 1339
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Dalapon	10.0	10.0	9.77	8.88
4-Nitrophenol	10.0	10.0	8.87	8.52
Dicamba	10.0	10.0	9.95	9.43
Mecoprop	10.0	10.0	9.87	9.87
MCPA	10.0	10.0	9.09	9.30
Dichlorprop	10.0	10.0	9.95	9.41
2,4-D	10.0	10.0	9.82	9.61
Pentachlorophenol	10.0	10.0	8.50	8.14
Silvex (2,4,5-TP)	10.0	10.0	8.37	8.10
2,4,5-T	10.0	10.0	9.51	9.02
Dinoseb	10.0	10.0	9.81	9.47
2,4-DB	10.0	10.0	9.35	9.61

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Test America
2800 George Washington Way
Richland, WA ~~99334~~ 99354

TEL: (509) 375-3131
FAX: (509) 375-5590
Acct #:

Field Sampler: Signed

05-Apr-12

	Sample ID	Matrix	Date Collected	Bottle Type	EPA 8151	Requested Tests
N007618-001K	/ HNWR-01-005	Ground Water	4/4/2012 11:49:00 AM	32OZA	1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N007618 Please fax results by: Normal TAT

Please analyze for Herbicides by EPA 8151.

R=4.2/4.2 w/o
Med Blue/wh
gel/bubb FedPO

		Date/Time			Date/Time
Relinquished by:	[signature]	4/5/12 3pm	**Received by:**	[signature] TAIR Cameron Krompa	4.6.12 1100
Relinquished by:	[signature] TAIR Cameron Krompa	4.6.12 1120	**Received by:**	[signature] TA-Sea	4/7/12 0840

CK 4.6.12

Login Sample Receipt Checklist

Client: Advanced Technology Laboratories

Job Number: 580-32236-1

Login Number: 32236

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

April 24, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007656

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 10, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007656

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2694*

Advanced Technology Laboratories, Inc.

Date: *24-Apr-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007656
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007656-001A	MW-125-186	Water	4/9/2012 1:21:00 PM	4/10/2012	4/24/2012
N007656-001B	MW-125-186	Water	4/9/2012 1:21:00 PM	4/10/2012	4/24/2012
N007656-001C	MW-125-186	Water	4/9/2012 1:21:00 PM	4/10/2012	4/24/2012
N007656-002A	MW-27-085-186	Water	4/9/2012 8:55:00 AM	4/10/2012	4/24/2012
N007656-002B	MW-27-085-186	Water	4/9/2012 8:55:00 AM	4/10/2012	4/24/2012
N007656-002C	MW-27-085-186	Water	4/9/2012 8:55:00 AM	4/10/2012	4/24/2012
N007656-003A	MW-32-035-186	Water	4/9/2012 2:13:00 PM	4/10/2012	4/24/2012
N007656-003B	MW-32-035-186	Water	4/9/2012 2:13:00 PM	4/10/2012	4/24/2012
N007656-004A	MW-34-080-186	Water	4/9/2012 10:53:00 AM	4/10/2012	4/24/2012
N007656-004B	MW-34-080-186	Water	4/9/2012 10:53:00 AM	4/10/2012	4/24/2012
N007656-004C	MW-34-080-186	Water	4/9/2012 10:53:00 AM	4/10/2012	4/24/2012
N007656-005A	MW-34-100-186	Water	4/9/2012 1:22:00 PM	4/10/2012	4/24/2012
N007656-005B	MW-34-100-186	Water	4/9/2012 1:22:00 PM	4/10/2012	4/24/2012
N007656-005C	MW-34-100-186	Water	4/9/2012 1:22:00 PM	4/10/2012	4/24/2012
N007656-006A	MW-42-055-186	Water	4/9/2012 3:28:00 PM	4/10/2012	4/24/2012
N007656-006B	MW-42-055-186	Water	4/9/2012 3:28:00 PM	4/10/2012	4/24/2012
N007656-007A	MW-42-065-186	Water	4/9/2012 4:00:00 PM	4/10/2012	4/24/2012
N007656-007B	MW-42-065-186	Water	4/9/2012 4:00:00 PM	4/10/2012	4/24/2012
N007656-008A	MW-123-186	Water	4/10/2012 8:20:00 AM	4/10/2012	4/24/2012
N007656-008B	MW-123-186	Water	4/10/2012 8:20:00 AM	4/10/2012	4/24/2012
N007656-009A	MW-28-025-186	Water	4/10/2012 8:56:00 AM	4/10/2012	4/24/2012
N007656-009B	MW-28-025-186	Water	4/10/2012 8:56:00 AM	4/10/2012	4/24/2012
N007656-010A	MW-28-090-186	Water	4/10/2012 8:19:00 AM	4/10/2012	4/24/2012
N007656-010B	MW-28-090-186	Water	4/10/2012 8:19:00 AM	4/10/2012	4/24/2012
N007656-011A	MW-29-186	Water	4/10/2012 10:22:00 AM	4/10/2012	4/24/2012
N007656-011B	MW-29-186	Water	4/10/2012 10:22:00 AM	4/10/2012	4/24/2012
N007656-012A	MW-30-030-186	Water	4/10/2012 1:40:00 PM	4/10/2012	4/24/2012
N007656-012B	MW-30-030-186	Water	4/10/2012 1:40:00 PM	4/10/2012	4/24/2012
N007656-013A	MW-36-090-186	Water	4/10/2012 11:51:00 AM	4/10/2012	4/24/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007656
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007656-013B	MW-36-090-186	Water	4/10/2012 11:51:00 AM	4/10/2012	4/24/2012
N007656-014A	MW-36-100-186	Water	4/10/2012 12:56:00 PM	4/10/2012	4/24/2012
N007656-014B	MW-36-100-186	Water	4/10/2012 12:56:00 PM	4/10/2012	4/24/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 1:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 8:55:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 2:13:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 10:53:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	8300	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 1:22:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 3:28:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	5000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 4:00:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	9000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:56:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:19:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410D**	QC Batch: **R83892**			PrepDate:			Analyst: **KAB**
Specific Conductance	7500	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 10:22:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410E**	QC Batch: **R83893**			PrepDate:			Analyst: **KAB**
Specific Conductance	3000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 1:40:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410E**	QC Batch: **R83893**			PrepDate:			Analyst: **KAB**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 11:51:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410E**	QC Batch: **R83893**			PrepDate:			Analyst: **KAB**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 12:56:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120410E**	QC Batch: **R83893**			PrepDate:			Analyst: **KAB**
Specific Conductance	9500	0.10	0.10		umhos/cm	1	4/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83892**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **83892**		
Client ID: **LCSW**	Batch ID: **R83892**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**				SeqNo: **1382571**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1402.000	0.10	1410	0	99.4	85	115				

Sample ID: **N007656-004C-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **83892**		
Client ID: **ZZZZZZ**	Batch ID: **R83892**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**				SeqNo: **1382576**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8250.000	0.10						8260	0.121	10	

Sample ID: **N007656-004C-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **83892**		
Client ID: **ZZZZZZ**	Batch ID: **R83892**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**				SeqNo: **1382577**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	18280.000	0.20	9977	8260	100	75	125				

Sample ID: **N007656-004C-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **83892**		
Client ID: **ZZZZZZ**	Batch ID: **R83892**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**				SeqNo: **1382578**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	18260.000	0.20	9977	8260	100	75	125	18280	0.109	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83893**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83893**			
Client ID: **LCSW**	Batch ID: **R83893**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**			SeqNo: **1382587**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1402.000	0.10	1410	0	99.4	85	115				

Sample ID: **N007656-011B-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83893**			
Client ID: **ZZZZZZ**	Batch ID: **R83893**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**			SeqNo: **1382589**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2950.000	0.10						2950	0	10	

Sample ID: **N007656-011B-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83893**			
Client ID: **ZZZZZZ**	Batch ID: **R83893**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**			SeqNo: **1382591**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12720.000	0.20	9977	2950	97.9	75	125				

Sample ID: **N007656-011B-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83893**			
Client ID: **ZZZZZZ**	Batch ID: **R83893**	TestNo: **EPA 120.1**		Analysis Date: **4/10/2012**			SeqNo: **1382592**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12720.000	0.20	9977	2950	97.9	75	125	12720	0	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.040	5.0		mg/L	10	4/11/2012 01:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	4/11/2012 10:55 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:56:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.012	0.50		mg/L	1	4/11/2012 11:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:19:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.040	5.0		mg/L	10	4/11/2012 01:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	4/11/2012 11:18 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 10:22:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.012	0.50		mg/L	1	4/11/2012 11:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 1:40:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/11/2012 11:43 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 12:56:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120411A**	QC Batch: **R83982**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/11/2012 11:54 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R83982_F**	SampType: **MBLK**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:				RunNo: **83982**		
Client ID: **PBW**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**				SeqNo: **1385552**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R83982_F**	SampType: **LCS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:				RunNo: **83982**		
Client ID: **LCSW**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**				SeqNo: **1385553**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.439	0.50	2.500	0	97.6	90	110				

Sample ID: **N007656-009BMS**	SampType: **MS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:				RunNo: **83982**		
Client ID: **ZZZZZZ**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**				SeqNo: **1385555**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.957	0.50	2.500	0.5940	94.5	80	120				

Sample ID: **N007656-009BMSD**	SampType: **MSD**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:				RunNo: **83982**		
Client ID: **ZZZZZZ**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**				SeqNo: **1385556**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.009	0.50	2.500	0.5940	96.6	80	120	2.957	1.74	20	

Sample ID: **N007656-009BDUP**	SampType: **DUP**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:				RunNo: **83982**		
Client ID: **ZZZZZZ**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**				SeqNo: **1385559**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.621	0.50						0.5940	4.44	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83982_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83982**
Client ID: **PBW**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**	SeqNo: **1385535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R83982_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83982**
Client ID: **LCSW**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**	SeqNo: **1385536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.457	0.50	2.500	0	98.3	90	110				

Sample ID: **N007656-009BMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83982**
Client ID: **ZZZZZZ**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**	SeqNo: **1385543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.399	0.50	2.500	0	96.0	80	120				

Sample ID: **N007656-009BMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83982**
Client ID: **ZZZZZZ**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**	SeqNo: **1385544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.346	0.50	2.500	0	93.8	80	120	2.399	2.23	20	

Sample ID: **N007656-009BDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83982**
Client ID: **ZZZZZZ**	Batch ID: **R83982**	TestNo: **EPA 300.0**		Analysis Date: **4/11/2012**	SeqNo: **1385547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 1:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120417B**	QC Batch: **39505**				PrepDate: **4/11/2012**		Analyst: **CEI**
Arsenic	1.1	0.17	0.50		µg/L	5	4/17/2012 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 8:55:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120417B**	QC Batch: **39505**				PrepDate:	**4/11/2012**	Analyst: **CEI**
Arsenic	1.4	0.17	0.50		µg/L	5	4/17/2012 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 2:13:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120423A**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	30	0.35	1.0		µg/L	10	4/23/2012 05:06 PM
Manganese	1900	1.6	5.0		µg/L	10	4/17/2012 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 10:53:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120417B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	1.4	0.17	0.50		µg/L	5	4/17/2012 02:49 PM
Manganese	39	0.80	2.5		µg/L	5	4/17/2012 02:49 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 1:22:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120418B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	1.6	0.35	1.0		µg/L	10	4/18/2012 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 3:28:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120417B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	12	0.17	0.50		µg/L	5	4/17/2012 03:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-186
Lab Order:	N007656	**Collection Date:**	4/9/2012 4:00:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120418B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	2.8	0.35	1.0		µg/L	10	4/18/2012 01:18 PM
Manganese	1200	1.6	5.0		µg/L	10	4/17/2012 07:26 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120418B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	2.4	0.35	1.0		µg/L	10	4/18/2012 01:22 PM
Manganese	170	1.6	5.0		µg/L	10	4/17/2012 07:30 PM
Molybdenum	19	0.74	5.0		µg/L	10	4/17/2012 07:30 PM
Selenium	ND	0.84	5.0		µg/L	10	4/18/2012 01:22 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:56:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120417B**	QC Batch: **39505**			PrepDate:		**4/11/2012**	Analyst: **CEI**
Arsenic	2.3	0.035	0.10		µg/L	1	4/17/2012 04:09 PM
Manganese	140	0.16	0.50		µg/L	1	4/17/2012 04:09 PM
Molybdenum	4.6	0.37	2.5		µg/L	5	4/17/2012 04:13 PM
Selenium	ND	0.84	5.0		µg/L	10	4/18/2012 01:27 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 8:19:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120417B**	QC Batch: **39505**				PrepDate:	**4/11/2012**	Analyst: **CEI**
Arsenic	2.0	0.035	0.10		µg/L	1	4/17/2012 05:23 PM
Manganese	170	0.16	0.50		µg/L	1	4/17/2012 05:23 PM
Molybdenum	19	0.37	2.5		µg/L	5	4/17/2012 05:18 PM
Selenium	ND	0.42	2.5		µg/L	5	4/18/2012 01:32 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 10:22:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120417B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	7.9	0.035	0.10		µg/L	1	4/17/2012 05:38 PM
Molybdenum	23	0.37	2.5		µg/L	5	4/17/2012 05:33 PM
Selenium	5.1	0.42	2.5		µg/L	5	4/18/2012 01:37 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *24-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-30-030-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 1:40:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120417B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Molybdenum	24	0.37	2.5		µg/L	5	4/17/2012 05:47 PM
Selenium	ND	0.42	2.5		µg/L	5	4/18/2012 01:42 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 11:51:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120417B**	QC Batch: **39505**			PrepDate:	**4/11/2012**		Analyst: **CEI**
Arsenic	19	0.035	0.10		µg/L	1	4/17/2012 06:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-186
Lab Order:	N007656	**Collection Date:**	4/10/2012 12:56:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007656-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120417B**	QC Batch: **39505**				PrepDate:	**4/11/2012**	Analyst: **CEI**
Arsenic	7.4	0.17	0.50		µg/L	5	4/17/2012 06:37 PM
Manganese	71	0.80	2.5		µg/L	5	4/17/2012 06:37 PM
Molybdenum	39	0.74	5.0		µg/L	10	4/17/2012 06:32 PM
Selenium	ND	0.42	2.5		µg/L	5	4/18/2012 01:52 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39505**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **PBW**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39505**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **LCSW**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.514	0.10	10.00	0	95.1	85	115				
Manganese	98.532	0.50	100.0	0	98.5	85	115				
Molybdenum	9.594	0.50	10.00	0	95.9	85	115				
Selenium	9.717	0.50	10.00	0	97.2	85	115				

Sample ID: **N007656-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **ZZZZZZ**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.843	0.50	10.00	1.365	105	75	125				
Manganese	108.106	2.5	100.0	16.53	91.6	75	125				

Sample ID: **N007656-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **ZZZZZZ**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.743	0.50	10.00	1.365	104	75	125	11.84	0.843	20	
Manganese	105.900	2.5	100.0	16.53	89.4	75	125	108.1	2.06	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007656-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **ZZZZZZ**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	38.133	5.0	10.00	28.13	100	75	125				
Selenium	10.798	5.0	10.00	0	108	75	125				

Sample ID: **N007656-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **ZZZZZZ**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	38.313	5.0	10.00	28.13	102	75	125	38.13	0.470	20	
Selenium	11.270	5.0	10.00	0	113	75	125	10.80	4.28	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/10/2012 3:07:05 PM* Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/10/2012
COC Number: 1

				Container:	1Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
				Filtered:	NA	Field	Field	Field	Field	NA	NA	NA			
				Holding Time:	30	180	180	180	180	2	2	2			
	DATE	TIME	Matrix		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-125-186	4/9/2012	13:21	Water		X	X				X			N007656 - 1	3	
MW-27-085-186	4/9/2012	8:55	Water		X	X				X			- 2	3	
MW-32-035-186	4/9/2012	14:13	Water			X	X			X			- 3	2	
MW-34-080-186	4/9/2012	10:53	Water		X	X	X			X			- 4	3	
MW-34-100-186	4/9/2012	13:22	Water		X	X				X			- 5	3	
MW-42-055-186	4/9/2012	15:28	Water			X				X			- 6	2	
MW-42-065-186	4/9/2012	16:00	Water			X	X			X			- 7	2	
MW-123-186	4/10/2012	8:20	Water			X			X	X		X	- 8	2	
MW-28-025-186	4/10/2012	8:56	Water			X			X	X	X		- 9	2	
MW-28-090-186	4/10/2012	8:19	Water			X			X	X		X	- 10	2	
MW-29-186	4/10/2012	10:22	Water			X		X		X	X		- 11	2	
MW-30-030-186	4/10/2012	13:40	Water					X		X	X		- 12	2	
MW-36-090-186	4/10/2012	11:51	Water			X				X			- 13	2	
MW-36-100-186	4/10/2012	12:56	Water			X			X	X	X		- 14	2	

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	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		4-10-12 1620
Received by		4/10/12 @ 1620
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 4.0°C/2.7°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

88

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/10/2012	Workorder:	N007656
Rep sample Temp (Deg C):	4.0, 2.7	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 4/11/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Fluoride concentration, in mg/L, in the original sample as follows:

Fluoride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007656-008B**, concentration in mg/L are calculated as follows:

Fluoride, mg/L = 0.000 * 10

= 0.000 mg/L

Since the reporting limit is 5.0 mg/L, therefore

Fluoride, mg/L = ND

JMS 4/20/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007656-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.22171 * 5 * (25/25)

= 1.10855 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.1

NS for
4/24/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007656
Test Method: EPA 6020
Analysis Date: 04/17/12

Matrix: Water
Batch No.: 39505

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable, the calc. values were < 25X the RL. PS @ 5x & 10X pass the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007656-001B-DT 25X	Arsenic	µg/L	1.409510284	NA	1.108549885	-27.15%	10
N007656-001B-DT 25X	Manganese	µg/L	17.10 ~~15.34618243~~	PASS	15.34 ~~16.5278362~~	7.15%	10
N007656-001B-DT 50X	Selenium	µg/L	0	NA	0		10
N007656-001B-DT 50X	Molybdenum	µg/L	27.87401997	PASS	28.12784593	0.90%	10

NS for 4/24 ✓

CLIENT: CH2M HILL
Work Order: N007656
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007656-001B**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/11/2012**	RunNo: **84019**
Client ID: **ZZZZZZ**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.570	0.50	50.00	1.109	107	75	125				
Manganese	455.097	2.5	500.0	15.35	88.0	75	125				

Sample ID: **N007656-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84019**
Client ID: **ZZZZZZ**	Batch ID: **39505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1386415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	134.701	5.0	100.0	28.13	107	75	125				
Selenium	105.737	5.0	100.0	0	106	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

July 19, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007674

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 12, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007674

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Antimony and Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution on sample N007674-001 (MW-22-186) was necessary since plasma was extinguished at no dilution.

Analytical Comments for EPA 6020:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution on samples N007674-001, N007674-004, N007674-007, N007674-009 and N007674-010 were necessary due to failing internal standards at lower dilution.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *27-Apr-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007674
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007674-001A	MW-22-186	Water	4/11/2012 3:04:00 PM	4/12/2012	4/27/2012
N007674-001B	MW-22-186	Water	4/11/2012 3:04:00 PM	4/12/2012	4/27/2012
N007674-002A	MW-52D-186	Water	4/11/2012 10:35:00 AM	4/12/2012	4/27/2012
N007674-002B	MW-52D-186	Water	4/11/2012 10:35:00 AM	4/12/2012	4/27/2012
N007674-003A	MW-52M-186	Water	4/11/2012 9:34:00 AM	4/12/2012	4/27/2012
N007674-003B	MW-52M-186	Water	4/11/2012 9:34:00 AM	4/12/2012	4/27/2012
N007674-004A	MW-52S-186	Water	4/11/2012 8:18:00 AM	4/12/2012	4/27/2012
N007674-004B	MW-52S-186	Water	4/11/2012 8:18:00 AM	4/12/2012	4/27/2012
N007674-005A	MW-53D-186	Water	4/11/2012 1:39:00 PM	4/12/2012	4/27/2012
N007674-005B	MW-53D-186	Water	4/11/2012 1:39:00 PM	4/12/2012	4/27/2012
N007674-006A	MW-53M-186	Water	4/11/2012 12:33:00 PM	4/12/2012	4/27/2012
N007674-006B	MW-53M-186	Water	4/11/2012 12:33:00 PM	4/12/2012	4/27/2012
N007674-007A	MW-126-186	Water	4/12/2012 2:16:00 PM	4/12/2012	4/27/2012
N007674-007B	MW-126-186	Water	4/12/2012 2:16:00 PM	4/12/2012	4/27/2012
N007674-007C	MW-126-186	Water	4/12/2012 2:16:00 PM	4/12/2012	4/27/2012
N007674-008A	MW-44-070-186	Water	4/12/2012 12:53:00 PM	4/12/2012	4/27/2012
N007674-008B	MW-44-070-186	Water	4/12/2012 12:53:00 PM	4/12/2012	4/27/2012
N007674-008C	MW-44-070-186	Water	4/12/2012 12:53:00 PM	4/12/2012	4/27/2012
N007674-009A	MW-44-115-186	Water	4/12/2012 2:14:00 PM	4/12/2012	4/27/2012
N007674-009B	MW-44-115-186	Water	4/12/2012 2:14:00 PM	4/12/2012	4/27/2012
N007674-009C	MW-44-115-186	Water	4/12/2012 2:14:00 PM	4/12/2012	4/27/2012
N007674-010A	MW-44-125-186	Water	4/12/2012 11:55:00 AM	4/12/2012	4/27/2012
N007674-010B	MW-44-125-186	Water	4/12/2012 11:55:00 AM	4/12/2012	4/27/2012
N007674-010C	MW-44-125-186	Water	4/12/2012 11:55:00 AM	4/12/2012	4/27/2012
N007674-011A	MW-46-205-186	Water	4/12/2012 3:47:00 PM	4/12/2012	4/27/2012

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ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 3:04:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 10:35:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 9:34:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 8:18:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 1:39:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	30000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 12:33:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 2:16:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 12:53:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	2300	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 2:14:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 11:55:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413A**	QC Batch: **R83928**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-205-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 3:47:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120413B**	QC Batch: **R83929**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	4/13/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83928**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83928**			
Client ID: **LCSW**	Batch ID: **R83928**	TestNo: **EPA 120.1**		Analysis Date: **4/13/2012**			SeqNo: **1383872**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1410.000	0.10	1411	0	99.9	85	115				

Sample ID: **N007674-008C-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83928**			
Client ID: **ZZZZZZ**	Batch ID: **R83928**	TestNo: **EPA 120.1**		Analysis Date: **4/13/2012**			SeqNo: **1383881**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2340.000	0.10						2330	0.428	10	

Sample ID: **N007674-008C-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83928**			
Client ID: **ZZZZZZ**	Batch ID: **R83928**	TestNo: **EPA 120.1**		Analysis Date: **4/13/2012**			SeqNo: **1383882**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12800.000	0.20	9977	2330	105	75	125				

Sample ID: **N007674-008C-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **83928**			
Client ID: **ZZZZZZ**	Batch ID: **R83928**	TestNo: **EPA 120.1**		Analysis Date: **4/13/2012**			SeqNo: **1383883**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12800.000	0.20	9977	2330	105	75	125	12800	0	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83929** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83929**
Client ID: **LCSW** Batch ID: **R83929** TestNo: **EPA 120.1** Analysis Date: **4/13/2012** SeqNo: **1383887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1410.000	0.10	1411	0	99.9	85	115				

Sample ID: **N007674-011A-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83929**
Client ID: **ZZZZZZ** Batch ID: **R83929** TestNo: **EPA 120.1** Analysis Date: **4/13/2012** SeqNo: **1383889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	18940.000	0.10						18930	0.0528	10	

Sample ID: **N007674-011A-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83929**
Client ID: **ZZZZZZ** Batch ID: **R83929** TestNo: **EPA 120.1** Analysis Date: **4/13/2012** SeqNo: **1383890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	133400.000	0.20	99900	18930	115	75	125				

Sample ID: **N007674-011A-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83929**
Client ID: **ZZZZZZ** Batch ID: **R83929** TestNo: **EPA 120.1** Analysis Date: **4/13/2012** SeqNo: **1383891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	133400.000	0.20	99900	18930	115	75	125	133400	0	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 2:16:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120413A**	QC Batch: **R83983**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/13/2012 10:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 2:14:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120413A**	QC Batch: **R83983**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/13/2012 10:39 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 11:55:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120413A**	QC Batch: **R83983**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/13/2012 10:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83983_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83983**
Client ID: **PBW**	Batch ID: **R83983**	TestNo: **EPA 300.0**		Analysis Date: **4/13/2012**	SeqNo: **1385566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R83983_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83983**
Client ID: **LCSW**	Batch ID: **R83983**	TestNo: **EPA 300.0**		Analysis Date: **4/13/2012**	SeqNo: **1385567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.380	0.50	2.500	0	95.2	90	110				

Sample ID: **N007674-007CDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83983**
Client ID: **ZZZZZZ**	Batch ID: **R83983**	TestNo: **EPA 300.0**		Analysis Date: **4/13/2012**	SeqNo: **1385571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	0.400	2.5						0.3800	0	20	

Sample ID: **N007674-009CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83983**
Client ID: **ZZZZZZ**	Batch ID: **R83983**	TestNo: **EPA 300.0**		Analysis Date: **4/13/2012**	SeqNo: **1385572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	11.795	2.5	12.50	0.3800	91.3	80	120				

Sample ID: **N007674-009CMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **83983**
Client ID: **ZZZZZZ**	Batch ID: **R83983**	TestNo: **EPA 300.0**		Analysis Date: **4/13/2012**	SeqNo: **1385573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	11.850	2.5	12.50	0.3800	91.8	80	120	11.80	0.465	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 3:04:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120417A**	QC Batch: **39538**			PrepDate:	**4/16/2012**		Analyst: **JT**
Antimony	ND	17	50		ug/L	5	4/17/2012 12:52 PM
Barium	50	1.8	15		ug/L	5	4/17/2012 12:52 PM
Beryllium	ND	0.60	5.0		ug/L	5	4/17/2012 12:52 PM
Cadmium	ND	1.8	15		ug/L	5	4/17/2012 12:52 PM
Cobalt	ND	1.8	15		ug/L	5	4/17/2012 12:52 PM
Copper	ND	11	25		ug/L	5	4/17/2012 12:52 PM
Lead	ND	8.0	50		ug/L	5	4/17/2012 12:52 PM
Molybdenum	32	3.0	25		ug/L	5	4/17/2012 12:52 PM
Nickel	ND	3.5	25		ug/L	5	4/17/2012 12:52 PM
Silver	ND	2.0	15		ug/L	5	4/18/2012 10:43 AM
Vanadium	ND	1.6	15		ug/L	5	4/17/2012 12:52 PM
Zinc	ND	6.8	50		ug/L	5	4/17/2012 12:52 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007674-001A-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **4/16/2012** RunNo: **83961**
Client ID: **ZZZZZZ** Batch ID: **39538** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/17/2012** SeqNo: **1385112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	31.997	50	50.00	0	64.0	75	125				S
Barium	105.006	15	50.00	49.71	111	75	125				
Beryllium	10.017	5.0	10.00	0	100	75	125				
Cadmium	6.044	15	10.00	0	60.4	75	125				S
Cobalt	11.552	15	10.00	0	116	75	125				
Copper	32.938	25	10.00	21.38	116	75	125				
Lead	42.708	50	50.00	0	85.4	75	125				
Molybdenum	82.061	25	50.00	31.58	101	75	125				
Nickel	54.315	25	50.00	0	109	75	125				
Vanadium	10.295	15	10.00	0	103	75	125				
Zinc	54.867	50	50.00	0	110	75	125				

Sample ID: **N007674-001A-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **4/16/2012** RunNo: **83961**
Client ID: **ZZZZZZ** Batch ID: **39538** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **4/17/2012** SeqNo: **1385113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	30.503	50	50.00	0	61.0	75	125	32.00	0	20	S
Barium	105.200	15	50.00	49.71	111	75	125	105.0	0.185	20	
Beryllium	10.103	5.0	10.00	0	101	75	125	10.02	0.848	20	
Cadmium	6.617	15	10.00	0	66.2	75	125	6.044	0	20	S
Cobalt	11.926	15	10.00	0	119	75	125	11.55	0	20	
Copper	33.348	25	10.00	21.38	120	75	125	32.94	1.24	20	
Lead	43.151	50	50.00	0	86.3	75	125	42.71	0	20	
Molybdenum	82.657	25	50.00	31.58	102	75	125	82.06	0.723	20	
Nickel	55.866	25	50.00	0	112	75	125	54.31	2.82	20	
Vanadium	10.785	15	10.00	0	108	75	125	10.30	0	20	
Zinc	56.082	50	50.00	0	112	75	125	54.87	2.19	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-39538**	SampType: **LCS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **4/16/2012**	RunNo: **83961**
Client ID: **LCSW**	Batch ID: **39538**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1385114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.186	10	50.00	0	104	85	115				
Barium	53.523	3.0	50.00	0	107	85	115				
Beryllium	9.587	1.0	10.00	0	95.9	85	115				
Cadmium	10.316	3.0	10.00	0	103	85	115				
Cobalt	10.452	3.0	10.00	0	105	85	115				
Copper	10.853	5.0	10.00	0	109	85	115				
Lead	51.466	10	50.00	0	103	85	115				
Molybdenum	47.816	5.0	50.00	0	95.6	85	115				
Nickel	53.183	5.0	50.00	0	106	85	115				
Vanadium	10.988	3.0	10.00	0	110	85	115				
Zinc	52.067	10	50.00	0	104	85	115				

Sample ID: **MB-39538**	SampType: **MBLK**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **4/16/2012**	RunNo: **83961**
Client ID: **PBW**	Batch ID: **39538**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1385115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Copper	ND	5.0									
Lead	ND	10									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39545**	SampType: **MBLK**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **4/17/2012**	RunNo: **83978**
Client ID: **PBW**	Batch ID: **39545**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/18/2012**	SeqNo: **1385413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	3.0									

Sample ID: **LCS-39545**	SampType: **LCS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **4/17/2012**	RunNo: **83978**
Client ID: **LCSW**	Batch ID: **39545**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/18/2012**	SeqNo: **1385414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	8.990	3.0	10.00	0	89.9	85	115				

Sample ID: **N007674-001A-MS**	SampType: **MS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **4/17/2012**	RunNo: **83978**
Client ID: **ZZZZZZ**	Batch ID: **39545**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/18/2012**	SeqNo: **1385418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	16.577	15	10.00	7.403	91.7	75	125				

Sample ID: **N007674-001A-MSD**	SampType: **MSD**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **4/17/2012**	RunNo: **83978**
Client ID: **ZZZZZZ**	Batch ID: **39545**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/18/2012**	SeqNo: **1385419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	16.623	15	10.00	7.403	92.2	75	125	0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *19-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007674-001

Client Sample ID: MW-22-186
Collection Date: 4/11/2012 3:04:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120420A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Antimony	ND	0.42	2.5		µg/L	5	4/20/2012 01:05 PM
Arsenic	12	0.17	0.50		µg/L	5	5/4/2012 05:49 PM
Beryllium	ND	0.38	2.5		µg/L	5	4/20/2012 01:05 PM
Cadmium	ND	0.42	2.5		µg/L	5	4/20/2012 01:05 PM
Lead	ND	1.5	10		µg/L	10	4/20/2012 10:34 AM
Manganese	2900	4.0	12		µg/L	25	4/20/2012 10:58 AM
Selenium	ND	0.42	2.5		µg/L	5	4/20/2012 01:05 PM
Thallium	ND	0.75	5.0		µg/L	10	4/20/2012 10:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 10:35:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	3.5	0.17	0.50		µg/L	5	5/4/2012 06:14 PM
Manganese	270	0.80	2.5		µg/L	5	4/20/2012 01:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 9:34:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	1.3	0.17	0.50		µg/L	5	5/4/2012 06:19 PM
Manganese	160	0.16	0.50		µg/L	1	4/20/2012 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 8:18:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	ND	0.35	1.0		µg/L	10	5/4/2012 06:23 PM
Manganese	1000	1.6	5.0		µg/L	10	4/20/2012 12:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 1:39:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	3.5	0.17	0.50		µg/L	5	5/4/2012 06:38 PM
Manganese	1800	1.6	5.0		µg/L	10	4/20/2012 12:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 12:33:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	1.1	0.17	0.50		µg/L	5	5/4/2012 06:43 PM
Manganese	420	0.80	2.5		µg/L	5	4/20/2012 02:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 2:16:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**				PrepDate:	**4/16/2012**	Analyst: **CEI**
Arsenic	6.1	0.17	0.50		µg/L	5	5/4/2012 06:48 PM
Manganese	3.0	0.80	2.5		µg/L	5	4/20/2012 01:29 PM
Molybdenum	85	0.37	2.5		µg/L	5	4/20/2012 01:29 PM
Selenium	ND	0.42	2.5		µg/L	5	4/20/2012 01:29 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 12:53:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:		**4/16/2012**	Analyst: **CEI**
Arsenic	3.9	0.035	0.10		µg/L	1	5/4/2012 06:58 PM
Manganese	110	0.80	2.5		µg/L	5	4/20/2012 01:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 2:14:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	5.8	0.17	0.50		µg/L	5	5/4/2012 07:03 PM
Manganese	2.5	0.80	2.5		µg/L	5	4/20/2012 01:42 PM
Molybdenum	84	0.37	2.5		µg/L	5	4/20/2012 01:42 PM
Selenium	ND	0.42	2.5		µg/L	5	4/20/2012 01:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-186
Lab Order:	N007674	**Collection Date:**	4/12/2012 11:55:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120504A**	QC Batch: **39530**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Arsenic	3.7	0.17	0.50		µg/L	5	5/4/2012 06:53 PM
Manganese	380	0.80	2.5		µg/L	5	4/20/2012 01:48 PM
Molybdenum	69	0.37	2.5		µg/L	5	4/20/2012 01:48 PM
Selenium	ND	0.42	2.5		µg/L	5	4/20/2012 01:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007674-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.960	10	10.00	0	110	75	125				
Thallium	11.565	5.0	10.00	0	116	75	125				

Sample ID: **N007674-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.490	10	10.00	0	105	75	125	10.96	4.38	20	
Thallium	11.199	5.0	10.00	0	112	75	125	11.56	3.21	20	

Sample ID: **N007674-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2950.854	12	100.0	2928	22.6	75	125				S
Molybdenum	50.388	12	10.00	39.65	107	75	125				

Sample ID: **N007674-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2919.321	12	100.0	2928	-8.89	75	125	2951	1.07	20	S
Molybdenum	50.787	12	10.00	39.65	111	75	125	50.39	0.790	20	

Sample ID: **N007674-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007674-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.190	2.5	10.00	0	112	75	125				
Beryllium	12.090	2.5	10.00	0	121	75	125				
Cadmium	9.755	2.5	10.00	0	97.6	75	125				
Selenium	13.633	2.5	10.00	1.811	118	75	125				

Sample ID: **N007674-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **ZZZZZZ** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.815	2.5	10.00	0	108	75	125	11.19	3.41	20	
Beryllium	12.070	2.5	10.00	0	121	75	125	12.09	0.166	20	
Cadmium	9.540	2.5	10.00	0	95.4	75	125	9.755	2.23	20	
Selenium	12.152	2.5	10.00	1.811	103	75	125	13.63	11.5	20	

Sample ID: **MB-39530** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/16/2012** RunNo: **84051**
Client ID: **PBW** Batch ID: **39530** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/20/2012** SeqNo: **1387393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LCS-39530**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84051**
Client ID: **LCSW**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/20/2012**	SeqNo: **1387394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	8.811	0.50	10.00	0	88.1	85	115				
Beryllium	9.069	0.50	10.00	0	90.7	85	115				
Cadmium	9.430	0.50	10.00	0	94.3	85	115				
Lead	9.358	1.0	10.00	0	93.6	85	115				
Manganese	92.115	0.50	100.0	0	92.1	85	115				
Molybdenum	9.260	0.50	10.00	0	92.6	85	115				
Selenium	9.233	0.50	10.00	0	92.3	85	115				
Thallium	9.454	0.50	10.00	0	94.5	85	115				

Sample ID: **MB-39530**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **PBW**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Sample ID: **LCS-39530**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **LCSW**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.461	0.10	10.00	0	94.6	85	115				

Sample ID: **N007674-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.308	0.50	10.00	12.47	108	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007674-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.222	0.50	10.00	12.47	107	75	125	23.31	0.370	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LCS-39530**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **LCSW**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.461	0.10	10.00	0	94.6	85	115				

Sample ID: **N007674-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.308	0.50	10.00	12.47	108	75	125				

Sample ID: **N007674-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84173**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2012**	SeqNo: **1391151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.222	0.50	10.00	12.47	107	75	125	23.31	0.370	20	

Revision1, 05/08/12

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *27-Apr-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-186
Lab Order:	N007674	**Collection Date:**	4/11/2012 3:04:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007674-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120417C**	QC Batch: **39537**			PrepDate:	**4/16/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	4/17/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39537**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84054**
Client ID: **LCSW**	Batch ID: **39537**	TestNo: **EPA 7470A**		Analysis Date: **4/17/2012**	SeqNo: **1387511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.768	0.20	5.000	0	95.4	85	115				

Sample ID: **MB-39537**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84054**
Client ID: **PBW**	Batch ID: **39537**	TestNo: **EPA 7470A**		Analysis Date: **4/17/2012**	SeqNo: **1387512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007674-001A-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84054**
Client ID: **ZZZZZZ**	Batch ID: **39537**	TestNo: **EPA 7470A**		Analysis Date: **4/17/2012**	SeqNo: **1387514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.918	0.20	5.000	0	98.4	75	125				

Sample ID: **N007674-001A-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **4/16/2012**	RunNo: **84054**
Client ID: **ZZZZZZ**	Batch ID: **39537**	TestNo: **EPA 7470A**		Analysis Date: **4/17/2012**	SeqNo: **1387515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.882	0.20	5.000	0	97.6	75	125	4.918	0.722	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/12/2012 3:48:30 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/12/2012
COC Number: 3

	Container:	1Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly				
	Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C				
	Filtered:	NA	Field	Field	Field	Field	NA	NA				
	Holding Time:	30	180	180	180	180	2	2				
		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-22-186	4/11/2012 15:04 Water			X	X		X		N007674-1	2	
MW-52D-186	4/11/2012 10:35 Water		X		X		X		-2	2	
MW-52M-186	4/11/2012 9:34 Water		X		X		X		-3	2	
MW-52S-186	4/11/2012 8:18 Water		X		X		X		-4	2	
MW-53D-186	4/11/2012 13:39 Water		X		X		X		-5	2	
MW-53M-186	4/11/2012 12:33 Water		X		X		X		-6	2	
MW-126-186	4/12/2012 14:16 Water	X	X			X	X	X	-7	3	
MW-44-070-186	4/12/2012 12:53 Water	X	X		X		X		-8	3	
MW-44-115-186	4/12/2012 14:14 Water	X	X			X	X	X	-9	3	
MW-44-125-186	4/12/2012 11:55 Water	X	X			X	X	X	-10	3	
MW-46-205-186	4/12/2012 15:47 Water						X		-11	1	
									TOTAL NUMBER OF CONTAINERS	25	

	Signatures	Date/Time
Approved by		
Sampled by		4-12-12
Relinquished by		
Received by		4/12/12 1608
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 5.1°C
Airbill No: ICE 12442
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/12/2012	Workorder:	N007674
Rep sample Temp (Deg C):	5.1	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 4/13/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007674-007C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0.076 * 5
	=	0.38 mg/L

Since the reporting limit is 2.5 mg/L, therefore

Nitrate, mg/L	=	**ND**

JMS 4/23/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ~~ug~~mg/L, calculated concentration ns for 4/27/12
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007674-001A**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.00994* 5* (25/25) * 1000

= 49.70653 ug/L

Reporting results in two significant figures,

Barium, ug/L = 50

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007674
Test Method: EPA 6010
Analysis Date: 04/17/12

Matrix: Water
Batch No.: 39538

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007674-001A-DT 5X	Antimony	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Barium	ug/L	51.96806298	NA	49.70653111	-4.55%	10
N007674-001A-DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Copper	ug/L	0	NA	21.38219736	100.00%	10
N007674-001A-DT 5X	Molybdenum	ug/L	41.15082393	NA	31.57993955	-30.31%	10
N007674-001A-DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Vanadium	ug/L	0	NA	0	0.00%	10
N007674-001A-DT 5X	Zinc	ug/L	0	NA	0	0.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007674
Test Method: EPA 6010
Analysis Date: 04/18/12

Matrix: Water
Batch No.: 39545

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007674-001A-DT 5X	Silver	ug/L	0	NA	7.402802	100.00%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007674-001A-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **83961**
Client ID: **ZZZZZZ**	Batch ID: **39538**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/17/2012**	SeqNo: **1385111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	663.603	50	625.0	0	106	75	125				
Barium	731.392	15	625.0	49.71	109	75	125				
Beryllium	604.987	5.0	625.0	0	96.8	75	125				
Cadmium	586.285	15	625.0	0	93.8	75	125				
Cobalt	620.528	15	625.0	0	99.3	75	125				
Copper	700.866	25	625.0	21.38	109	75	125				
Lead	565.695	50	625.0	0	90.5	75	125				
Molybdenum	675.891	25	625.0	31.58	103	75	125				
Nickel	614.478	25	625.0	0	98.3	75	125				
Vanadium	614.602	15	625.0	0	98.3	75	125				
Zinc	633.683	50	625.0	0	101	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007674-001A-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **83978**
Client ID: **ZZZZZZ**	Batch ID: **39545**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/18/2012**	SeqNo: **1385417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	687.069	15	625.0	7.403	109	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007674-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.702 * 5 * (50/40)

= 13.51ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 14

NS for 4/26/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007674
Test Method: EPA 6020
Analysis Date: 04/20/12

Matrix: Water
Batch No.: 39530

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Cr &Tl, the calc. values were < 25X the RL. PS @ 25x passes the criteria

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007674-001A-DT 25X	Chromium	µg/L	0	NA	0		10
N007674-001A-DT 25X	Arsenic	µg/L	13.70291985	PASS	13.50951855	-1.43%	10
N007674-001A-DT 25X	Selenium	µg/L	1.6508	PASS	1.810802895	8.84%	10
N007674-001A-DT 125X	Manganese	µg/L	3036.646078	PASS	2928.212987	-3.70%	10
N007674-001A-DT 125X	Molybdenum	µg/L	37.5965008	PASS	39.64717321	5.17%	10

CLIENT: CH2M HILL
Work Order: N007674
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007674-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84051**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/20/2012**	SeqNo: **1387354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	106.906	5.0	100.0	0	107	75	125				

Sample ID: **N007674-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84051**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/20/2012**	SeqNo: **1387359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	5072.678	12	2500	2928	85.8	75	125				
Molybdenum	311.777	12	250.0	39.65	109	75	125				

Sample ID: **N007674-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84051**
Client ID: **ZZZZZZ**	Batch ID: **39530**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/20/2012**	SeqNo: **1387379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	68.712	0.50	50.00	13.51	110	75	125				
Chromium	44.664	5.0	50.00	0	89.3	75	125				
Selenium	54.435	2.5	50.00	1.811	105	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007674-001A**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	=	**0.0**

Mercury, ug/L	=	**ND**

NS for yhm

May 07, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007723

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 23, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007723

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *07-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007723
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007723-001A	MW-64BR-UPR-150-186	Water	4/16/2012 3:35:00 PM	4/23/2012	
N007723-001B	MW-64BR-UPR-150-186	Water	4/16/2012 3:35:00 PM	4/23/2012	
N007723-002A	MW-64BR-LWR-150-186	Water	4/19/2012 10:25:00 AM	4/23/2012	
N007723-002B	MW-64BR-LWR-150-186	Water	4/19/2012 10:25:00 AM	4/23/2012	
N007723-003A	MW-124-186	Water	4/23/2012 7:15:00 AM	4/23/2012	
N007723-003B	MW-124-186	Water	4/23/2012 7:15:00 AM	4/23/2012	
N007723-004A	MW-33-040-186	Water	4/23/2012 9:17:00 AM	4/23/2012	
N007723-004B	MW-33-040-186	Water	4/23/2012 9:17:00 AM	4/23/2012	
N007723-005A	MW-33-150-186	Water	4/23/2012 10:22:00 AM	4/23/2012	
N007723-005B	MW-33-150-186	Water	4/23/2012 10:22:00 AM	4/23/2012	
N007723-006A	MW-33-210-186	Water	4/23/2012 2:49:00 PM	4/23/2012	
N007723-006B	MW-33-210-186	Water	4/23/2012 2:49:00 PM	4/23/2012	
N007723-007A	MW-46-175-186	Water	4/23/2012 1:23:00 PM	4/23/2012	
N007723-007B	MW-46-175-186	Water	4/23/2012 1:23:00 PM	4/23/2012	

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-UPR-150-186
Lab Order:	N007723	**Collection Date:**	4/16/2012 3:35:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**				PrepDate:		Analyst: **KAB**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-LWR-150-186
Lab Order:	N007723	**Collection Date:**	4/19/2012 10:25:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**			PrepDate:			Analyst: **KAB**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 7:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**			PrepDate:			Analyst: **KAB**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 9:17:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**			PrepDate:			Analyst: **KAB**
Specific Conductance	6100	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 10:22:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**			PrepDate:			Analyst: **KAB**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 2:49:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 1:23:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120424A**	QC Batch: **R84033**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	4/24/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84033**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84033**
Client ID: **LCSW**	Batch ID: **R84033**	TestNo: **EPA 120.1**		Analysis Date: **4/24/2012**	SeqNo: **1386961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1416.000	0.10	1411	0	100	85	115				

Sample ID: **N007723-004B-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84033**
Client ID: **ZZZZZZ**	Batch ID: **R84033**	TestNo: **EPA 120.1**		Analysis Date: **4/24/2012**	SeqNo: **1386966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6100.000	0.10						6110	0.164	10	

Sample ID: **N007723-004B-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84033**
Client ID: **ZZZZZZ**	Batch ID: **R84033**	TestNo: **EPA 120.1**		Analysis Date: **4/24/2012**	SeqNo: **1386972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16120.000	0.20	9977	6110	100	75	125				

Sample ID: **N007723-004B-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84033**
Client ID: **ZZZZZZ**	Batch ID: **R84033**	TestNo: **EPA 120.1**		Analysis Date: **4/24/2012**	SeqNo: **1386973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16100.000	0.20	9977	6110	100	75	125	16120	0.124	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 7:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120425A**	QC Batch: **R84152**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	4/25/2012 12:12 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120424A**	QC Batch: **R84150**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/24/2012 11:35 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 9:17:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120425A**	QC Batch: **R84152**			PrepDate:			Analyst: **QBM**
Fluoride	9.3	0.020	2.5		mg/L	5	4/25/2012 12:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120424A**	QC Batch: **R84150**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	4/24/2012 11:47 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 10:22:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **IC2_120425A**	QC Batch: **R84152**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	4/25/2012 12:59 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **IC2_120424A**	QC Batch: **R84150**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/24/2012 11:58 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 2:49:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120425A**	QC Batch: **R84152**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	4/25/2012 01:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120424A**	QC Batch: **R84150**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/24/2012 12:10 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 1:23:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120424A**	QC Batch: **R84150**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	4/24/2012 12:22 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R84152_F**	SampType: **MBLK**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84152**
Client ID: **PBW**	Batch ID: **R84152**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2012**	SeqNo: **1390334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R84152_F**	SampType: **LCS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84152**
Client ID: **LCSW**	Batch ID: **R84152**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2012**	SeqNo: **1390335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.423	0.50	2.500	0	96.9	90	110				

Sample ID: **N007723-004BMS**	SampType: **MS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84152**
Client ID: **ZZZZZZ**	Batch ID: **R84152**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2012**	SeqNo: **1390338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	21.815	2.5	12.50	9.255	100	80	120				

Sample ID: **N007723-004BMSD**	SampType: **MSD**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84152**
Client ID: **ZZZZZZ**	Batch ID: **R84152**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2012**	SeqNo: **1390339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	21.660	2.5	12.50	9.255	99.2	80	120	21.82	0.713	20	

Sample ID: **N007723-005BDUP**	SampType: **DUP**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84152**
Client ID: **ZZZZZZ**	Batch ID: **R84152**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2012**	SeqNo: **1390341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.280	10						4.960	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: MB-R84150_NO3	SampType: MBLK	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 84150
Client ID: PBW	Batch ID: R84150	TestNo: EPA 300.0		Analysis Date: 4/24/2012	SeqNo: 1390248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: LCS-R84150_NO3	SampType: LCS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 84150
Client ID: LCSW	Batch ID: R84150	TestNo: EPA 300.0		Analysis Date: 4/24/2012	SeqNo: 1390249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.401	0.50	2.500	0	96.0	90	110				

Sample ID: N007723-003BMS	SampType: MS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 84150
Client ID: ZZZZZZ	Batch ID: R84150	TestNo: EPA 300.0		Analysis Date: 4/24/2012	SeqNo: 1390255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	13.170	2.5	12.50	1.475	93.6	80	120				

Sample ID: N007723-003BMSD	SampType: MSD	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 84150
Client ID: ZZZZZZ	Batch ID: R84150	TestNo: EPA 300.0		Analysis Date: 4/24/2012	SeqNo: 1390256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	13.190	2.5	12.50	1.475	93.7	80	120	13.17	0.152	20	

Sample ID: N007723-005BDUP	SampType: DUP	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 84150
Client ID: ZZZZZZ	Batch ID: R84150	TestNo: EPA 300.0		Analysis Date: 4/24/2012	SeqNo: 1390259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.525	2.5						1.520	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 7:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Manganese	ND	0.16	0.50		µg/L	1	4/30/2012 03:03 PM
Molybdenum	38	0.37	2.5		µg/L	5	4/30/2012 12:57 PM
Selenium	ND	0.42	2.5		µg/L	5	4/30/2012 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT: CH2M HILL
Lab Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007723-004

Client Sample ID: MW-33-040-186
Collection Date: 4/23/2012 9:17:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Arsenic	17	0.035	0.10		µg/L	1	4/30/2012 12:07 PM
Manganese	4.9	0.16	0.50		µg/L	1	4/30/2012 12:07 PM
Molybdenum	170	0.074	0.50		µg/L	1	4/30/2012 12:07 PM
Selenium	ND	0.084	0.50		µg/L	1	4/30/2012 12:07 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 10:22:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Manganese	13	0.16	0.50		µg/L	1	4/30/2012 03:09 PM
Molybdenum	39	0.37	2.5		µg/L	5	4/30/2012 01:03 PM
Selenium	ND	0.42	2.5		µg/L	5	4/30/2012 01:03 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 2:49:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Manganese	10	0.16	0.50		µg/L	1	4/30/2012 03:15 PM
Molybdenum	16	0.37	2.5		µg/L	5	4/30/2012 01:09 PM
Selenium	ND	0.42	2.5		µg/L	5	4/30/2012 01:09 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-186
Lab Order:	N007723	**Collection Date:**	4/23/2012 1:23:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007723-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120430A**	QC Batch: **39611**				PrepDate:	**4/27/2012**	Analyst: **CEI**
Molybdenum	160	0.37	2.5		µg/L	5	4/30/2012 01:15 PM
Selenium	ND	0.42	2.5		µg/L	5	4/30/2012 01:15 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39611**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **PBW**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39611**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **LCSW**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.263	0.10	10.00	0	92.6	85	115				
Manganese	99.115	0.50	100.0	0	99.1	85	115				
Molybdenum	9.735	0.50	10.00	0	97.3	85	115				
Selenium	9.762	0.50	10.00	0	97.6	85	115				

Sample ID: **N007723-004A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	26.662	0.10	10.00	16.73	99.4	75	125				
Manganese	91.628	0.50	100.0	4.935	86.7	75	125				
Molybdenum	181.311	0.50	10.00	175.0	63.5	75	125				S
Selenium	10.116	0.50	10.00	0.2394	98.8	75	125				

Sample ID: **N007723-004A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	26.898	0.10	10.00	16.73	102	75	125	26.66	0.879	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007723-004A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/27/2012** RunNo: **84158**
Client ID: **ZZZZZZ** Batch ID: **39611** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2012** SeqNo: **1390572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.435	0.50	100.0	4.935	89.5	75	125	91.63	3.02	20	
Molybdenum	182.216	0.50	10.00	175.0	72.5	75	125	181.3	0.498	20	S
Selenium	10.391	0.50	10.00	0.2394	102	75	125	10.12	2.67	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CH2MHILL

CHAIN OF CUSTODY RECORD

4/23/2012 3:58:12 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/23/2012
COC Number: 5

	Container:	1Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
	Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
	Filtered:	NA	Field	Field	Field	NA	NA	NA			
	Holding Time:	30	180	180	180	2	2	2			
DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-64BR-UPR-150-iSG	4/16/2012	15:35	Water	X				X			N0007723-1	2	
MW-64BR-LWR-150-iSG	4/19/2012	10:25	Water	X				X			-2	2	
MW-124-186	4/23/2012	7:15	Water				X	X		X	-3	2	
MW-33-040-186	4/23/2012	9:17	Water		X		X	X		X	-4	2	
MW-33-150-186	4/23/2012	10:22	Water				X	X		X	-5	2	
MW-33-210-186	4/23/2012	14:49	Water				X	X		X	-6	2	
MW-46-175-186	4/23/2012	13:23	Water			X		X	X		-7	2	
										TOTAL NUMBER OF CONTAINERS		14	

	Signatures	Date/Time
Approved by		
Sampled by		4-23-12 1609
Relinquished by		
Received by		4/23/12@1610
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 2.8°C
Airbill No: ICE 12 #2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/23/2012	Workorder:	N007723
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 4/24/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Fluoride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007723-004B**, concentration in mg/L are calculated as follows:

Fluoride, mg/L = 1.851 * 5

= 9.255 mg/L

Reporting **N007723-004B**, results in two significant figures,

Fluoride, mg/L = 9.3 mg/L

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007723-004A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 16.7266 * 1 * (25/25)

= 16.7266 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 17

US for
5/7/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007723
Test Method: EPA 6020
Analysis Date: 04/30/12

Matrix: Water
Batch No.: 39611

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn & Se, the calc. values were < 25X the RL. & PS @ 5X pass the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007723-004A-DT 5X	Arsenic	µg/L	16.923218	PASS	16.726624	-1.18%	10
N007723-004A-DT 5X	Manganese	µg/L	5.127905	NA	4.935348	-3.90%	10
N007723-004A-DT 5X	Molybdenum	µg/L	168.374904	PASS	174.961454	3.76%	10
N007723-004A-DT 5X	Selenium	µg/L	0.000000	NA	0.239429	100.00%	10

CLIENT: CH2M HILL
Work Order: N007723
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007723-004A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	37.693	0.20	20.00	16.73	105	75	125				
Manganese	190.955	1.0	200.0	4.935	93.0	75	125				
Molybdenum	190.599	1.0	20.00	175.0	78.2	75	125				
Selenium	21.033	1.0	20.00	0.2394	104	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

July 19, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007754

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 26, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007754

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2694*

Advanced Technology Laboratories, Inc.

Date: *10-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007754
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007754-001A	MW-16-186	Water	4/24/2012 3:56:00 PM	4/26/2012	5/10/2012
N007754-001B	MW-16-186	Water	4/24/2012 3:56:00 PM	4/26/2012	5/10/2012
N007754-002A	MW-127-186	Water	4/25/2012 7:25:00 AM	4/26/2012	5/10/2012
N007754-003A	MW-17-186	Water	4/25/2012 12:08:00 PM	4/26/2012	5/10/2012
N007754-003B	MW-17-186	Water	4/25/2012 12:08:00 PM	4/26/2012	5/10/2012
N007754-004A	MW-47-055-186	Water	4/25/2012 1:44:00 PM	4/26/2012	5/10/2012
N007754-004B	MW-47-055-186	Water	4/25/2012 1:44:00 PM	4/26/2012	5/10/2012
N007754-005A	MW-47-115-186	Water	4/25/2012 10:30:00 AM	4/26/2012	5/10/2012
N007754-006A	MW-48-186	Water	4/25/2012 3:30:00 PM	4/26/2012	5/10/2012
N007754-007A	MW-50-095-186	Water	4/25/2012 2:54:00 PM	4/26/2012	5/10/2012
N007754-008A	MW-21-186	Water	4/26/2012 8:20:00 AM	4/26/2012	5/10/2012
N007754-008B	MW-21-186	Water	4/26/2012 8:20:00 AM	4/26/2012	5/10/2012
N007754-009A	MW-35-060-186	Water	4/26/2012 11:42:00 AM	4/26/2012	5/10/2012
N007754-009B	MW-35-060-186	Water	4/26/2012 11:42:00 AM	4/26/2012	5/10/2012
N007754-010A	MW-35-135-186	Water	4/26/2012 1:21:00 PM	4/26/2012	5/10/2012
N007754-010B	MW-35-135-186	Water	4/26/2012 1:21:00 PM	4/26/2012	5/10/2012
N007754-011A	MW-41D-186	Water	4/26/2012 10:42:00 AM	4/26/2012	5/10/2012
N007754-011B	MW-41D-186	Water	4/26/2012 10:42:00 AM	4/26/2012	5/10/2012
N007754-012A	MW-63-065-186	Water	4/26/2012 3:17:00 PM	4/26/2012	5/10/2012
N007754-012B	MW-63-065-186	Water	4/26/2012 3:17:00 PM	4/26/2012	5/10/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2695

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-16-186
Lab Order:	N007754	**Collection Date:**	4/24/2012 3:56:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	980	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 7:25:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	4800	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-17-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 12:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 1:44:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	4400	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007754-005

Client Sample ID: MW-47-115-186
Collection Date: 4/25/2012 10:30:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007754-006

Client Sample ID: MW-48-186
Collection Date: 4/25/2012 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 2:54:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	4800	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 8:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	9700	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 11:42:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	5800	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 1:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510D**	QC Batch: **R84214**			PrepDate:			Analyst: **KAB**
Specific Conductance	9900	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007754-011

Client Sample ID: MW-41D-186
Collection Date: 4/26/2012 10:42:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510E**	QC Batch: **R84215**			PrepDate:			Analyst: **KAB**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007754-012

Client Sample ID: MW-63-065-186
Collection Date: 4/26/2012 3:17:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510E**	QC Batch: **R84215**			PrepDate:			Analyst: **KAB**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	5/10/2012

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84214**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **84214**			
Client ID: **LCSW**	Batch ID: **R84214**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**			SeqNo: **1392439**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1420.000	0.10	1411	0	101	85	115				

Sample ID: **N007754-001B-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **84214**			
Client ID: **ZZZZZZ**	Batch ID: **R84214**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**			SeqNo: **1392441**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	983.000	0.10						983.0	0	10	

Sample ID: **N007754-001B-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **84214**			
Client ID: **ZZZZZZ**	Batch ID: **R84214**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**			SeqNo: **1392442**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11680.000	0.20	9977	983.0	107	75	125				

Sample ID: **N007754-001B-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:			RunNo: **84214**			
Client ID: **ZZZZZZ**	Batch ID: **R84214**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**			SeqNo: **1392443**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11680.000	0.20	9977	983.0	107	75	125	11680	0	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84215**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84215**
Client ID: **LCSW**	Batch ID: **R84215**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**	SeqNo: **1392456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1420.000	0.10	1411	0	101	85	115				

Sample ID: **N007754-012B-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84215**
Client ID: **ZZZZZZ**	Batch ID: **R84215**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**	SeqNo: **1392460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6890.000	0.10						6890	0	10	

Sample ID: **N007754-012B-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84215**
Client ID: **ZZZZZZ**	Batch ID: **R84215**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**	SeqNo: **1392461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17340.000	0.20	9977	6890	105	75	125				

Sample ID: **N007754-012B-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84215**
Client ID: **ZZZZZZ**	Batch ID: **R84215**	TestNo: **EPA 120.1**		Analysis Date: **5/10/2012**	SeqNo: **1392462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17340.000	0.20	9977	6890	105	75	125	17340	0	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 8:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120427A**	QC Batch: **R84117**			PrepDate:			Analyst: **QBM**
Nitrate as N	1.8	0.024	1.0		mg/L	2	4/27/2012 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 11:42:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120427A**	QC Batch: **R84117**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.0	0.024	1.0		mg/L	2	4/27/2012 12:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 1:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120427A**	QC Batch: **R84117**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.5	0.024	1.0		mg/L	2	4/27/2012 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 3:17:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120427A**	QC Batch: **R84117**			PrepDate:			Analyst: **QBM**
Nitrate as N	1.1	0.024	1.0		mg/L	2	4/27/2012 12:54 PM

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84117_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84117**
Client ID: **PBW**	Batch ID: **R84117**	TestNo: **EPA 300.0**		Analysis Date: **4/27/2012**	SeqNo: **1389463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84117_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84117**
Client ID: **LCSW**	Batch ID: **R84117**	TestNo: **EPA 300.0**		Analysis Date: **4/27/2012**	SeqNo: **1389464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.410	0.50	2.500	0	96.4	90	110				

Sample ID: **N007754-009BMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84117**
Client ID: **ZZZZZZ**	Batch ID: **R84117**	TestNo: **EPA 300.0**		Analysis Date: **4/27/2012**	SeqNo: **1389467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	6.966	1.0	5.000	2.020	98.9	80	120				

Sample ID: **N007754-009BMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84117**
Client ID: **ZZZZZZ**	Batch ID: **R84117**	TestNo: **EPA 300.0**		Analysis Date: **4/27/2012**	SeqNo: **1389468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.046	1.0	5.000	2.020	101	80	120	6.966	1.14	20	

Sample ID: **N007754-012BDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84117**
Client ID: **ZZZZZZ**	Batch ID: **R84117**	TestNo: **EPA 300.0**		Analysis Date: **4/27/2012**	SeqNo: **1389471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.122	1.0						1.088	3.08	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT: CH2M HILL
Lab Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007754-001

Client Sample ID: MW-16-186
Collection Date: 4/24/2012 3:56:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120502B**	QC Batch: **39680**				PrepDate:	**5/1/2012**	Analyst: **JT**
Aluminum	110	7.0	50		ug/L	1	5/2/2012 01:45 PM
Antimony	ND	3.4	10		ug/L	1	5/1/2012 03:23 PM
Barium	32	0.36	3.0		ug/L	1	5/1/2012 03:23 PM
Beryllium	ND	0.12	1.0		ug/L	1	5/1/2012 03:23 PM
Boron	320	14	100		ug/L	1	5/1/2012 03:23 PM
Cadmium	ND	0.37	3.0		ug/L	1	5/1/2012 03:23 PM
Calcium	30000	75	500		ug/L	1	5/4/2012 03:18 PM
Cobalt	ND	0.37	3.0		ug/L	1	5/1/2012 03:23 PM
Copper	ND	2.2	5.0		ug/L	1	5/1/2012 03:23 PM
Iron	ND	7.2	20		ug/L	1	5/2/2012 01:45 PM
Lead	ND	1.6	10		ug/L	1	5/1/2012 03:23 PM
Magnesium	5100	13	100		ug/L	1	5/1/2012 03:23 PM
Molybdenum	13	0.60	5.0		ug/L	1	5/1/2012 03:23 PM
Nickel	ND	0.70	5.0		ug/L	1	5/1/2012 03:23 PM
Silver	ND	0.39	3.0		ug/L	1	5/2/2012 01:45 PM
Vanadium	36	0.31	3.0		ug/L	1	5/2/2012 01:45 PM
Zinc	ND	1.4	10		ug/L	1	5/1/2012 03:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-17-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 12:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120502B**	QC Batch: **39680**				PrepDate:	**5/1/2012**	Analyst: **JT**
Aluminum	ND	7.0	50		ug/L	1	5/2/2012 02:04 PM
Antimony	ND	3.4	10		ug/L	1	5/1/2012 03:55 PM
Barium	24	0.36	3.0		ug/L	1	5/1/2012 03:55 PM
Beryllium	ND	0.12	1.0		ug/L	1	5/1/2012 03:55 PM
Boron	230	14	100		ug/L	1	5/1/2012 03:55 PM
Cadmium	ND	0.37	3.0		ug/L	1	5/1/2012 03:55 PM
Calcium	78000	75	500		ug/L	1	5/4/2012 03:40 PM
Cobalt	ND	0.37	3.0		ug/L	1	5/1/2012 03:55 PM
Copper	ND	2.2	5.0		ug/L	1	5/1/2012 03:55 PM
Iron	ND	7.2	20		ug/L	1	5/2/2012 02:04 PM
Lead	ND	1.6	10		ug/L	1	5/1/2012 03:55 PM
Magnesium	11000	13	100		ug/L	1	5/1/2012 03:55 PM
Molybdenum	15	0.60	5.0		ug/L	1	5/1/2012 03:55 PM
Nickel	ND	0.70	5.0		ug/L	1	5/1/2012 03:55 PM
Silver	ND	0.39	3.0		ug/L	1	5/2/2012 02:04 PM
Vanadium	5.2	0.31	3.0		ug/L	1	5/2/2012 02:04 PM
Zinc	13	1.4	10		ug/L	1	5/1/2012 03:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-39663** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/1/2012** RunNo: **84105**
Client ID: **LCSW** Batch ID: **39663** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/1/2012** SeqNo: **1389191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.916	10	50.00	0	102	85	115				
Barium	53.891	3.0	50.00	0	108	85	115				
Beryllium	10.562	1.0	10.00	0	106	85	115				
Boron	1037.807	100	1000	0	104	85	115				
Cadmium	10.468	3.0	10.00	0	105	85	115				
Cobalt	10.686	3.0	10.00	0	107	85	115				
Copper	10.204	5.0	10.00	0	102	85	115				
Lead	52.619	10	50.00	0	105	85	115				
Magnesium	1043.150	100	1000	0	104	85	115				
Molybdenum	53.036	5.0	50.00	0	106	85	115				
Nickel	54.352	5.0	50.00	0	109	85	115				
Zinc	55.635	10	50.00	0	111	85	115				

Sample ID: **N007754-001A-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/1/2012** RunNo: **84105**
Client ID: **ZZZZZZ** Batch ID: **39663** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/1/2012** SeqNo: **1389195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.948	10	50.00	0	95.9	75	125				
Barium	82.973	3.0	50.00	31.52	103	75	125				
Beryllium	10.723	1.0	10.00	0	107	75	125				
Boron	1387.396	100	1000	318.6	107	75	125				
Cadmium	9.807	3.0	10.00	0	98.1	75	125				
Cobalt	10.116	3.0	10.00	0	101	75	125				
Copper	11.039	5.0	10.00	0	110	75	125				
Lead	49.208	10	50.00	0	98.4	75	125				
Magnesium	5866.862	100	1000	5103	76.4	75	125				
Molybdenum	61.304	5.0	50.00	12.83	96.9	75	125				
Nickel	54.567	5.0	50.00	1.603	106	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: N007754-001A-MS	SampType: MS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84105
Client ID: ZZZZZZ	Batch ID: 39663	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/1/2012	SeqNo: 1389195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	54.240	10	50.00	1.369	106	75	125				

Sample ID: N007754-001A-MSD	SampType: MSD	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84105
Client ID: ZZZZZZ	Batch ID: 39663	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/1/2012	SeqNo: 1389196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.734	10	50.00	0	95.5	75	125	47.95	0.449	20	
Barium	83.878	3.0	50.00	31.52	105	75	125	82.97	1.08	20	
Beryllium	10.706	1.0	10.00	0	107	75	125	10.72	0.154	20	
Boron	1400.507	100	1000	318.6	108	75	125	1387	0.941	20	
Cadmium	9.758	3.0	10.00	0	97.6	75	125	9.807	0.505	20	
Cobalt	10.170	3.0	10.00	0	102	75	125	10.12	0.530	20	
Copper	11.205	5.0	10.00	0	112	75	125	11.04	1.49	20	
Lead	48.782	10	50.00	0	97.6	75	125	49.21	0.868	20	
Magnesium	6002.322	100	1000	5103	90.0	75	125	5867	2.28	20	
Molybdenum	61.487	5.0	50.00	12.83	97.3	75	125	61.30	0.298	20	
Nickel	54.417	5.0	50.00	1.603	106	75	125	54.57	0.275	20	
Zinc	54.236	10	50.00	1.369	106	75	125	54.24	0.00731	20	

Sample ID: MB-39663	SampType: MBLK	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84105
Client ID: PBW	Batch ID: 39663	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/1/2012	SeqNo: 1389209

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Boron	ND	100									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Copper	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39663** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/1/2012** RunNo: **84105**
Client ID: **PBW** Batch ID: **39663** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/1/2012** SeqNo: **1389209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	10									
Magnesium	ND	100									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Zinc	ND	10									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39680**	SampType: **MBLK**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/1/2012**	RunNo: **84108**
Client ID: **PBW**	Batch ID: **39680**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/2/2012**	SeqNo: **1389278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	50									
Iron	ND	20									
Silver	ND	3.0									
Vanadium	ND	3.0									

Sample ID: **LCS-39680**	SampType: **LCS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/1/2012**	RunNo: **84108**
Client ID: **LCSW**	Batch ID: **39680**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/2/2012**	SeqNo: **1389279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1006.335	50	1000	0	101	85	115				
Iron	96.077	20	100.0	0	96.1	85	115				
Silver	10.328	3.0	10.00	0	103	85	115				
Vanadium	9.856	3.0	10.00	0	98.6	85	115				

Sample ID: **N007754-001A-MS**	SampType: **MS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/1/2012**	RunNo: **84108**
Client ID: **ZZZZZZ**	Batch ID: **39680**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/2/2012**	SeqNo: **1389283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1149.614	50	1000	109.7	104	75	125				
Iron	117.837	20	100.0	14.40	103	75	125				
Silver	9.323	3.0	10.00	0.4459	88.8	75	125				
Vanadium	44.548	3.0	10.00	35.67	88.8	75	125				

Sample ID: **N007754-001A-MSD**	SampType: **MSD**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/1/2012**	RunNo: **84108**
Client ID: **ZZZZZZ**	Batch ID: **39680**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/2/2012**	SeqNo: **1389284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1146.945	50	1000	109.7	104	75	125	1150	0.232	20	
Iron	118.482	20	100.0	14.40	104	75	125	117.8	0.546	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: N007754-001A-MSD	SampType: MSD	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84108
Client ID: ZZZZZZ	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/2/2012	SeqNo: 1389284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.258	3.0	10.00	0.4459	98.1	75	125	9.323	9.55	20	
Vanadium	45.604	3.0	10.00	35.67	99.3	75	125	44.55	2.34	20	

Sample ID: MB-39680	SampType: MBLK	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84202
Client ID: PBW	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/4/2012	SeqNo: 1392011

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									

Sample ID: LCS-39680	SampType: LCS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84202
Client ID: LCSW	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/4/2012	SeqNo: 1392012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	885.290	500	1000	0	88.5	85	115				

Sample ID: N007754-001A-MS	SampType: MS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84202
Client ID: ZZZZZZ	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/4/2012	SeqNo: 1392016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	30835.049	500	1000	29640	119	75	125				

Sample ID: N007754-001A-MSD	SampType: MSD	TestCode: 6010_WDPGE	Units: ug/L	Prep Date: 5/1/2012	RunNo: 84202
Client ID: ZZZZZZ	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/4/2012	SeqNo: 1392017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	30847.872	500	1000	29640	121	75	125	30840	0.0416	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *19-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007754-001

Client Sample ID: MW-16-186
Collection Date: 4/24/2012 3:56:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Antimony	ND	0.084	0.50		µg/L	1	4/30/2012 03:51 PM
Arsenic	11	0.035	0.10		µg/L	1	4/30/2012 03:51 PM
Manganese	ND	0.16	0.50		µg/L	1	4/30/2012 03:51 PM
Selenium	1.7	0.084	0.50		µg/L	1	4/30/2012 03:51 PM
Thallium	ND	0.075	0.50		µg/L	1	4/30/2012 03:51 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *19-Jul-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-17-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 12:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Antimony	ND	0.084	0.50		µg/L	1	4/30/2012 03:58 PM
Arsenic	1.4	0.035	0.10		µg/L	1	4/30/2012 03:58 PM
Manganese	ND	0.16	0.50		µg/L	1	4/30/2012 03:58 PM
Selenium	10	0.084	0.50		µg/L	1	4/30/2012 03:58 PM
Thallium	ND	0.075	0.50		µg/L	1	4/30/2012 03:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 1:44:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**				PrepDate:	**4/27/2012**	Analyst: **CEI**
Arsenic	1.1	0.035	0.10		µg/L	1	4/30/2012 04:04 PM
Manganese	ND	0.16	0.50		µg/L	1	4/30/2012 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 8:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Molybdenum	60	0.37	2.5		µg/L	5	4/30/2012 01:40 PM
Selenium	17	0.084	0.50		µg/L	1	4/30/2012 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 11:42:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:		**4/27/2012**	Analyst: **CEI**
Arsenic	1.1	0.035	0.10		µg/L	1	4/30/2012 04:16 PM
Manganese	ND	0.16	0.50		µg/L	1	4/30/2012 04:16 PM
Molybdenum	10	0.074	0.50		µg/L	1	4/30/2012 04:16 PM
Selenium	1.1	0.084	0.50		µg/L	1	4/30/2012 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 1:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Molybdenum	22	0.37	2.5		µg/L	5	4/30/2012 02:45 PM
Selenium	ND	0.42	2.5		µg/L	5	4/30/2012 02:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 10:42:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Arsenic	2.7	0.17	0.50		µg/L	5	4/30/2012 02:51 PM
Manganese	56	0.16	0.50		µg/L	1	4/30/2012 04:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-186
Lab Order:	N007754	**Collection Date:**	4/26/2012 3:17:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120430A**	QC Batch: **39611**			PrepDate:	**4/27/2012**		Analyst: **CEI**
Arsenic	1.2	0.035	0.10		µg/L	1	4/30/2012 04:34 PM
Manganese	30	0.16	0.50		µg/L	1	4/30/2012 04:34 PM
Molybdenum	26	0.37	2.5		µg/L	5	4/30/2012 02:57 PM
Selenium	ND	0.42	2.5		µg/L	5	4/30/2012 02:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39611** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/27/2012** RunNo: **84158**
Client ID: **PBW** Batch ID: **39611** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2012** SeqNo: **1390560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39611** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/27/2012** RunNo: **84158**
Client ID: **LCSW** Batch ID: **39611** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2012** SeqNo: **1390561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	8.901	0.50	10.00	0	89.0	85	115				
Arsenic	9.263	0.10	10.00	0	92.6	85	115				
Manganese	99.115	0.50	100.0	0	99.1	85	115				
Molybdenum	9.735	0.50	10.00	0	97.3	85	115				
Selenium	9.762	0.50	10.00	0	97.6	85	115				
Thallium	9.838	0.50	10.00	0	98.4	85	115				

Sample ID: **N007723-004A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/27/2012** RunNo: **84158**
Client ID: **ZZZZZZ** Batch ID: **39611** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2012** SeqNo: **1390565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.300	2.5	10.00	0	103	75	125				

Sample ID: **N007723-004A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/27/2012** RunNo: **84158**
Client ID: **ZZZZZZ** Batch ID: **39611** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2012** SeqNo: **1390566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007723-004A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.340	2.5	10.00	0	103	75	125	10.30	0.389	20	

Sample ID: **N007723-004A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.665	0.50	10.00	0	96.7	75	125				
Arsenic	26.662	0.10	10.00	16.73	99.4	75	125				
Manganese	91.628	0.50	100.0	4.935	86.7	75	125				
Molybdenum	181.311	0.50	10.00	175.0	63.5	75	125				S
Selenium	10.116	0.50	10.00	0.2394	98.8	75	125				

Sample ID: **N007723-004A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2012**	RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**	SeqNo: **1390572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.725	0.50	10.00	0	97.3	75	125	9.665	0.619	20	
Arsenic	26.898	0.10	10.00	16.73	102	75	125	26.66	0.879	20	
Manganese	94.435	0.50	100.0	4.935	89.5	75	125	91.63	3.02	20	
Molybdenum	182.216	0.50	10.00	175.0	72.5	75	125	181.3	0.498	20	S
Selenium	10.391	0.50	10.00	0.2394	102	75	125	10.12	2.67	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-16-186
Lab Order:	N007754	**Collection Date:**	4/24/2012 3:56:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120503B**	QC Batch: **39667**			PrepDate:	**5/1/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	5/3/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *10-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-17-186
Lab Order:	N007754	**Collection Date:**	4/25/2012 12:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007754-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120503B**	QC Batch: **39667**			PrepDate:	**5/1/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	5/3/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39667**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/1/2012**	RunNo: **84206**
Client ID: **LCSW**	Batch ID: **39667**	TestNo: **EPA 7470A**		Analysis Date: **5/3/2012**	SeqNo: **1392122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.211	0.20	5.000	0	104	85	115				

Sample ID: **MB-39667**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/1/2012**	RunNo: **84206**
Client ID: **PBW**	Batch ID: **39667**	TestNo: **EPA 7470A**		Analysis Date: **5/3/2012**	SeqNo: **1392124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007754-001A-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/1/2012**	RunNo: **84206**
Client ID: **ZZZZZZ**	Batch ID: **39667**	TestNo: **EPA 7470A**		Analysis Date: **5/3/2012**	SeqNo: **1392126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.174	0.20	5.000	0.03100	103	75	125				

Sample ID: **N007754-001A-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/1/2012**	RunNo: **84206**
Client ID: **ZZZZZZ**	Batch ID: **39667**	TestNo: **EPA 7470A**		Analysis Date: **5/3/2012**	SeqNo: **1392127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.160	0.20	5.000	0.03100	103	75	125	5.174	0.266	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CH2MHILL **CHAIN OF CUSTODY RECORD** 4/27/2012 9:49:42 AM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/26/2012
COC Number: 7

				Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
				Filtered:	Field	Field	Field	Field	Field	NA	NA			
				Holding Time:	180	180	180	180	180	2	2			
	DATE	TIME	Matrix		Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Metals (SW6010B/SW6020Adis) Field Filtered AlSbAsBaBeBCaCdCoCuFePbMg	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COI
MW-16-186	4/24/2012	15:56	Water						X	X		1307B54 - 1	2	
MW-127-186	4/25/2012	7:25	Water							X		- 2	1	
MW-17-186	4/25/2012	12:08	Water						X	X		- 3	2	
MW-47-055-186	4/25/2012	13:44	Water		X	X				X		- 4	2	
MW-47-115-186	4/25/2012	10:30	Water							X		- 5	1	
MW-48-186	4/25/2012	15:30	Water							X		- 6	1	
MW-50-095-186	4/25/2012	14:54	Water							X		- 7	1	
MW-21-186	4/26/2012	8:20	Water				X			X	X	- 8	2	
MW-35-060-186	4/26/2012	11:42	Water		X			X		X	X	- 9	2	
MW-35-135-186	4/26/2012	13:21	Water				X			X	X	- 10	2	
MW-41D-186	4/26/2012	10:42	Water		X	X				X		- 11	2	
MW-63-065-186	4/26/2012	15:17	Water		X			X		X	X	- 12	2	
												TOTAL NUMBER OF CONTAINERS	20	

Signatures	Date/Time
Approved by	
Sampled by	4-26-12 1612
Relinquished by	
Received by	
Relinquished by	
Received by	

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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CH2MHILL **CHAIN OF CUSTODY RECORD** *4/26/2012 4:10:21 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/26/2012
COC Number: 7

				Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo.Se	Metals (6020AFF) Field Filtered Mo.Se.Mn	Metals (SW6010B/SW6020Adis) Field Filtered AlSbAsBaBeBCaCdCoCuFePbMg	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				Field	Field	Field	Field	Field	NA	NA			
Holding Time:				180	180	180	180	180	2	2			
	DATE	TIME	Matrix										
MW-16-186	4/24/2012	15:56	Water					X	X		Note: the metal's listed for samples MW-16-186 and MW-17-186	2	
MW-127-186	4/25/2012	7:25	Water						X		are incomplete.	1	
MW-17-186	4/25/2012	12:08	Water					X	X		Please report - Al,Sb,As,Ba,Be,B,Ca,Cd,Co,Cu,Fe,Pb,Mg,Mn,Hg,Mo,	2	
MW-47-055-186	4/25/2012	13:44	Water	X	X				X		Ni,Se,Ag,Tl,V, and Zn for samples MW-16-186 and MW-17-186.	2	
MW-47-115-186	4/25/2012	10:30	Water						X		Shawn P. Duffy 4-27-2012	1	
MW-48-186	4/25/2012	15:30	Water						X			1	
MW-50-095-186	4/25/2012	14:54	Water						X			1	
MW-21-186	4/26/2012	8:20	Water			X			X	X		2	
MW-35-060-186	4/26/2012	11:42	Water	X			X		X	X		2	
MW-35-135-186	4/26/2012	13:21	Water			X			X	X		2	
MW-41D-186	4/26/2012	10:42	Water	X	X				X			2	
											TOTAL NUMBER OF CONTAINERS	18	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		4-26-12 1612
Received by		
Relinquished by		4-26-12 1612
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/26/2012 4:10:21 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/26/2012
COC Number: 7

	Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
	Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
	Filtered:	Field	Field	Field	Field	Field	NA	NA			
	Holding Time:	180	180	180	180	180	2	2			
		Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Metals (SW6010B/SW6020Adis) Field Filtered AlSbAsBaBeBCaCdCoCuFePbMg	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-16-186	4/24/2012 15:56 Water					X	X			2	
MW-127-186	4/25/2012 7:25 Water						X			1	
MW-17-186	4/25/2012 12:08 Water					X	X			2	
MW-47-055-186	4/25/2012 13:44 Water	X	X				X			2	
MW-47-115-186	4/25/2012 10:30 Water						X			1	
MW-48-186	4/25/2012 15:30 Water						X			1	
MW-50-095-186	4/25/2012 14:54 Water						X			1	
MW-21-186	4/26/2012 8:20 Water			X			X	X		2	
MW-35-060-186	4/26/2012 11:42 Water	X			X		X	X		2	
MW-35-135-186	4/26/2012 13:21 Water			X			X	X		2	
MW-41D-186	4/26/2012 10:42 Water	X	X				X			2	
									TOTAL NUMBER OF CONTAINERS	18	

4.2°C

	Signatures	Date/Time
Approved by		4-26-12 1612
Sampled by		
Relinquished by		4-26-12 1612
Received by		4-26-12 1817
Relinquished by		4/26/12 1817
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: (yes) / no ICE 12#2
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/26/2012 Workorder: N007754

Rep sample Temp (Deg C): 4.2 IR Gun ID: 2

Temp Blank: ☐ Yes ☑ No

Carrier name: ATL

Last 4 digits of Tracking No.: na Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 4/28/12 Reviewed By:

Marlon Cartin

From: Shawn.Duffy@CH2M.com
Sent: Friday, April 27, 2012 11:36 AM
To: Marlon Cartin; Glen S. Gesmundo
Subject: RE: COC

Hi Marlon,

Attached is a corrected COC for the samples you received yesterday.

Shawn

From: Collom, Barry/RIV
Sent: Friday, April 27, 2012 10:15 AM
To: Marlon Cartin
Cc: Duffy, Shawn/RDD
Subject: COC

Hi Marlon,
The sample I added is called MW-63-065, please see that the analyst knows that this sample has nitrates to avoid missing it.

Thanks for your help with this, and sorry for the confusion.

Please let me know if you have ***any*** questions at all…

As a heads up, I think that Shawn may have some additions to one of the metals lists as well.

Thanks!

B.

Barry E. Collom
PG&E Topock Site Coordinator

CH2M HILL
1770 Iowa Ave. Suite 200
Riverside, CA 92507
Direct 760.326.2708
Fax 714.424.2022
Mobile 541.740.3250
Barry.Collom@ch2mhill.com

Privileged and Confidential

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007754-008B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0.879 * 2
	=	1.758 mg/L

Reporting **N007754-008B**, results in two significant figures,

Nitrate, mg/L	**=**	**1.8 mg/L**

AMS 5/3/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007754-001A**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.03152029929* 1* (25/25) * 1000

= 31.52029929 ug/L

Reporting results in two significant figures,

Barium, ug/L = 32

NS for JT 5/10

JT / ICP - 02 5/10/2012 1:19:50 AM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007754
Test Method: EPA 6010
Analysis Date: 5/1/2012, 5/8/2012

Matrix: Water
Batch No.: 39663

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007754-001A-DT 5x	Barium	ug/L	32.85334118	NA	31.52029929	-4.23%	10
N007754-001A-DT 5x	Beryllium	ug/L	0	NA	0	0.00%	10
N007754-001A-DT 5x	Boron	ug/L	314.86155	NA	318.623232	1.18%	10
N007754-001A-DT 5x	Cadmium	ug/L	0	NA	0	0.00%	10
N007754-001A-DT 5x	Antimony	ug/L	0	NA	0	0.00%	10
N007754-001A-DT 5x	Cobalt	ug/L	0	NA	0	0.00%	10
N007754-001A-DT 5x	Copper	ug/L	0	NA	0	0.00%	10
N007754-001A-DT 5x	Molybdenum	ug/L	14.71528066	NA	12.83082674	-14.69%	10
N007754-001A-DT 5x	Nickel	ug/L	0	NA	1.60308262	100.00%	10
N007754-001A-DT 5x	Lead	ug/L	0	NA	0	0.00%	10
N007754-001A-DT 5x	Magnesium	ug/L	5387.919145	PASSED	5102.565822	-5.59%	10
N007754-001A-DT 5x	Zinc	ug/L	0	NA	1.369263261	100.00%	10
N007754-001A-DT 25x	Potassium	ug/L	2727.513385	NA	3430.866646	20.50%	10
N007754-001A-DT 25x	Sodium	ug/L	166484.9194	PASSED	185603.5336	10.30%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007754
Test Method: EPA 6010
Analysis Date: 5/2/2012, 5/4/2012

Matrix: Water
Batch No.: 39680

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007754-001A-DT 5x	Aluminum	ug/L	100.7274724	NA	109.7436003	8.22%	10
N007754-001A-DT 5x	Iron	ug/L	0	NA	14.40393408	100.00%	10
N007754-001A-DT 5x	Silver	ug/L	0	NA	0.445870066	100.00%	10
N007754-001A-DT 5x	Vanadium	ug/L	36.57130055	NA	35.67171479	-2.52%	10
N007754-001A-DT 5x	Calcium	ug/L	27200.67859	PASSED	29641.71389	8.24%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007754-001A-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **84105**
Client ID: **ZZZZZZ** Batch ID: **39663** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/1/2012** SeqNo: **1389194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	249.622	20	250.0	0	99.8	75	125				
Barium	300.605	6.0	250.0	31.52	108	75	125				
Beryllium	261.769	2.0	250.0	0	105	75	125				
Boron	2857.695	200	2500	318.6	102	75	125				
Cadmium	251.149	6.0	250.0	0	100	75	125				
Cobalt	264.772	6.0	250.0	0	106	75	125				
Copper	252.235	10	250.0	0	101	75	125				
Lead	251.047	20	250.0	0	100	75	125				
Magnesium	10082.442	200	5000	5103	99.6	75	125				
Molybdenum	262.256	10	250.0	12.83	99.8	75	125				
Nickel	265.936	10	250.0	1.603	106	75	125				
Zinc	256.762	20	250.0	1.369	102	75	125				

Sample ID: **N007754-001A-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **84205**
Client ID: **ZZZZZZ** Batch ID: **39663** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/8/2012** SeqNo: **1392103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10320.826	2500	6250	3431	110	75	125				
Sodium	327978.867	2500	125000	185600	114	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: N007754-001A-PS	SampType: PS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date:	RunNo: 84108
Client ID: ZZZZZZ	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/2/2012	SeqNo: 1389282

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5392.573	100	5000	109.7	106	75	125				
Iron	5265.390	40	5000	14.40	105	75	125				
Silver	262.375	6.0	250.0	0.4459	105	75	125				
Vanadium	292.396	6.0	250.0	35.67	103	75	125				

Sample ID: N007754-001A-PS	SampType: PS	TestCode: 6010_WDPGE	Units: ug/L	Prep Date:	RunNo: 84202
Client ID: ZZZZZZ	Batch ID: 39680	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/4/2012	SeqNo: 1392015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	33494.882	1000	5000	29640	77.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007754-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L	=	10.5790 * 1 * (25/25)
	=	10.5790 ug/L

Reporting results in two significant figures,

Arsenic, ug/L	**=**	**11**

NS for SHM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007754
Test Method: EPA 6020
Analysis Date: 04/30/12

Matrix: Water
Batch No.: 39611

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn,Se & Tl, the calc. values were < 25X the RL. & PS @ 5X pass the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007723-004A-DT 5X	Arsenic	µg/L	16.923218	PASS	16.726624	-1.18%	10
N007723-004A-DT 5X	Manganese	µg/L	5.127905	NA	4.935348	-3.90%	10
N007723-004A-DT 5X	Molybdenum	µg/L	168.374904	PASS	174.961454	3.76%	10
N007723-004A-DT 5X	Selenium	µg/L	0.000000	NA	0.239429	100.00%	10
N007723-004A-DT 25X	Thallium	µg/L	0.000000	NA	0.000000		10

CLIENT: CH2M HILL
Work Order: N007754
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007723-004A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:		RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**		SeqNo: **1390564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	53.002	2.5	50.00	0	106	75	125				

Sample ID: **N007723-004A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:		RunNo: **84158**
Client ID: **ZZZZZZ**	Batch ID: **39611**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **4/30/2012**		SeqNo: **1390568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	37.693	0.20	20.00	16.73	105	75	125				
Manganese	190.955	1.0	200.0	4.935	93.0	75	125				
Molybdenum	190.599	1.0	20.00	175.0	78.2	75	125				
Selenium	21.033	1.0	20.00	0.2394	104	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007754-001A**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0.03 * 1 * (50/25) * 0.5
	=	0.03 ug/L

Reporting results in two significant figures,

Mercury, ug/L	**=**	**0.0**
Mercury, ug/L	**=**	**ND**

NS for 5/10/12

May 14, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007771

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 30, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007771

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *14-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007771
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007771-001A	MW-122-186	Water	4/30/2012 7:20:00 AM	4/30/2012	5/14/2012
N007771-001B	MW-122-186	Water	4/30/2012 7:20:00 AM	4/30/2012	5/14/2012
N007771-001C	MW-122-186	Water	4/30/2012 7:20:00 AM	4/30/2012	5/14/2012
N007771-002A	MW-23-060-186	Water	4/30/2012 3:03:00 PM	4/30/2012	5/14/2012
N007771-002B	MW-23-060-186	Water	4/30/2012 3:03:00 PM	4/30/2012	5/14/2012
N007771-002C	MW-23-060-186	Water	4/30/2012 3:03:00 PM	4/30/2012	5/14/2012
N007771-003A	MW-23-080-186	Water	4/30/2012 4:07:00 PM	4/30/2012	5/14/2012
N007771-003B	MW-23-080-186	Water	4/30/2012 4:07:00 PM	4/30/2012	5/14/2012
N007771-003C	MW-23-080-186	Water	4/30/2012 4:07:00 PM	4/30/2012	5/14/2012
N007771-004A	MW-33-090-186	Water	4/30/2012 9:35:00 AM	4/30/2012	5/14/2012
N007771-004B	MW-33-090-186	Water	4/30/2012 9:35:00 AM	4/30/2012	5/14/2012
N007771-005A	MW-57-185-186	Water	4/30/2012 1:04:00 PM	4/30/2012	5/14/2012
N007771-005B	MW-57-185-186	Water	4/30/2012 1:04:00 PM	4/30/2012	5/14/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 7:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120514B**	QC Batch: **R84260**			PrepDate:			Analyst: **KAB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	5/14/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 3:03:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120514B**	QC Batch: **R84260**			PrepDate:			Analyst: **KAB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	5/14/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 4:07:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120514B**	QC Batch: **R84260**			PrepDate:			Analyst: **KAB**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/14/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 9:35:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120514B**	QC Batch: **R84260**			PrepDate:			Analyst: **KAB**
Specific Conductance	8500	0.10	0.10		umhos/cm	1	5/14/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 1:04:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120514B**	QC Batch: **R84260**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/14/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **N007771-001C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84260**
Client ID: **ZZZZZZ** Batch ID: **R84260** TestNo: **EPA 120.1** Analysis Date: **5/14/2012** SeqNo: **1394454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14240.000	0.10						14230	0.0702	10	

Sample ID: **N007771-001C-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84260**
Client ID: **ZZZZZZ** Batch ID: **R84260** TestNo: **EPA 120.1** Analysis Date: **5/14/2012** SeqNo: **1394455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	112840.000	0.20	99900	14230	98.7	75	125				

Sample ID: **N007771-001C-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84260**
Client ID: **ZZZZZZ** Batch ID: **R84260** TestNo: **EPA 120.1** Analysis Date: **5/14/2012** SeqNo: **1394456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	112840.000	0.20	99900	14230	98.7	75	125	112800	0	10	

Sample ID: **LCS-R84260** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84260**
Client ID: **LCSW** Batch ID: **R84260** TestNo: **EPA 120.1** Analysis Date: **5/14/2012** SeqNo: **1394461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1420.000	0.10	1411	0	101	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 9:35:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120501A**	QC Batch: **R84230**			PrepDate:			Analyst: **QBM**
Fluoride	4.2	0.020	2.5		mg/L	5	5/1/2012 11:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120501A**	QC Batch: **R84230**			PrepDate:			Analyst: **QBM**
Nitrate as N	1.5	0.024	1.0		mg/L	2	5/1/2012 10:49 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 1:04:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120501A**	QC Batch: **R84230**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/1/2012 11:01 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R84230_F**	SampType: **MBLK**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **PBW**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R84230_F**	SampType: **LCS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **LCSW**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.380	0.50	2.500	0	95.2	90	110				

Sample ID: **N007771-004BDUP**	SampType: **DUP**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **ZZZZZZ**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	4.120	2.5						4.200	1.92	20	

Sample ID: **N007771-004BMS**	SampType: **MS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **ZZZZZZ**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	15.335	2.5	12.50	4.200	89.1	80	120				

Sample ID: **N007771-004BMSD**	SampType: **MSD**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **ZZZZZZ**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	15.195	2.5	12.50	4.200	88.0	80	120	15.34	0.917	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84230_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **PBW**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84230_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **LCSW**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.399	0.50	2.500	0	96.0	90	110				

Sample ID: **N007771-004BDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **ZZZZZZ**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.490	1.0						1.518	1.86	20	

Sample ID: **N007771-004BMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **ZZZZZZ**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	6.446	1.0	5.000	1.518	98.6	80	120				

Sample ID: **N007771-004BMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84230**
Client ID: **ZZZZZZ**	Batch ID: **R84230**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2012**	SeqNo: **1393148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	6.384	1.0	5.000	1.518	97.3	80	120	6.446	0.966	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 7:20:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120503A**	QC Batch: **39678**			PrepDate:		**5/2/2012**	Analyst: **CEI**
Arsenic	2.2	0.17	0.50		µg/L	5	5/3/2012 11:57 AM
Manganese	ND	0.80	2.5		µg/L	5	5/3/2012 11:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 3:03:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120503A**	QC Batch: **39678**			PrepDate:	**5/2/2012**		Analyst: **CEI**
Arsenic	2.6	0.17	0.50		µg/L	5	5/3/2012 12:27 PM
Manganese	ND	0.80	2.5		µg/L	5	5/3/2012 12:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT: CH2M HILL
Lab Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007771-003

Client Sample ID: MW-23-080-186
Collection Date: 4/30/2012 4:07:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120503A**	QC Batch: **39678**			PrepDate:	**5/2/2012**		Analyst: **CEI**
Arsenic	4.1	0.86	2.5		µg/L	25	5/3/2012 02:24 PM
Manganese	ND	4.0	12		µg/L	25	5/3/2012 02:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-186
Lab Order:	N007771	**Collection Date:**	4/30/2012 9:35:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007771-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120503A**	QC Batch: **39678**				PrepDate:	**5/2/2012**	Analyst: **CEI**
Manganese	ND	0.80	2.5		µg/L	5	5/3/2012 01:00 PM
Molybdenum	20	0.37	2.5		µg/L	5	5/3/2012 01:00 PM
Selenium	ND	0.42	2.5		µg/L	5	5/3/2012 01:00 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *14-May-12*

CLIENT: CH2M HILL
Lab Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007771-005

Client Sample ID: MW-57-185-186
Collection Date: 4/30/2012 1:04:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120503A**	QC Batch: **39678**				PrepDate:	**5/2/2012**	Analyst: **CEI**
Arsenic	14	0.17	0.50		µg/L	5	5/3/2012 01:06 PM
Manganese	470	0.80	2.5		µg/L	5	5/3/2012 01:06 PM
Molybdenum	93	0.37	2.5		µg/L	5	5/3/2012 01:06 PM
Selenium	ND	0.42	2.5		µg/L	5	5/3/2012 01:06 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39678**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **PBW**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39678**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **LCSW**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.299	0.10	10.00	0	93.0	85	115				
Manganese	98.630	0.50	100.0	0	98.6	85	115				
Molybdenum	9.651	0.50	10.00	0	96.5	85	115				
Selenium	9.348	0.50	10.00	0	93.5	85	115				

Sample ID: **N007771-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.689	0.50	10.00	2.249	104	75	125				
Manganese	91.616	2.5	100.0	0	91.6	75	125				
Selenium	15.144	2.5	10.00	4.846	103	75	125				

Sample ID: **N007771-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.873	0.50	10.00	2.249	106	75	125	12.69	1.44	20	
Manganese	91.091	2.5	100.0	0	91.1	75	125	91.62	0.575	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007771-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	14.374	2.5	10.00	4.846	95.3	75	125	15.14	5.22	20	

Sample ID: **N007771-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	26.949	12	10.00	15.69	113	75	125				

Sample ID: **N007771-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	26.336	12	10.00	15.69	106	75	125	26.95	2.30	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/30/2012 4:26:56 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 4/30/2012
COC Number: 9

				Container:	1Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
				Filtered:	NA	Field	Field	Field	NA	NA	NA			
				Holding Time:	30	180	180	180	2	2	2			
	DATE	TIME	Matrix		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-122-186	4/30/2012	7:20	Water		X	X	X		X			N0077771 - 1	3	
MW-23-060-186	4/30/2012	15:03	Water		X	X	X		X			- 2	3	
MW-23-080-186	4/30/2012	16:07	Water		X	X	X		X			- 3	3	
MW-33-090-186	4/30/2012	9:35	Water					X	X		X	- 4	2	
MW-57-185-186	4/30/2012	13:04	Water			X		X	X	X		- 5	2	
												TOTAL NUMBER OF CONTAINERS	13	

	Signatures	Date/Time
Approved by		4-30-12 1641
Sampled by		
Relinquished by		
Received by		4/30/12 @1647
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: yes / no 4.0°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/30/2012	Workorder:	N007771
Rep sample Temp (Deg C):	4	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/1/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Fluoride concentration, in mg/L, in the original sample as follows:

Fluoride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007771-004B**, concentration in mg/L are calculated as follows:

Fluoride, mg/L = 0.840 * 5

= 4.2 mg/L

Reporting **N007771-004B**, results in two significant figures,

Fluoride, mg/L = 4.2 mg/L

JMS 5/14/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007771-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.449836506410738* 5 * (25/25)

= 2.249183 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 2.2

MJ for 5/14/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007771
Test Method: EPA 6020
Analysis Date: 05/03/12

Matrix: Water
Batch No.: 39678

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn and Se, the calc. values were < 25X the RL. PS @ 25X passes the criteria
Dilution Test for As and Mo outside limits, PS passed criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007771-001B-DT 25X	Arsenic	µg/L	2.665984982	FAIL	2.249182532	-18.53%	10
N007771-001B-DT 25X	Manganese	µg/L	0	NA	0		10
N007771-001B-DT 25X	Selenium	µg/L	5.205628469	NA	4.846009869	-7.42%	10
N007771-001B-DT 125X	Molybdenum	µg/L	18.5530051	FAIL	15.69266727	-18.23%	10

CLIENT: CH2M HILL
Work Order: N007771
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007771-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **84126**			
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**			SeqNo: **1389651**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	57.040	0.50	50.00	2.249	110	75	125				
Manganese	477.073	2.5	500.0	0	95.4	75	125				
Selenium	54.201	2.5	50.00	4.846	98.7	75	125				

Sample ID: **N007771-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **84126**			
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**			SeqNo: **1389674**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	297.496	12	250.0	15.69	113	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

May 15, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007785

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 01, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007785

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *15-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007785
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007785-001A	MW-121-186	Water	5/1/2012 7:25:00 AM	5/1/2012	5/15/2012
N007785-002A	MW-19-186	Water	5/1/2012 2:31:00 PM	5/1/2012	5/15/2012
N007785-003A	MW-65-160-186	Water	5/1/2012 11:34:00 AM	5/1/2012	5/15/2012
N007785-003B	MW-65-160-186	Water	5/1/2012 11:34:00 AM	5/1/2012	5/15/2012
N007785-003C	MW-65-160-186	Water	5/1/2012 11:34:00 AM	5/1/2012	5/15/2012
N007785-004A	MW-70-105-186	Water	5/1/2012 8:21:00 AM	5/1/2012	5/15/2012
N007785-004B	MW-70-105-186	Water	5/1/2012 8:21:00 AM	5/1/2012	5/15/2012
N007785-004C	MW-70-105-186	Water	5/1/2012 8:21:00 AM	5/1/2012	5/15/2012
N007785-005A	MW-72-080-186	Water	5/1/2012 1:05:00 PM	5/1/2012	5/15/2012
N007785-005B	MW-72-080-186	Water	5/1/2012 1:05:00 PM	5/1/2012	5/15/2012
N007785-005C	MW-72-080-186	Water	5/1/2012 1:05:00 PM	5/1/2012	5/15/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 7:25:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120501B**	QC Batch: **R84161**			PrepDate:			Analyst: **MCS**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	5/1/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120501B**	QC Batch: **R84161**			PrepDate:			Analyst: **MCS**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	5/1/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 11:34:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120501B**	QC Batch: **R84161**			PrepDate:			Analyst: **MCS**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	5/1/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 8:21:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120501B**	QC Batch: **R84161**			PrepDate:			Analyst: **MCS**
Specific Conductance	3000	0.10	0.10		umhos/cm	1	5/1/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 1:05:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120501B**	QC Batch: **R84161**			PrepDate:			Analyst: **MCS**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/1/2012

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007785
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84161**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84161**
Client ID: **LCSW**	Batch ID: **R84161**	TestNo: **EPA 120.1**		Analysis Date: **5/1/2012**	SeqNo: **1390654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1415.000	0.10	1411	0	100	85	115				

Sample ID: **N007785-001A-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84161**
Client ID: **ZZZZZZ**	Batch ID: **R84161**	TestNo: **EPA 120.1**		Analysis Date: **5/1/2012**	SeqNo: **1390656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2130.000	0.10						2120	0.471	10	

Sample ID: **N007785-001A-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84161**
Client ID: **ZZZZZZ**	Batch ID: **R84161**	TestNo: **EPA 120.1**		Analysis Date: **5/1/2012**	SeqNo: **1390657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12780.000	0.20	9977	2120	107	75	125				

Sample ID: **N007785-001A-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84161**
Client ID: **ZZZZZZ**	Batch ID: **R84161**	TestNo: **EPA 120.1**		Analysis Date: **5/1/2012**	SeqNo: **1390658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12800.000	0.20	9977	2120	107	75	125	12780	0.156	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 11:34:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120502A**	QC Batch: **R84246**			PrepDate:			Analyst: **QBM**
Nitrate as N	8.0	0.024	1.0		mg/L	2	5/2/2012 10:41 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 8:21:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120502A**	QC Batch: **R84246**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.0	0.012	0.50		mg/L	1	5/2/2012 10:52 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 1:05:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120502A**	QC Batch: **R84246**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/2/2012 11:04 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007785
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84246_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84246**
Client ID: **PBW** Batch ID: **R84246** TestNo: **EPA 300.0** Analysis Date: **5/2/2012** SeqNo: **1393806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84246_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84246**
Client ID: **LCSW** Batch ID: **R84246** TestNo: **EPA 300.0** Analysis Date: **5/2/2012** SeqNo: **1393807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.378	0.50	2.500	0	95.1	90	110				

Sample ID: **N007782-003CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84246**
Client ID: **ZZZZZZ** Batch ID: **R84246** TestNo: **EPA 300.0** Analysis Date: **5/2/2012** SeqNo: **1393821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.645	2.5	12.50	8.245	99.2	80	120				

Sample ID: **N007782-003CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84246**
Client ID: **ZZZZZZ** Batch ID: **R84246** TestNo: **EPA 300.0** Analysis Date: **5/2/2012** SeqNo: **1393822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.615	2.5	12.50	8.245	99.0	80	120	20.65	0.145	20	

Sample ID: **N007782-005CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84246**
Client ID: **ZZZZZZ** Batch ID: **R84246** TestNo: **EPA 300.0** Analysis Date: **5/2/2012** SeqNo: **1393823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.468	1.0						7.364	1.40	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007785
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007783-002CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84246**
Client ID: **ZZZZZZ**	Batch ID: **R84246**	TestNo: **EPA 300.0**		Analysis Date: **5/2/2012**	SeqNo: **1393826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.800	2.5	12.50	8.460	98.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 11:34:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120508A**	QC Batch: **39678**			PrepDate:	**5/2/2012**		Analyst: **CEI**
Arsenic	0.96	0.17	0.50		µg/L	5	5/8/2012 07:03 PM
Manganese	140	0.80	2.5		µg/L	5	5/3/2012 01:12 PM
Molybdenum	31	0.37	2.5		µg/L	5	5/3/2012 01:12 PM
Selenium	7.1	0.42	2.5		µg/L	5	5/3/2012 01:12 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *15-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 8:21:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120503A**	QC Batch: **39678**				PrepDate:	**5/2/2012**	Analyst: **CEI**
Arsenic	5.4	0.035	0.10		µg/L	1	5/3/2012 05:04 PM
Manganese	220	0.80	2.5		µg/L	5	5/3/2012 01:18 PM
Molybdenum	120	0.37	2.5		µg/L	5	5/3/2012 01:18 PM
Selenium	2.0	0.084	0.50		µg/L	1	5/3/2012 05:04 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-186
Lab Order:	N007785	**Collection Date:**	5/1/2012 1:05:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007785-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120503A**	QC Batch: **39678**			PrepDate:	**5/2/2012**		Analyst: **CEI**
Arsenic	9.7	0.17	0.50		µg/L	5	5/3/2012 01:24 PM
Manganese	210	0.80	2.5		µg/L	5	5/3/2012 01:24 PM
Molybdenum	75	0.37	2.5		µg/L	5	5/3/2012 01:24 PM
Selenium	ND	0.42	2.5		µg/L	5	5/3/2012 01:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007785
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39678**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **PBW**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39678**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **LCSW**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.299	0.10	10.00	0	93.0	85	115				
Manganese	98.630	0.50	100.0	0	98.6	85	115				
Molybdenum	9.651	0.50	10.00	0	96.5	85	115				
Selenium	9.348	0.50	10.00	0	93.5	85	115				

Sample ID: **N007771-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.689	0.50	10.00	2.249	104	75	125				
Manganese	91.616	2.5	100.0	0	91.6	75	125				
Selenium	15.144	2.5	10.00	4.846	103	75	125				

Sample ID: **N007771-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.873	0.50	10.00	2.249	106	75	125	12.69	1.44	20	
Manganese	91.091	2.5	100.0	0	91.1	75	125	91.62	0.575	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007785
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007771-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	14.374	2.5	10.00	4.846	95.3	75	125	15.14	5.22	20	

Sample ID: **N007771-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	26.949	12	10.00	15.69	113	75	125				

Sample ID: **N007771-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2012**	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	26.336	12	10.00	15.69	106	75	125	26.95	2.30	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/1/2012 3:58:50 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/1/2012
COC Number: 10

Container:				1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				NA	Field	Field	NA	NA			
Holding Time:				30	180	180	2	2			
	DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	N007785	Number of Containers	COMMENTS
MW-121-186	5/1/2012	7:25	Water				X		-1	1	
MW-19-186	5/1/2012	14:31	Water				X		-2	1	
MW-65-160-186	5/1/2012	11:34	Water	X	X	X	X	X	-3	3	
MW-70-105-186	5/1/2012	8:21	Water	X	X	X	X	X	-4	3	
MW-72-080-186	5/1/2012	13:05	Water	X	X	X	X	X	-5	3	
									TOTAL NUMBER OF CONTAINERS	11	

	Signatures	Date/Time
Approved by		5-1-12
Sampled by		1605
Relinquished by		
Received by		5.1.12 16:05
Relinquished by		5.1.12 1812
Received by	MCGARTIN	5/1/12 @ 1812

Shipping Details
Method of Shipment: courier
On Ice: yes / no 4.6°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marion

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/1/2012	Workorder:	N007785
Rep sample Temp (Deg C):	4.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/2/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007785-003C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	3.999 * 2
	=	7.998 mg/L

Reporting **N007785-001C**, results in two significant figures,

Nitrate, mg/L	**=**	**8.0 mg/L**

CMB 5/15/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007785-005B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.94762 * 5 * (25/25)

= 9.738107ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 9.7

NS for JH

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007785
Test Method: EPA 6020
Analysis Date: 05/03/12

Matrix: Water
Batch No.: 39678

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn and Se, the calc. values were < 25X the RL. PS @ 25X passes the criteria
Dilution Test for As and Mo outside limits, PS passed criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007771-001B-DT 25X	Arsenic	µg/L	2.665984982	FAIL	2.249182532	-18.53%	10
N007771-001B-DT 25X	Manganese	µg/L	0	NA	0		10
N007771-001B-DT 25X	Selenium	µg/L	5.205628469	NA	4.846009869	-7.42%	10
N007771-001B-DT 125X	Molybdenum	µg/L	18.5530051	FAIL	15.69266727	-18.23%	10

CLIENT: CH2M HILL
Work Order: N007785
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007771-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	57.040	0.50	50.00	2.249	110	75	125				
Manganese	477.073	2.5	500.0	0	95.4	75	125				
Selenium	54.201	2.5	50.00	4.846	98.7	75	125				

Sample ID: **N007771-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84126**
Client ID: **ZZZZZZ**	Batch ID: **39678**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2012**	SeqNo: **1389674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	297.496	12	250.0	15.69	113	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

May 16, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007790

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 02, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007790

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020:

Dilution was necessary on samples due to failing internal standards.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2694*

Advanced Technology Laboratories, Inc.

Date: *16-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007790
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007790-001A	MW-62-065-186	Water	5/2/2012 3:12:00 PM	5/2/2012	5/16/2012
N007790-001B	MW-62-065-186	Water	5/2/2012 3:12:00 PM	5/2/2012	5/16/2012
N007790-002A	MW-65-225-186	Water	5/2/2012 7:48:00 AM	5/2/2012	5/16/2012
N007790-002B	MW-65-225-186	Water	5/2/2012 7:48:00 AM	5/2/2012	5/16/2012
N007790-002C	MW-65-225-186	Water	5/2/2012 7:48:00 AM	5/2/2012	5/16/2012
N007790-003A	MW-66-165-186	Water	5/2/2012 1:10:00 PM	5/2/2012	5/16/2012
N007790-003B	MW-66-165-186	Water	5/2/2012 1:10:00 PM	5/2/2012	5/16/2012
N007790-003C	MW-66-165-186	Water	5/2/2012 1:10:00 PM	5/2/2012	5/16/2012
N007790-004A	MW-69-195-186	Water	5/2/2012 10:40:00 AM	5/2/2012	5/16/2012
N007790-004B	MW-69-195-186	Water	5/2/2012 10:40:00 AM	5/2/2012	5/16/2012
N007790-004C	MW-69-195-186	Water	5/2/2012 10:40:00 AM	5/2/2012	5/16/2012
N007790-005A	MW-71-035-186A	Water	5/2/2012 3:35:00 PM	5/2/2012	5/16/2012
N007790-005B	MW-71-035-186A	Water	5/2/2012 3:35:00 PM	5/2/2012	5/16/2012
N007790-005C	MW-71-035-186A	Water	5/2/2012 3:35:00 PM	5/2/2012	5/16/2012
N007790-006A	MW-73-080-186	Water	5/2/2012 8:26:00 AM	5/2/2012	5/16/2012
N007790-006B	MW-73-080-186	Water	5/2/2012 8:26:00 AM	5/2/2012	5/16/2012
N007790-006C	MW-73-080-186	Water	5/2/2012 8:26:00 AM	5/2/2012	5/16/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2695

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 3:12:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120502F**	QC Batch: **R84171**			PrepDate:			Analyst: **KAB**
Specific Conductance	6600	0.10	0.10		umhos/cm	1	5/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 7:48:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120502F**	QC Batch: **R84171**			PrepDate:			Analyst: **KAB**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 1:10:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120502F**	QC Batch: **R84171**			PrepDate:			Analyst: **KAB**
Specific Conductance	4600	0.10	0.10		umhos/cm	1	5/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 10:40:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120502F**	QC Batch: **R84171**			PrepDate:			Analyst: **KAB**
Specific Conductance	3800	0.10	0.10		umhos/cm	1	5/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-186A
Lab Order:	N007790	**Collection Date:**	5/2/2012 3:35:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120502F**	QC Batch: **R84171**				PrepDate:		Analyst: **KAB**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	5/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 8:26:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120502F**	QC Batch: **R84171**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84171**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84171**
Client ID: **LCSW**	Batch ID: **R84171**	TestNo: **EPA 120.1**		Analysis Date: **5/2/2012**	SeqNo: **1390921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1410.000	0.10	1411	0	99.9	85	115				

Sample ID: **N007790-004C-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84171**
Client ID: **ZZZZZZ**	Batch ID: **R84171**	TestNo: **EPA 120.1**		Analysis Date: **5/2/2012**	SeqNo: **1390926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3770.000	0.10						3770	0	10	

Sample ID: **N007790-004C-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84171**
Client ID: **ZZZZZZ**	Batch ID: **R84171**	TestNo: **EPA 120.1**		Analysis Date: **5/2/2012**	SeqNo: **1390927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14260.000	0.20	9977	3770	105	75	125				

Sample ID: **N007790-004C-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84171**
Client ID: **ZZZZZZ**	Batch ID: **R84171**	TestNo: **EPA 120.1**		Analysis Date: **5/2/2012**	SeqNo: **1390928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14260.000	0.20	9977	3770	105	75	125	14260	0	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 3:12:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120503A**	QC Batch: **R84275**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.9	0.024	1.0		mg/L	2	5/3/2012 10:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 7:48:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120503A**	QC Batch: **R84275**			PrepDate:			Analyst: **QBM**
Nitrate as N	5.0	0.060	2.5		mg/L	5	5/3/2012 10:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 1:10:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120503A**	QC Batch: **R84275**			PrepDate:			Analyst: **QBM**
Nitrate as N	30	0.12	5.0		mg/L	10	5/3/2012 10:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 10:40:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120503A**	QC Batch: **R84275**			PrepDate:			Analyst: **QBM**
Nitrate as N	19	0.12	5.0		mg/L	10	5/3/2012 10:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-186A
Lab Order:	N007790	**Collection Date:**	5/2/2012 3:35:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120503A**	QC Batch: **R84275**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/3/2012 11:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 8:26:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120503A**	QC Batch: **R84275**			PrepDate:			Analyst: **QBM**
Nitrate as N	4.8	0.060	2.5		mg/L	5	5/3/2012 11:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84275_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84275**
Client ID: **PBW**	Batch ID: **R84275**	TestNo: **EPA 300.0**		Analysis Date: **5/3/2012**	SeqNo: **1394918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84275_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84275**
Client ID: **LCSW**	Batch ID: **R84275**	TestNo: **EPA 300.0**		Analysis Date: **5/3/2012**	SeqNo: **1394919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.376	0.50	2.500	0	95.0	90	110				

Sample ID: **N007793-001CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84275**
Client ID: **ZZZZZZ**	Batch ID: **R84275**	TestNo: **EPA 300.0**		Analysis Date: **5/3/2012**	SeqNo: **1394943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	4.122	0.50	2.500	1.535	103	80	120				

Sample ID: **N007793-001CMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84275**
Client ID: **ZZZZZZ**	Batch ID: **R84275**	TestNo: **EPA 300.0**		Analysis Date: **5/3/2012**	SeqNo: **1394944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	4.039	0.50	2.500	1.535	100	80	120	4.122	2.03	20	

Sample ID: **N007793-003CDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84275**
Client ID: **ZZZZZZ**	Batch ID: **R84275**	TestNo: **EPA 300.0**		Analysis Date: **5/3/2012**	SeqNo: **1394945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.881	0.50						2.842	1.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007793-006CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84275**
Client ID: **ZZZZZZ** Batch ID: **R84275** TestNo: **EPA 300.0** Analysis Date: **5/3/2012** SeqNo: **1394947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	4.100	0.50	2.500	1.521	103	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 3:12:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	1.8	0.17	0.50		µg/L	5	5/14/2012 11:20 AM
Manganese	4.2	0.80	2.5		µg/L	5	5/12/2012 09:51 AM
Molybdenum	18	0.37	2.5		µg/L	5	5/12/2012 09:51 AM
Selenium	ND	0.42	2.5		µg/L	5	5/12/2012 09:51 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 7:48:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	2.2	0.17	0.50		µg/L	5	5/14/2012 11:50 AM
Manganese	140	0.80	2.5		µg/L	5	5/12/2012 10:21 AM
Molybdenum	38	0.37	2.5		µg/L	5	5/12/2012 10:21 AM
Selenium	4.1	0.42	2.5		µg/L	5	5/12/2012 10:21 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-186
Lab Order:	N007790	**Collection Date:**	5/2/2012 1:10:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**				PrepDate:	**5/8/2012**	Analyst: **CEI**
Arsenic	1.3	0.17	0.50		µg/L	5	5/14/2012 11:56 AM
Manganese	ND	0.80	2.5		µg/L	5	5/12/2012 10:27 AM
Molybdenum	7.4	0.37	2.5		µg/L	5	5/12/2012 10:27 AM
Selenium	43	0.42	2.5		µg/L	5	5/12/2012 10:27 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007790-004

Client Sample ID: MW-69-195-186
Collection Date: 5/2/2012 10:40:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	2.1	0.17	0.50		µg/L	5	5/14/2012 12:02 PM
Manganese	6.7	0.80	2.5		µg/L	5	5/12/2012 10:33 AM
Molybdenum	46	0.37	2.5		µg/L	5	5/12/2012 10:33 AM
Selenium	15	0.42	2.5		µg/L	5	5/12/2012 10:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *16-May-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-186A
Lab Order:	N007790	**Collection Date:**	5/2/2012 3:35:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007790-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**				PrepDate:	**5/8/2012**	Analyst: **CEI**
Arsenic	1.7	0.17	0.50		µg/L	5	5/14/2012 12:20 PM
Manganese	65	0.80	2.5		µg/L	5	5/12/2012 10:51 AM
Molybdenum	91	0.37	2.5		µg/L	5	5/12/2012 10:51 AM
Selenium	ND	0.42	2.5		µg/L	5	5/12/2012 10:51 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007790-006

Client Sample ID: MW-73-080-186
Collection Date: 5/2/2012 8:26:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	1.4	0.17	0.50		µg/L	5	5/14/2012 12:26 PM
Manganese	33	0.80	2.5		µg/L	5	5/12/2012 10:57 AM
Molybdenum	23	0.37	2.5		µg/L	5	5/12/2012 10:57 AM
Selenium	5.4	0.42	2.5		µg/L	5	5/12/2012 10:57 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39699**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **PBW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39699**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **LCSW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.064	0.50	100.0	0	96.1	85	115				
Molybdenum	9.492	0.50	10.00	0	94.9	85	115				
Selenium	9.242	0.50	10.00	0	92.4	85	115				

Sample ID: **N007790-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.636	2.5	100.0	4.172	89.5	75	125				
Molybdenum	28.420	2.5	10.00	18.40	100	75	125				
Selenium	11.335	2.5	10.00	2.278	90.6	75	125				

Sample ID: **N007790-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.081	2.5	100.0	4.172	91.9	75	125	93.64	2.58	20	
Molybdenum	29.635	2.5	10.00	18.40	112	75	125	28.42	4.19	20	
Selenium	12.172	2.5	10.00	2.278	98.9	75	125	11.34	7.12	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39699**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **PBW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Sample ID: **LCS-39699**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **LCSW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.051	0.10	10.00	0	90.5	85	115				

Sample ID: **N007790-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.675	0.50	10.00	1.755	99.2	75	125				

Sample ID: **N007790-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.881	0.50	10.00	1.755	101	75	125	11.68	1.75	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CH2MHILL **CHAIN OF CUSTODY RECORD** *5/2/2012 4:42:20 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/2/2012
COC Number: 11

				Container:	1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
				Filtered:	NA	Field	Field	NA	NA			
				Holding Time:	30	180	180	2	2			
	DATE	TIME	Matrix		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-62-065-186	5/2/2012	15:12	Water		X	X	X	X		K1007790-1	2	
MW-65-225-186	5/2/2012	7:48	Water	X	X	X	X	X		-2	3	
MW-66-165-186	5/2/2012	13:10	Water	X	X	X	X	X		-3	3	
MW-69-195-186	5/2/2012	10:40	Water	X	X	X	X	X		-4	3	
MW-71-035-186A	5/2/2012	15:35	Water	X	X	X	X	X		-5	3	
MW-73-080-186	5/2/2012	8:26	Water	X	X	X	X	X		-6	3	
										TOTAL NUMBER OF CONTAINERS	17	

	Signatures	Date/Time
Approved by		
Sampled by		5-2-12 1643
Relinquished by		
Received by		5/2/12 1645
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) no 1.7°C
Airbill No: ICE IRR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

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Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/2/2012	Workorder:	N007790
Rep sample Temp (Deg C):	1.7	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/3/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007790-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 1.447 * 2

= 2.894 mg/L

Reporting **N007790-001B**, results in two significant figures,

Nitrate, mg/L = 2.9 mg/L

5/16/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007790-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.35107328663 * 5 * (25/25)

= 1.75536643315 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.8

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007790
Test Method: EPA 6020
Analysis Date: 5/12/2012, 5/14/2012

Matrix: Water
Batch No.: 39699

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn, Se and As, the calc. values were < 25X the RL. PS @ 25X passes the criteria

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007790-001A-DT 25X	Manganese	µg/L	4.362029076	NA	4.171533795	-4.57%	10
N007790-001A-DT 25X	Selenium	µg/L	0	NA	2.278437785	100.00%	10
N007790-001A-DT 25X	Molybdenum	µg/L	18.53864734	PASS	18.40265784	-0.74%	10
N007790-001A-DT 25X	Arsenic	µg/L	1.954460091	NA	1.755366433	-11.34%	10

CLIENT: CH2M HILL
Work Order: N007790
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007790-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	528.088	2.5	500.0	4.172	105	75	125				
Molybdenum	77.832	2.5	50.00	18.40	119	75	125				
Selenium	57.683	2.5	50.00	2.278	111	75	125				

Sample ID: **N007790-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	59.670	0.50	50.00	1.755	116	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

May 18, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N007798

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 03, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

Advanced Technology Laboratories, Inc. **Date:** *18-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007798

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Dioxins/ Furans by EPA 8290 was subcontracted to APPL,Inc.- Clovis,CA.

Analytical Comments for EPA 6020:

Dilution was necessary due to failing internal standards at no dilution.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *18-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007798
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007798-001A	MW-57-070-186	Water	5/3/2012 8:33:00 AM	5/3/2012	5/18/2012
N007798-001B	MW-57-070-186	Water	5/3/2012 8:33:00 AM	5/3/2012	5/18/2012
N007798-002A	MW-60-125-186	Water	5/3/2012 11:17:00 AM	5/3/2012	5/18/2012
N007798-002B	MW-60-125-186	Water	5/3/2012 11:17:00 AM	5/3/2012	5/18/2012
N007798-003A	MW-61-110-186	Water	5/3/2012 9:43:00 AM	5/3/2012	5/18/2012
N007798-003B	MW-61-110-186	Water	5/3/2012 9:43:00 AM	5/3/2012	5/18/2012
N007798-004A	MW-67-185-186	Water	5/3/2012 2:31:00 PM	5/3/2012	5/18/2012
N007798-004B	MW-67-185-186	Water	5/3/2012 2:31:00 PM	5/3/2012	5/18/2012
N007798-004C	MW-67-185-186	Water	5/3/2012 2:31:00 PM	5/3/2012	5/18/2012
N007798-005A	MW-68-240-186	Water	5/3/2012 1:29:00 PM	5/3/2012	5/18/2012
N007798-005B	MW-68-240-186	Water	5/3/2012 1:29:00 PM	5/3/2012	5/18/2012
N007798-005C	MW-68-240-186	Water	5/3/2012 1:29:00 PM	5/3/2012	5/18/2012
N007798-006A	MW-71-035-186B	Water	5/3/2012 3:20:00 PM	5/3/2012	5/18/2012
N007798-007A	AB-01-186	Water	5/3/2012 3:25:00 PM	5/3/2012	5/18/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2695

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 8:33:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120504A**	QC Batch: **R84164**			PrepDate:			Analyst: **KAB**
Specific Conductance	2600	0.10	0.10		umhos/cm	1	5/4/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 11:17:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120504A**	QC Batch: **R84164**			PrepDate:			Analyst: **KAB**
Specific Conductance	8400	0.10	0.10		umhos/cm	1	5/4/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 9:43:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120504A**	QC Batch: **R84164**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/4/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120504A**	QC Batch: **R84164**			PrepDate:			Analyst: **KAB**
Specific Conductance	4400	0.10	0.10		umhos/cm	1	5/4/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 1:29:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120504A**	QC Batch: **R84164**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/4/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007798
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84164**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **84164**		
Client ID: **LCSW**	Batch ID: **R84164**	TestNo: **EPA 120.1**		Analysis Date: **5/4/2012**				SeqNo: **1390679**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1400.000	0.10	1414	0	99.0	85	115				

Sample ID: **N007798-001B-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **84164**		
Client ID: **ZZZZZZ**	Batch ID: **R84164**	TestNo: **EPA 120.1**		Analysis Date: **5/4/2012**				SeqNo: **1390681**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2580.000	0.10						2580	0	10	

Sample ID: **N007798-001B-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **84164**		
Client ID: **ZZZZZZ**	Batch ID: **R84164**	TestNo: **EPA 120.1**		Analysis Date: **5/4/2012**				SeqNo: **1390682**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12280.000	0.20	9977	2580	97.2	75	125				

Sample ID: **N007798-001B-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **84164**		
Client ID: **ZZZZZZ**	Batch ID: **R84164**	TestNo: **EPA 120.1**		Analysis Date: **5/4/2012**				SeqNo: **1390683**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12280.000	0.20	9977	2580	97.2	75	125	12280	0	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 8:33:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120504A**	QC Batch: **R84282**			PrepDate:			Analyst: **QBM**
Nitrate as N	5.2	0.060	2.5		mg/L	5	5/4/2012 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 11:17:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120504A**	QC Batch: **R84282**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.0	0.060	2.5		mg/L	5	5/4/2012 09:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 9:43:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120504A**	QC Batch: **R84282**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/4/2012 10:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120504A**	QC Batch: **R84282**			PrepDate:			Analyst: **QBM**
Nitrate as N	19	0.060	2.5		mg/L	5	5/4/2012 10:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 1:29:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120504A**	QC Batch: **R84282**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.6	0.060	2.5		mg/L	5	5/4/2012 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007798
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84282_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84282**
Client ID: **PBW**	Batch ID: **R84282**	TestNo: **EPA 300.0**		Analysis Date: **5/4/2012**	SeqNo: **1395620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84282_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84282**
Client ID: **LCSW**	Batch ID: **R84282**	TestNo: **EPA 300.0**		Analysis Date: **5/4/2012**	SeqNo: **1395621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.331	0.50	2.500	0	93.2	90	110				

Sample ID: **N007799-003CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84282**
Client ID: **ZZZZZZ**	Batch ID: **R84282**	TestNo: **EPA 300.0**		Analysis Date: **5/4/2012**	SeqNo: **1395646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	22.160	2.5	12.50	9.530	101	80	120				

Sample ID: **N007799-003CMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84282**
Client ID: **ZZZZZZ**	Batch ID: **R84282**	TestNo: **EPA 300.0**		Analysis Date: **5/4/2012**	SeqNo: **1395647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	22.305	2.5	12.50	9.530	102	80	120	22.16	0.652	20	

Sample ID: **N007799-004CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84282**
Client ID: **ZZZZZZ**	Batch ID: **R84282**	TestNo: **EPA 300.0**		Analysis Date: **5/4/2012**	SeqNo: **1395648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.405	2.5	12.50	7.855	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007798
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007802-001CDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**		Prep Date:					RunNo: **84282**		
Client ID: **ZZZZZZ**	Batch ID: **R84282**	TestNo: **EPA 300.0**			Analysis Date: **5/4/2012**					SeqNo: **1395649**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual
Nitrate as N	14.440	2.5						14.36		0.590	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 8:33:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**				PrepDate:	**5/8/2012**	Analyst: **CEI**
Arsenic	1.6	0.17	0.50		µg/L	5	5/14/2012 12:32 PM
Manganese	6.3	0.80	2.5		µg/L	5	5/12/2012 11:03 AM
Molybdenum	4.4	0.37	2.5		µg/L	5	5/12/2012 11:03 AM
Selenium	2.7	0.42	2.5		µg/L	5	5/14/2012 12:32 PM

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 11:17:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	1.7	0.17	0.50		µg/L	5	5/14/2012 12:38 PM
Manganese	11	0.80	2.5		µg/L	5	5/12/2012 11:09 AM
Molybdenum	19	0.37	2.5		µg/L	5	5/12/2012 11:09 AM
Selenium	5.4	0.42	2.5		µg/L	5	5/12/2012 11:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 9:43:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	3.2	0.17	0.50		µg/L	5	5/14/2012 12:44 PM
Manganese	280	0.80	2.5		µg/L	5	5/12/2012 11:15 AM
Molybdenum	22	0.37	2.5		µg/L	5	5/12/2012 11:15 AM
Selenium	ND	0.42	2.5		µg/L	5	5/12/2012 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:	**5/8/2012**		Analyst: **CEI**
Arsenic	1.7	0.17	0.50		µg/L	5	5/14/2012 12:50 PM
Manganese	8.3	0.80	2.5		µg/L	5	5/12/2012 11:21 AM
Molybdenum	16	0.37	2.5		µg/L	5	5/12/2012 11:21 AM
Selenium	100	0.42	2.5		µg/L	5	5/12/2012 11:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-186
Lab Order:	N007798	**Collection Date:**	5/3/2012 1:29:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007798-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:	**5/8/2012**		Analyst: **CEI**
Arsenic	1.9	0.17	0.50		µg/L	5	5/14/2012 12:56 PM
Manganese	140	0.80	2.5		µg/L	5	5/12/2012 11:27 AM
Molybdenum	21	0.37	2.5		µg/L	5	5/12/2012 11:27 AM
Selenium	4.8	0.42	2.5		µg/L	5	5/12/2012 11:27 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007798
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39699**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **PBW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39699**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **LCSW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.064	0.50	100.0	0	96.1	85	115				
Molybdenum	9.492	0.50	10.00	0	94.9	85	115				
Selenium	9.242	0.50	10.00	0	92.4	85	115				

Sample ID: **N007790-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.636	2.5	100.0	4.172	89.5	75	125				
Molybdenum	28.420	2.5	10.00	18.40	100	75	125				
Selenium	11.335	2.5	10.00	2.278	90.6	75	125				

Sample ID: **N007790-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.081	2.5	100.0	4.172	91.9	75	125	93.64	2.58	20	
Molybdenum	29.635	2.5	10.00	18.40	112	75	125	28.42	4.19	20	
Selenium	12.172	2.5	10.00	2.278	98.9	75	125	11.34	7.12	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007798
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39699**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **PBW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Sample ID: **LCS-39699**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **LCSW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.051	0.10	10.00	0	90.5	85	115				

Sample ID: **N007790-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.675	0.50	10.00	1.755	99.2	75	125				

Sample ID: **N007790-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.881	0.50	10.00	1.755	101	75	125	11.68	1.75	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CH2MHILL **CHAIN OF CUSTODY RECORD** *5/3/2012 4:08:19 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/3/2012
COC Number: 13

				Container:	1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	2 X 1L Amber			
				Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
				Filtered:	NA	Field	Field	NA	NA	NA			
				Holding Time:	30	180	180	2	2	7			
	DATE	TIME	Matrix		Extra (+)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo.Se.Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Dioxins/Furans (SW8290)		Number of Containers	COMMENTS
MW-57-070-186	5/3/2012	8:33	Water			X	X	X	X		N007798-001	2	
MW-60-125-186	5/3/2012	11:17	Water			X	X	X	X		-2	2	
MW-61-110-186	5/3/2012	9:43	Water			X	X	X	X		-3	2	
MW-67-185-186	5/3/2012	14:31	Water		X	X	X	X	X		-4	3	
MW-68-240-186	5/3/2012	13:29	Water		X	X	X	X	X		-5	3	
MW-71-035-186 B	5/3/2012	15:20	Water							X	-6	2	
AB-01-186	5-3-12	1525	11							X	-7	14	

TOTAL NUMBER OF CONTAINERS

15 BEL

	Signatures	Date/Time
Approved by		
Sampled by		5-3-12 1611
Relinquished by		
Received by		5/3/12 @ 1623
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: yes / no 1.8°C
Airbill No: 1GE 1RA42
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL **CHAIN OF CUSTODY RECORD** *5/3/2012 4:08:19 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/3/2012
COC Number: 13

	Container:	1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	2 X 1L Amber			
	Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
	Filtered:	NA	Field	Field	NA	NA	NA			
	Holding Time:	30	180	180	2	2	7			
		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Dioxins/Furans (SW8290)		Number of Containers	COMMENTS
MW-57-070-186	5/3/2012 8:33 Water		X	X	X	X			2	
MW-60-125-186	5/3/2012 11:17 Water		X	X	X	X			2	
MW-61-110-186	5/3/2012 9:43 Water		X	X	X	X			2	
MW-67-185-186	5/3/2012 14:31 Water	X	X	X	X	X			3	
MW-68-240-186	5/3/2012 13:29 Water	X	X	X	X	X			3	
MW-71-035-186 B	5/3/2012 15:20 Water						X		2	
AB-01-186	5-3-12 1525 11						X	TOTAL NUMBER OF CONTAINERS	14 15 BEL	

	Signatures	Date/Time
Approved by		
Sampled by		5-3-12 1611
Relinquished by		5/3/12 @ 1623
Received by		
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1.8°C
Airbill No: ICE IKAH2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CC

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

APPL, Inc.
908 N. Temperance Ave.
Clovis, CA 93611

TEL:
FAX: (209) 275-4422
Acct #:

Field Sampler: Barry Collom

04-May-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8290		
N007798-006A / MW-71-035-186B	Water	5/3/2012 3:20:00 PM	32OZA	1		
N007798-007A / AB-01-186	Water	5/3/2012 3:25:00 PM	32OZA	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: N007798 Please fax results by: Normal TAT
CH2M Hill sample. Please send report and Bill directly to CH2M Hill.

		Date/Time		Date/Time
Relinquished by:		5/7/12 @ 700	**Received by:**	
Relinquished by:			**Received by:**	

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/3/2012	Workorder:	N007798
Rep sample Temp (Deg C):	1.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	Bubble Wrap
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/4/12

Reviewed By: jfe

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007798-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 1.031 * 5

= 5.155 mg/L

Reporting **N007798-001B**, results in two significant figures,

Nitrate, mg/L = 5.2 mg/L

JMS 5/17/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007798-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.31394291158 * 5 * (25/25)

= 1.5697145579 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.6

ws fm 5/17/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007798
Test Method: EPA 6020
Analysis Date: 5/12/2012, 5/14/2012

Matrix: Water
Batch No.: 39699

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn, Se and As, the calc. values were < 25X the RL. PS @ 25X passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007790-001A-DT 25X	Manganese	µg/L	4.362029076	NA	4.171533795	-4.57%	10
N007790-001A-DT 25X	Selenium	µg/L	0	NA	2.278437785	100.00%	10
N007790-001A-DT 25X	Molybdenum	µg/L	18.53864734	PASS	18.40265784	-0.74%	10
N007790-001A-DT 25X	Arsenic	µg/L	1.954460091	NA	1.755366433	-11.34%	10

CLIENT: CH2M HILL
Work Order: N007798
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007790-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	528.088	2.5	500.0	4.172	105	75	125				
Molybdenum	77.832	2.5	50.00	18.40	119	75	125				
Selenium	57.683	2.5	50.00	2.278	111	75	125				

Sample ID: **N007790-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	59.670	0.50	50.00	1.755	116	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

July 19, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007820

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 07, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,

for

Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007820

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) is outside recovery criteria for Beryllium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Dilution was necessary due to failing internal standards at no dilution.

Advanced Technology Laboratories, Inc.

Date: *22-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007820
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007820-001A	MW-12-186	Water	5/7/2012 1:27:00 PM	5/7/2012	5/22/2012
N007820-001B	MW-12-186	Water	5/7/2012 1:27:00 PM	5/7/2012	5/22/2012
N007820-002A	MW-20-070-186	Water	5/7/2012 2:38:00 PM	5/7/2012	5/22/2012
N007820-002B	MW-20-070-186	Water	5/7/2012 2:38:00 PM	5/7/2012	5/22/2012
N007820-003A	MW-26-186	Water	5/7/2012 8:26:00 AM	5/7/2012	5/22/2012
N007820-003B	MW-26-186	Water	5/7/2012 8:26:00 AM	5/7/2012	5/22/2012
N007820-004A	MW-67-225-186	Water	5/7/2012 11:12:00 AM	5/7/2012	5/22/2012
N007820-004B	MW-67-225-186	Water	5/7/2012 11:12:00 AM	5/7/2012	5/22/2012
N007820-004C	MW-67-225-186	Water	5/7/2012 11:12:00 AM	5/7/2012	5/22/2012
N007820-005A	MW-67-260-186	Water	5/7/2012 10:16:00 AM	5/7/2012	5/22/2012
N007820-005B	MW-67-260-186	Water	5/7/2012 10:16:00 AM	5/7/2012	5/22/2012
N007820-005C	MW-67-260-186	Water	5/7/2012 10:16:00 AM	5/7/2012	5/22/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 1:27:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120508A**	QC Batch: **R84180**			PrepDate:			Analyst: **KAB**
Specific Conductance	6400	0.10	0.10		umhos/cm	1	5/8/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 2:38:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120508A**	QC Batch: **R84180**			PrepDate:			Analyst: **KAB**
Specific Conductance	2300	0.10	0.10		umhos/cm	1	5/8/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 8:26:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120508A**	QC Batch: **R84180**			PrepDate:			Analyst: **KAB**
Specific Conductance	4000	0.10	0.10		umhos/cm	1	5/8/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 11:12:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120508A**	QC Batch: **R84180**			PrepDate:			Analyst: **KAB**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	5/8/2012

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 10:16:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120508A**	QC Batch: **R84180**			PrepDate:			Analyst: **KAB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/8/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84180** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84180**
Client ID: **LCSW** Batch ID: **R84180** TestNo: **EPA 120.1** Analysis Date: **5/8/2012** SeqNo: **1391302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1410.000	0.10	1411	0	99.9	85	115				

Sample ID: **N007820-002B-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84180**
Client ID: **ZZZZZZ** Batch ID: **R84180** TestNo: **EPA 120.1** Analysis Date: **5/8/2012** SeqNo: **1391305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2280.000	0.10						2280	0	10	

Sample ID: **N007820-002B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84180**
Client ID: **ZZZZZZ** Batch ID: **R84180** TestNo: **EPA 120.1** Analysis Date: **5/8/2012** SeqNo: **1391306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13120.000	0.20	9977	2280	109	75	125				

Sample ID: **N007820-002B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84180**
Client ID: **ZZZZZZ** Batch ID: **R84180** TestNo: **EPA 120.1** Analysis Date: **5/8/2012** SeqNo: **1391307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13120.000	0.20	9977	2280	109	75	125	13120	0	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 1:27:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120508A**	QC Batch: **R84295**			PrepDate:			Analyst: **QBM**
Nitrate as N	11	0.060	2.5		mg/L	5	5/8/2012 10:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 2:38:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120508A**	QC Batch: **R84295**			PrepDate:			Analyst: **QBM**
Nitrate as N	10	0.060	2.5		mg/L	5	5/8/2012 10:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 8:26:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120508A**	QC Batch: **R84295**			PrepDate:			Analyst: **QBM**
Nitrate as N	16	0.060	2.5		mg/L	5	5/8/2012 11:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 11:12:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120508A**	QC Batch: **R84295**			PrepDate:			Analyst: **QBM**
Nitrate as N	18	0.060	2.5		mg/L	5	5/8/2012 11:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 10:16:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120508A**	QC Batch: **R84295**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/8/2012 11:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84295_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84295**
Client ID: **PBW** Batch ID: **R84295** TestNo: **EPA 300.0** Analysis Date: **5/8/2012** SeqNo: **1396284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84295_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84295**
Client ID: **LCSW** Batch ID: **R84295** TestNo: **EPA 300.0** Analysis Date: **5/8/2012** SeqNo: **1396285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.368	0.50	2.500	0	94.7	90	110				

Sample ID: **N007820-001BDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84295**
Client ID: **ZZZZZZ** Batch ID: **R84295** TestNo: **EPA 300.0** Analysis Date: **5/8/2012** SeqNo: **1396291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	10.835	2.5						10.64	1.82	20	

Sample ID: **N007820-002BMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84295**
Client ID: **ZZZZZZ** Batch ID: **R84295** TestNo: **EPA 300.0** Analysis Date: **5/8/2012** SeqNo: **1396292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	23.025	2.5	12.50	10.23	102	80	120				

Sample ID: **N007820-002BMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84295**
Client ID: **ZZZZZZ** Batch ID: **R84295** TestNo: **EPA 300.0** Analysis Date: **5/8/2012** SeqNo: **1396293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	22.715	2.5	12.50	10.23	99.9	80	120	23.02	1.36	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Lab Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007820-001

Client Sample ID: MW-12-186
Collection Date: 5/7/2012 1:27:00 PM
Matrix: WATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **ICP2_120515A** QC Batch: **39729** PrepDate: **5/8/2012** Analyst: **JT**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	3.4	10		ug/L	1	5/15/2012 01:51 PM
Barium	58	0.36	3.0		ug/L	1	5/15/2012 01:51 PM
Beryllium	ND	0.12	1.0		ug/L	1	5/15/2012 01:51 PM
Cadmium	ND	0.37	3.0		ug/L	1	5/15/2012 01:51 PM
Cobalt	ND	0.37	3.0		ug/L	1	5/15/2012 01:51 PM
Copper	ND	2.2	5.0		ug/L	1	5/15/2012 01:51 PM
Lead	ND	1.6	10		ug/L	1	5/15/2012 01:51 PM
Molybdenum	9.9	0.60	5.0		ug/L	1	5/15/2012 01:51 PM
Nickel	ND	0.70	5.0		ug/L	1	5/15/2012 01:51 PM
Silver	ND	0.39	3.0		ug/L	1	5/15/2012 01:51 PM
Vanadium	12	0.31	3.0		ug/L	1	5/18/2012 09:49 AM
Zinc	ND	1.4	10		ug/L	1	5/15/2012 01:51 PM

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39729** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/8/2012** RunNo: **84285**
Client ID: **PBW** Batch ID: **39729** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/15/2012** SeqNo: **1395812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Copper	ND	5.0									
Lead	ND	10									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39729** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/8/2012** RunNo: **84285**
Client ID: **LCSW** Batch ID: **39729** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/15/2012** SeqNo: **1395813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.907	10	50.00	0	97.8	85	115				
Barium	51.729	3.0	50.00	0	103	85	115				
Beryllium	9.534	1.0	10.00	0	95.3	85	115				
Cadmium	9.646	3.0	10.00	0	96.5	85	115				
Cobalt	10.187	3.0	10.00	0	102	85	115				
Copper	10.012	5.0	10.00	0	100	85	115				
Lead	50.126	10	50.00	0	100	85	115				
Molybdenum	45.024	5.0	50.00	0	90.0	85	115				
Nickel	52.307	5.0	50.00	0	105	85	115				
Silver	9.508	3.0	10.00	0	95.1	85	115				
Zinc	51.602	10	50.00	0	103	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007820-001A-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/8/2012** RunNo: **84285**
Client ID: **ZZZZZZ** Batch ID: **39729** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/15/2012** SeqNo: **1395817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	41.113	10	50.00	0	82.2	75	125				
Barium	110.262	3.0	50.00	58.06	104	75	125				
Beryllium	6.977	1.0	10.00	0	69.8	75	125				S
Cadmium	8.111	3.0	10.00	0	81.1	75	125				
Cobalt	9.893	3.0	10.00	0	98.9	75	125				
Copper	11.322	5.0	10.00	0	113	75	125				
Lead	43.657	10	50.00	0	87.3	75	125				
Molybdenum	57.459	5.0	50.00	9.883	95.2	75	125				
Nickel	50.337	5.0	50.00	0	101	75	125				
Silver	11.152	3.0	10.00	0.6073	105	75	125				
Zinc	51.314	10	50.00	0	103	75	125				

Sample ID: **N007820-001A-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **5/8/2012** RunNo: **84285**
Client ID: **ZZZZZZ** Batch ID: **39729** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/15/2012** SeqNo: **1395818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	40.650	10	50.00	0	81.3	75	125	41.11	1.13	20	
Barium	106.756	3.0	50.00	58.06	97.4	75	125	110.3	3.23	20	
Beryllium	7.028	1.0	10.00	0	70.3	75	125	6.977	0.724	20	S
Cadmium	8.015	3.0	10.00	0	80.2	75	125	8.111	1.19	20	
Cobalt	9.757	3.0	10.00	0	97.6	75	125	9.893	1.38	20	
Copper	11.160	5.0	10.00	0	112	75	125	11.32	1.44	20	
Lead	43.546	10	50.00	0	87.1	75	125	43.66	0.255	20	
Molybdenum	55.904	5.0	50.00	9.883	92.0	75	125	57.46	2.74	20	
Nickel	49.692	5.0	50.00	0	99.4	75	125	50.34	1.29	20	
Silver	10.902	3.0	10.00	0.6073	103	75	125	11.15	2.27	20	
Zinc	51.366	10	50.00	0	103	75	125	51.31	0.102	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39729**	SampType: **MBLK**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/8/2012**	RunNo: **84326**
Client ID: **PBW**	Batch ID: **39729**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1397482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-39729**	SampType: **LCS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/8/2012**	RunNo: **84326**
Client ID: **LCSW**	Batch ID: **39729**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1397483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.006	3.0	10.00	0	100	85	115				

Sample ID: **N007820-001A-MS**	SampType: **MS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/8/2012**	RunNo: **84326**
Client ID: **ZZZZZZ**	Batch ID: **39729**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1397487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	21.215	3.0	10.00	12.16	90.5	75	125				

Sample ID: **N007820-001A-MSD**	SampType: **MSD**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **5/8/2012**	RunNo: **84326**
Client ID: **ZZZZZZ**	Batch ID: **39729**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1397488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	20.554	3.0	10.00	12.16	83.9	75	125	21.22	3.17	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *19-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007820-001

Client Sample ID: MW-12-186
Collection Date: 5/7/2012 1:27:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120512A**	QC Batch: **39699**			PrepDate:	**5/8/2012**		Analyst: **CEI**
Antimony	ND	0.42	2.5		µg/L	5	5/12/2012 11:33 AM
Arsenic	47	0.17	0.50		µg/L	5	5/14/2012 01:02 PM
Selenium	13	0.42	2.5		µg/L	5	5/12/2012 11:33 AM
Thallium	ND	0.38	2.5		µg/L	5	5/12/2012 11:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: CH2M HILL
Lab Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007820-002

Client Sample ID: MW-20-070-186
Collection Date: 5/7/2012 2:38:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120512A**	QC Batch: **39699**				PrepDate:	**5/8/2012**	Analyst: **CEI**
Molybdenum	41	0.37	2.5		µg/L	5	5/12/2012 11:39 AM
Selenium	7.3	0.42	2.5		µg/L	5	5/12/2012 11:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007820-003

Client Sample ID: MW-26-186
Collection Date: 5/7/2012 8:26:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120514A**	QC Batch: **39699**			PrepDate:		**5/8/2012**	Analyst: **CEI**
Arsenic	1.7	0.17	0.50		µg/L	5	5/14/2012 01:14 PM
Manganese	ND	0.80	2.5		µg/L	5	5/12/2012 11:45 AM
Molybdenum	30	0.37	2.5		µg/L	5	5/12/2012 11:45 AM
Selenium	41	0.42	2.5		µg/L	5	5/12/2012 11:45 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Lab Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007820-004

Client Sample ID: MW-67-225-186
Collection Date: 5/7/2012 11:12:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120514A**	QC Batch: **39699**				PrepDate:	**5/8/2012**	Analyst: **CEI**
Arsenic	2.8	0.17	0.50		µg/L	5	5/14/2012 01:32 PM
Manganese	83	0.80	2.5		µg/L	5	5/12/2012 12:03 PM
Molybdenum	33	0.37	2.5		µg/L	5	5/12/2012 12:03 PM
Selenium	79	0.42	2.5		µg/L	5	5/12/2012 12:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007820-005

Client Sample ID: MW-67-260-186
Collection Date: 5/7/2012 10:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39699**				PrepDate:	**5/8/2012**	Analyst: **CEI**
Arsenic	12	0.17	0.50		µg/L	5	5/16/2012 03:10 PM
Manganese	230	0.80	2.5		µg/L	5	5/12/2012 12:09 PM
Molybdenum	81	0.37	2.5		µg/L	5	5/12/2012 12:09 PM
Selenium	ND	0.42	2.5		µg/L	5	5/12/2012 12:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39699** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84280**
Client ID: **PBW** Batch ID: **39699** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2012** SeqNo: **1395491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39699** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84280**
Client ID: **LCSW** Batch ID: **39699** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2012** SeqNo: **1395492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	8.872	0.50	10.00	0	88.7	85	115				
Manganese	96.064	0.50	100.0	0	96.1	85	115				
Molybdenum	9.492	0.50	10.00	0	94.9	85	115				
Selenium	9.242	0.50	10.00	0	92.4	85	115				
Thallium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID: **N007790-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84280**
Client ID: **ZZZZZZ** Batch ID: **39699** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2012** SeqNo: **1395496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.045	2.5	10.00	0	100	75	125				
Manganese	93.636	2.5	100.0	4.172	89.5	75	125				
Molybdenum	28.420	2.5	10.00	18.40	100	75	125				
Selenium	11.335	2.5	10.00	2.278	90.6	75	125				
Thallium	9.827	2.5	10.00	0	98.3	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007790-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.300	2.5	10.00	0	103	75	125	10.04	2.51	20	
Manganese	96.081	2.5	100.0	4.172	91.9	75	125	93.64	2.58	20	
Molybdenum	29.635	2.5	10.00	18.40	112	75	125	28.42	4.19	20	
Selenium	12.172	2.5	10.00	2.278	98.9	75	125	11.34	7.12	20	
Thallium	10.092	2.5	10.00	0	101	75	125	9.827	2.65	20	

Sample ID: **MB-39699**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **PBW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Sample ID: **LCS-39699**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **LCSW**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.051	0.10	10.00	0	90.5	85	115				

Sample ID: **N007790-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.675	0.50	10.00	1.755	99.2	75	125				

Sample ID: **N007790-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2012**	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.881	0.50	10.00	1.755	101	75	125	11.68	1.75	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-186
Lab Order:	N007820	**Collection Date:**	5/7/2012 1:27:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120509A**	QC Batch: **39728**			PrepDate:	**5/8/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	5/9/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39728** SampType: **LCS** TestCode: **7470_W_DISS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84224**
Client ID: **LCSW** Batch ID: **39728** TestNo: **EPA 7470A** Analysis Date: **5/9/2012** SeqNo: **1397699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.174	0.20	5.000	0	103	85	115				

Sample ID: **MB-39728** SampType: **MBLK** TestCode: **7470_W_DISS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84224**
Client ID: **PBW** Batch ID: **39728** TestNo: **EPA 7470A** Analysis Date: **5/9/2012** SeqNo: **1397701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007820-001A-MS** SampType: **MS** TestCode: **7470_W_DISS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84224**
Client ID: **ZZZZZZ** Batch ID: **39728** TestNo: **EPA 7470A** Analysis Date: **5/9/2012** SeqNo: **1397705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.419	0.20	5.000	0	108	75	125				

Sample ID: **N007820-001A-MSD** SampType: **MSD** TestCode: **7470_W_DISS** Units: **µg/L** Prep Date: **5/8/2012** RunNo: **84224**
Client ID: **ZZZZZZ** Batch ID: **39728** TestNo: **EPA 7470A** Analysis Date: **5/9/2012** SeqNo: **1397706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.227	0.20	5.000	0	105	75	125	5.419	3.60	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CH2MHILL **CHAIN OF CUSTODY RECORD** 5/7/2012 2:57:16 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/7/2012
COC Number: 14

	DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6010B/6020A/7470A(dis) Field Filtered *See Note	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Number of Containers	COMMENTS
Container:				1Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly		
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C		
Filtered:				NA	Field	Field	Field	Field	NA	NA		
Holding Time:				30	180	180	180	180	2	2		
MW-12-186	5/7/2012	13:27	Water			X			X	X	2	
MW-20-070-186	5/7/2012	14:38	Water				X		X	X	2	
MW-26-186	5/7/2012	8:26	Water		X			X	X	X	2	
MW-67-225-186	5/7/2012	11:12	Water	X	X			X	X	X	3	
MW-67-260-186	5/7/2012	10:16	Water	X	X			X	X	X	3	
										TOTAL NUMBER OF CONTAINERS	12	

* Full metals list: T22:
Sb, As, Ba, Be, Cd, Co, Cu, Pb, Hg, Mo, Ni, Se, Tl, V, Zn, Ag
→ NO Cr ←

NW007820 - 1
- 2
- 3
- 4
- 5

	Signatures	Date/Time
Approved by		5-7-12 1615
Sampled by		
Relinquished by	DMGaley	5/7/12 1608
Received by	DMGaley	5/7/12 1847
Relinquished by	MEGARTIN	5/7/12 0947
Received by		

Shipping Details
Method of Shipment: courier
On Ice: yes / no 3.6 °C
Airbill No: 1 of 2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN: Sample Custody and Marlon

Special Instructions: April 9 to May 11, 2012

Report Copy to: Shawn Duffy (530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/7/2012	Workorder:	N007820
Rep sample Temp (Deg C):	3.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/9/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007820-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 2.128 * 5

= 10.64 mg/L

Reporting **N007820-001B**, results in two significant figures,

Nitrate, mg/L = 11 mg/L

JMS 5/18/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007820-001A**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.05805687 * 1* (25/25) * 1000

= 58.05687 ug/L

Reporting results in two significant figures,

Barium, ug/L = 58

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007820
Test Method: EPA 6010
Analysis Date: 5/15/2012, 5/18/2012

Matrix: Water
Batch No.: 39729

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007820-001A-DT 5x	Antimony	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Barium	ug/L	59.754035	NA	58.05687	-2.92%	10
N007820-001A-DT 5x	Beryllium	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Cadmium	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Cobalt	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Copper	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Molybdenum	ug/L	7.16457	NA	9.883015	27.51%	10
N007820-001A-DT 5x	Nickel	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Silver	ug/L	0	NA	0.607319	100.00%	10
N007820-001A-DT 5x	Lead	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Zinc	ug/L	0	NA	0	0.00%	10
N007820-001A-DT 5x	Vanadium	ug/L	13.21606	NA	12.160845	0.00%	10

Note: NA - Not Applicable

5/21/12

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007820-001A-PS**	SampType: **PS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **84285**
Client ID: **ZZZZZZ**	Batch ID: **39729**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2012**	SeqNo: **1395816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	245.399	20	250.0	0	98.2	75	125				
Barium	316.393	6.0	250.0	58.06	103	75	125				
Beryllium	245.157	2.0	250.0	0	98.1	75	125				
Cadmium	249.811	6.0	250.0	0	99.9	75	125				
Cobalt	253.266	6.0	250.0	0	101	75	125				
Copper	245.327	10	250.0	0	98.1	75	125				
Lead	235.971	20	250.0	0	94.4	75	125				
Molybdenum	255.154	10	250.0	9.883	98.1	75	125				
Nickel	255.314	10	250.0	0	102	75	125				
Silver	253.571	6.0	250.0	0.6073	101	75	125				
Zinc	257.876	20	250.0	0	103	75	125				

Sample ID: **N007820-001A-PS**	SampType: **PS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **84326**
Client ID: **ZZZZZZ**	Batch ID: **39729**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1397486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	227.572	6.0	250.0	12.16	86.2	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007820-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 9.3219998268 * 5 * (25/25)

= 46.609999134 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 47

MI / ICPMS-02 5/15/2012 11:43:09 PM

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007820
Test Method: EPA 6020
Analysis Date: 5/12/2012, 5/14/2012

Matrix: Water
Batch No.: 39699

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Mn, Se and As, the calc. values were < 25X the RL. PS @ 25X passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007790-001A-DT 25X	Manganese	µg/L	4.362029076	NA	4.171533795	-4.57%	10
N007790-001A-DT 25X	Selenium	µg/L	0	NA	2.278437785	100.00%	10
N007790-001A-DT 25X	Molybdenum	µg/L	18.53864734	PASS	18.40265784	-0.74%	10
N007790-001A-DT 25X	Arsenic	µg/L	1.954460091	NA	1.755366433	-11.34%	10

CLIENT: CH2M HILL
Work Order: N007820
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007790-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84280**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2012**	SeqNo: **1395495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	528.088	2.5	500.0	4.172	105	75	125				
Molybdenum	77.832	2.5	50.00	18.40	119	75	125				
Selenium	57.683	2.5	50.00	2.278	111	75	125				
Thallium	58.056	2.5	50.00	0	116	75	125				

Sample ID: **N007790-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84281**
Client ID: **ZZZZZZ**	Batch ID: **39699**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2012**	SeqNo: **1395551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	59.670	0.50	50.00	1.755	116	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N007820-001A**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	=	**0.0**
Mercury, ug/L	=	**ND**

5/21/12

MI / AA1 5/21/2012 11:20:32 AM

May 22, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007833

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 08, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007833

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc.

Date: *22-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007833
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007833-001A	MW-20-100-186	Water	5/8/2012 9:54:00 AM	5/8/2012	5/22/2012
N007833-001B	MW-20-100-186	Water	5/8/2012 9:54:00 AM	5/8/2012	5/22/2012
N007833-002A	MW-51-186	Water	5/8/2012 2:48:00 PM	5/8/2012	5/22/2012
N007833-002B	MW-51-186	Water	5/8/2012 2:48:00 PM	5/8/2012	5/22/2012
N007833-003A	MW-59-100-186	Water	5/8/2012 12:00:00 PM	5/8/2012	5/22/2012
N007833-003B	MW-59-100-186	Water	5/8/2012 12:00:00 PM	5/8/2012	5/22/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-186
Lab Order:	N007833	**Collection Date:**	5/8/2012 9:54:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007833-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120509A**	QC Batch: **R84197**			PrepDate:			Analyst: **KAB**
Specific Conductance	3000	0.10	0.10		umhos/cm	1	5/9/2012

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-186
Lab Order:	N007833	**Collection Date:**	5/8/2012 2:48:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007833-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120509A**	QC Batch: **R84197**			PrepDate:			Analyst: **KAB**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	5/9/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-186
Lab Order:	N007833	**Collection Date:**	5/8/2012 12:00:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007833-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120509A**	QC Batch: **R84197**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/9/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84197** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84197**
Client ID: **LCSW** Batch ID: **R84197** TestNo: **EPA 120.1** Analysis Date: **5/9/2012** SeqNo: **1391737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1420.000	0.10	1411	0	101	85	115				

Sample ID: **N007833-001B-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84197**
Client ID: **ZZZZZZ** Batch ID: **R84197** TestNo: **EPA 120.1** Analysis Date: **5/9/2012** SeqNo: **1391740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2970.000	0.10						2970	0	10	

Sample ID: **N007833-001B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84197**
Client ID: **ZZZZZZ** Batch ID: **R84197** TestNo: **EPA 120.1** Analysis Date: **5/9/2012** SeqNo: **1391741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13100.000	0.20	9977	2970	102	75	125				

Sample ID: **N007833-001B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84197**
Client ID: **ZZZZZZ** Batch ID: **R84197** TestNo: **EPA 120.1** Analysis Date: **5/9/2012** SeqNo: **1391742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13120.000	0.20	9977	2970	102	75	125	13100	0.153	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-186
Lab Order:	N007833	**Collection Date:**	5/8/2012 9:54:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007833-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120509A**	QC Batch: **R84296**			PrepDate:			Analyst: **QBM**
Nitrate as N	15	0.12	5.0		mg/L	10	5/9/2012 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-186
Lab Order:	N007833	**Collection Date:**	5/8/2012 2:48:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007833-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120509A**	QC Batch: **R84296**			PrepDate:			Analyst: **QBM**
Nitrate as N	10	0.060	2.5		mg/L	5	5/9/2012 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-186
Lab Order:	N007833	**Collection Date:**	5/8/2012 12:00:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007833-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120509A**	QC Batch: **R84296**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.2	0.060	2.5		mg/L	5	5/9/2012 04:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84296_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84296**
Client ID: **PBW** Batch ID: **R84296** TestNo: **EPA 300.0** Analysis Date: **5/9/2012** SeqNo: **1396334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84296_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84296**
Client ID: **LCSW** Batch ID: **R84296** TestNo: **EPA 300.0** Analysis Date: **5/9/2012** SeqNo: **1396335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.359	0.50	2.500	0	94.4	90	110				

Sample ID: **N007826-002CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84296**
Client ID: **ZZZZZZ** Batch ID: **R84296** TestNo: **EPA 300.0** Analysis Date: **5/9/2012** SeqNo: **1396341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	17.050	2.5	12.50	5.330	93.8	80	120				

Sample ID: **N007826-003CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84296**
Client ID: **ZZZZZZ** Batch ID: **R84296** TestNo: **EPA 300.0** Analysis Date: **5/9/2012** SeqNo: **1396343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	10.690	2.5						10.89	1.85	20	

Sample ID: **N007826-006CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84296**
Client ID: **ZZZZZZ** Batch ID: **R84296** TestNo: **EPA 300.0** Analysis Date: **5/9/2012** SeqNo: **1396344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	41.380	5.0	25.00	16.95	97.7	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007826-006CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84296**
Client ID: **ZZZZZZ** Batch ID: **R84296** TestNo: **EPA 300.0** Analysis Date: **5/9/2012** SeqNo: **1396345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	41.040	5.0	25.00	16.95	96.4	80	120	41.38	0.825	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Lab Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007833-001

Client Sample ID: MW-20-100-186
Collection Date: 5/8/2012 9:54:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Molybdenum	3.9	0.074	0.50		µg/L	1	5/16/2012 04:19 PM
Selenium	11	0.084	0.50		µg/L	1	5/16/2012 04:19 PM

CLIENT: CH2M HILL
Lab Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007833-002

Client Sample ID: MW-51-186
Collection Date: 5/8/2012 2:48:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120516B**	QC Batch: **39751**			PrepDate:	**5/11/2012**		Analyst: **CEI**
Arsenic	4.1	0.17	0.50		µg/L	5	5/16/2012 01:57 PM
Manganese	ND	0.80	2.5		µg/L	5	5/16/2012 01:57 PM
Molybdenum	43	0.37	2.5		µg/L	5	5/16/2012 01:57 PM
Selenium	16	0.42	2.5		µg/L	5	5/16/2012 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007833-003

Client Sample ID: MW-59-100-186
Collection Date: 5/8/2012 12:00:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Arsenic	2.1	0.17	0.50		µg/L	5	5/16/2012 02:03 PM
Manganese	11	0.80	2.5		µg/L	5	5/16/2012 02:03 PM
Molybdenum	5.7	0.37	2.5		µg/L	5	5/16/2012 02:03 PM
Selenium	4.6	0.42	2.5		µg/L	5	5/16/2012 02:03 PM

CLIENT: CH2M HILL
Work Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39751**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **PBW**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.276	0.50									

Sample ID: **LCS-39751**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **LCSW**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.087	0.10	10.00	0	90.9	85	115				
Manganese	97.094	0.50	100.0	0	97.1	85	115				
Molybdenum	9.663	0.50	10.00	0	96.6	85	115				
Selenium	9.526	0.50	10.00	0	95.3	85	115				

Sample ID: **N007833-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.980	0.10	10.00	1.909	101	75	125				
Manganese	88.697	0.50	100.0	0	88.7	75	125				
Molybdenum	14.747	0.50	10.00	3.885	109	75	125				
Selenium	21.343	0.50	10.00	11.25	101	75	125				

Sample ID: **N007833-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.922	0.10	10.00	1.909	100	75	125	11.98	0.489	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007833-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **ZZZZZZ** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.085	0.50	100.0	0	88.1	75	125	88.70	0.692	20	
Molybdenum	14.616	0.50	10.00	3.885	107	75	125	14.75	0.893	20	
Selenium	21.264	0.50	10.00	11.25	100	75	125	21.34	0.371	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CH2MHILL **CHAIN OF CUSTODY RECORD** *5/8/2012 3:48:53 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/8/2012
COC Number: 15

	Container:	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
	Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
	Filtered:	Field	Field	Field	NA	NA			
	Holding Time:	180	180	180	2	2			
		Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-20-100-186	5/8/2012 9:54 Water		X		X	X	N007833 - 1	2	
MW-51-186	5/8/2012 14:48 Water	X		X	X	X	" - 2	2	
MW-59-100-186	5/8/2012 12:00 Water	X		X	X	X	" - 3	2	
							TOTAL NUMBER OF CONTAINERS	6	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		5-8-12 1550
Received by		
Relinquished by		5/8/12 e/601
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1.7°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/8/2012	Workorder:	N007833
Rep sample Temp (Deg C):	1.7	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/9/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007833-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 1.517 * 10

= 15.17 mg/L

Reporting **N007833-001B**, results in two significant figures,

Nitrate, mg/L = 15 mg/L

CMS 5/18/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007833-002A**, the concentration in ug/L is calculated as follows:

Molybdenum, ug/L = 8.6248222354 * 5 * (25/25)

= 43.124111177 ug/L

Reporting results in two significant figures,

Molybdenum, ug/L = 43

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007833
Test Method: EPA 6020
Analysis Date: 05/16/12

Matrix: Water
Batch No.: 39751

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to As, Mn, Mo andSe, the calc. values were < 25X the RL. PS @ 2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007833-001A-DT 5X	Arsenic	µg/L	2.09945361	NA	1.908743222	-9.99%	10
N007833-001A-DT 5X	Manganese	µg/L	0	NA	0	#DIV/0!	10
N007833-001A-DT 5X	Molybdenum	µg/L	3.939679904	NA	3.885064887	-1.41%	10
N007833-001A-DT 5X	Selenium	µg/L	11.42064038	NA	11.24549521	-1.56%	10

Note: NA - Not Applicable

5/22/12

CLIENT: CH2M HILL
Work Order: N007833
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007833-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.848	0.20	20.00	1.909	105	75	125				
Manganese	188.172	1.0	200.0	0	94.1	75	125				
Molybdenum	26.219	1.0	20.00	3.885	112	75	125				
Selenium	31.629	1.0	20.00	11.25	102	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

May 23, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007844

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 09, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007844

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary due to high concentration of other non-target analyte.

Analytical Comments for EPA 6020:

Dilution was necessary due to failing internal standards at no dilution.

Advanced Technology Laboratories, Inc.

Date: *23-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007844
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007844-001A	MW-68BR-280-186	Water	5/9/2012 1:54:00 PM	5/9/2012	5/23/2012
N007844-001B	MW-68BR-280-186	Water	5/9/2012 1:54:00 PM	5/9/2012	5/23/2012
N007844-001C	MW-68BR-280-186	Water	5/9/2012 1:54:00 PM	5/9/2012	5/23/2012

CLIENT: CH2M HILL
Lab Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007844-001

Client Sample ID: MW-68BR-280-186
Collection Date: 5/9/2012 1:54:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120510B**	QC Batch: **R84210**			PrepDate:			Analyst: **KAB**
Specific Conductance	21000	0.10	0.10		umhos/cm	1	5/10/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84210** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84210**
Client ID: **LCSW** Batch ID: **R84210** TestNo: **EPA 120.1** Analysis Date: **5/10/2012** SeqNo: **1392363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1415.000	0.10	1411	0	100	85	115				

Sample ID: **N007838-001B-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84210**
Client ID: **ZZZZZZ** Batch ID: **R84210** TestNo: **EPA 120.1** Analysis Date: **5/10/2012** SeqNo: **1392365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	957.000	0.10						957.0	0	10	

Sample ID: **N007838-001B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84210**
Client ID: **ZZZZZZ** Batch ID: **R84210** TestNo: **EPA 120.1** Analysis Date: **5/10/2012** SeqNo: **1392366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10820.000	0.20	9977	957.0	98.9	75	125				

Sample ID: **N007838-001B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84210**
Client ID: **ZZZZZZ** Batch ID: **R84210** TestNo: **EPA 120.1** Analysis Date: **5/10/2012** SeqNo: **1392367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10840.000	0.20	9977	957.0	99.1	75	125	10820	0.185	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-186
Lab Order:	N007844	**Collection Date:**	5/9/2012 1:54:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007844-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120510A**	QC Batch: **R84344**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/10/2012 10:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84344_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84344**
Client ID: **PBW**	Batch ID: **R84344**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2012**	SeqNo: **1398130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84344_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84344**
Client ID: **LCSW**	Batch ID: **R84344**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2012**	SeqNo: **1398131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.357	0.50	2.500	0	94.3	90	110				

Sample ID: **N007844-001CDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84344**
Client ID: **ZZZZZZ**	Batch ID: **R84344**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2012**	SeqNo: **1398133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	2.5						0	0	20	

Sample ID: **N007844-001CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84344**
Client ID: **ZZZZZZ**	Batch ID: **R84344**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2012**	SeqNo: **1398134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	11.305	2.5	12.50	0	90.4	80	120				

Sample ID: **N007844-001CMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84344**
Client ID: **ZZZZZZ**	Batch ID: **R84344**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2012**	SeqNo: **1398135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	11.330	2.5	12.50	0	90.6	80	120	11.30	0.221	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Lab Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007844-001

Client Sample ID: MW-68BR-280-186
Collection Date: 5/9/2012 1:54:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120516B**	QC Batch: **39751**			PrepDate:	**5/11/2012**		Analyst: **CEI**
Arsenic	2.4	0.17	0.50		µg/L	5	5/16/2012 02:09 PM
Manganese	270	0.80	2.5		µg/L	5	5/16/2012 02:09 PM
Molybdenum	94	0.37	2.5		µg/L	5	5/16/2012 02:09 PM
Selenium	ND	0.42	2.5		µg/L	5	5/16/2012 02:09 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39751** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **PBW** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.276	0.50									

Sample ID: **LCS-39751** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **LCSW** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.087	0.10	10.00	0	90.9	85	115				
Manganese	97.094	0.50	100.0	0	97.1	85	115				
Molybdenum	9.663	0.50	10.00	0	96.6	85	115				
Selenium	9.526	0.50	10.00	0	95.3	85	115				

Sample ID: **N007833-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **ZZZZZZ** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.980	0.10	10.00	1.909	101	75	125				
Manganese	88.697	0.50	100.0	0	88.7	75	125				
Molybdenum	14.747	0.50	10.00	3.885	109	75	125				
Selenium	21.343	0.50	10.00	11.25	101	75	125				

Sample ID: **N007833-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **ZZZZZZ** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.922	0.10	10.00	1.909	100	75	125	11.98	0.489	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007833-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **ZZZZZZ** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.085	0.50	100.0	0	88.1	75	125	88.70	0.692	20	
Molybdenum	14.616	0.50	10.00	3.885	107	75	125	14.75	0.893	20	
Selenium	21.264	0.50	10.00	11.25	100	75	125	21.34	0.371	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

5/9/2012 3:50:07 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/9/2012
COC Number: 16

	DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				NA	Field	Field	NA	NA			
Holding Time:				30	180	180	2	2			
MW-68BR-280-186	5/9/2012	13:54	Water	x	x	x	x	x	N007844-1	3	
									TOTAL NUMBER OF CONTAINERS	3	

	Signatures	Date/Time
Approved by		5-9-12
Sampled by		1551
Relinquished by		
Received by	MB Gaetan / [signature]	5/9/12 @ 1551
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.2°C
Airbill No: ICE 1R#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/9/2012	Workorder:	N007844
Rep sample Temp (Deg C):	1.2	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/10/12

Reviewed By: jgf

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007844-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0 * 1
	=	0 mg/L
Nitrate, mg/L	**=**	**ND**

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007844-001B**, the concentration in ug/L is calculated as follows:

Molybdenum, ug/L	=	18.748269883 * 5 * (25/25)
	=	93.741349415 ug/L

Reporting results in two significant figures,

Molybdenum, ug/L	=	**94**

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007844
Test Method: EPA 6020
Analysis Date: 05/16/12

Matrix: Water
Batch No.: 39751

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to As, Mn, Mo andSe, the calc. values were < 25X the RL. PS @ 2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007833-001A-DT 5X	Arsenic	µg/L	2.09945361	NA	1.908743222	-9.99%	10
N007833-001A-DT 5X	Manganese	µg/L	0	NA	0	#DIV/0!	10
N007833-001A-DT 5X	Molybdenum	µg/L	3.939679904	NA	3.885064887	-1.41%	10
N007833-001A-DT 5X	Selenium	µg/L	11.42064038	NA	11.24549521	-1.56%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N007844
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007833-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.848	0.20	20.00	1.909	105	75	125				
Manganese	188.172	1.0	200.0	0	94.1	75	125				
Molybdenum	26.219	1.0	20.00	3.885	112	75	125				
Selenium	31.629	1.0	20.00	11.25	102	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

July 09, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007861

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 10, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007861

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020:

Dilution was necessary due to failing internal standards at no dilution.

Advanced Technology Laboratories, Inc.

Date: *09-Jul-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007861
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007861-001A	MW-128-186	Water	5/10/2012 8:00:00 AM	5/10/2012	5/24/2012
N007861-001B	MW-128-186	Water	5/10/2012 8:00:00 AM	5/10/2012	5/24/2012
N007861-001C	MW-128-186	Water	5/10/2012 8:00:00 AM	5/10/2012	5/24/2012
N007861-002A	MW-20-130-186	Water	5/10/2012 12:29:00 PM	5/10/2012	5/24/2012
N007861-002B	MW-20-130-186	Water	5/10/2012 12:29:00 PM	5/10/2012	5/24/2012
N007861-003A	MW-50-200-186	Water	5/10/2012 10:30:00 AM	5/10/2012	5/24/2012
N007861-004A	MW-62-110-186	Water	5/10/2012 1:10:00 PM	5/10/2012	5/24/2012
N007861-004B	MW-62-110-186	Water	5/10/2012 1:10:00 PM	5/10/2012	5/24/2012
N007861-005A	MW-62-190-186	Water	5/10/2012 1:18:00 PM	5/10/2012	5/24/2012
N007861-005B	MW-62-190-186	Water	5/10/2012 1:18:00 PM	5/10/2012	5/24/2012
N007861-006A	MW-66-230-186	Water	5/10/2012 8:51:00 AM	5/10/2012	5/24/2012
N007861-006B	MW-66-230-186	Water	5/10/2012 8:51:00 AM	5/10/2012	5/24/2012
N007861-006C	MW-66-230-186	Water	5/10/2012 8:51:00 AM	5/10/2012	5/24/2012
N007861-007A	MW-68-180-186	Water	5/10/2012 2:30:00 PM	5/10/2012	5/24/2012
N007861-007B	MW-68-180-186	Water	5/10/2012 2:30:00 PM	5/10/2012	5/24/2012
N007861-007C	MW-68-180-186	Water	5/10/2012 2:30:00 PM	5/10/2012	5/24/2012
N007861-008A	MW-74-240-186	Water	5/10/2012 2:20:00 PM	5/10/2012	5/24/2012
N007861-008B	MW-74-240-186	Water	5/10/2012 2:20:00 PM	5/10/2012	5/24/2012
N007861-008C	MW-74-240-186	Water	5/10/2012 2:20:00 PM	5/10/2012	5/24/2012

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CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 8:00:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-002

Client Sample ID: MW-20-130-186
Collection Date: 5/10/2012 12:29:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	5/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 10:30:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	21000	0.10	0.10		umhos/cm	1	5/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 1:10:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	8900	0.10	0.10		umhos/cm	1	5/11/2012

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 1:18:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 8:51:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 2:30:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	3200	0.10	0.10		umhos/cm	1	5/11/2012

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ANALYTICAL RESULTS

Print Date: *09-Jul-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 2:20:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120511D**	QC Batch: **R84235**			PrepDate:			Analyst: **KAB**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	5/11/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84235** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84235**
Client ID: **LCSW** Batch ID: **R84235** TestNo: **EPA 120.1** Analysis Date: **5/11/2012** SeqNo: **1393291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1409.000	0.10	1411	0	99.9	85	115				

Sample ID: **N007861-008C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84235**
Client ID: **ZZZZZZ** Batch ID: **R84235** TestNo: **EPA 120.1** Analysis Date: **5/11/2012** SeqNo: **1393300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1289.000	0.10						1288	0.0776	10	

Sample ID: **N007861-008C-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84235**
Client ID: **ZZZZZZ** Batch ID: **R84235** TestNo: **EPA 120.1** Analysis Date: **5/11/2012** SeqNo: **1393301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11060.000	0.20	9977	1288	97.9	75	125				

Sample ID: **N007861-008C-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84235**
Client ID: **ZZZZZZ** Batch ID: **R84235** TestNo: **EPA 120.1** Analysis Date: **5/11/2012** SeqNo: **1393302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11080.000	0.20	9977	1288	98.1	75	125	11060	0.181	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 8:00:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	9.4	0.060	2.5		mg/L	5	5/11/2012 09:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 12:29:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	11	0.060	2.5		mg/L	5	5/11/2012 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 1:10:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	2.9	0.060	2.5		mg/L	5	5/11/2012 09:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 1:18:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/11/2012 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 8:51:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	9.5	0.060	2.5		mg/L	5	5/11/2012 10:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 2:30:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	12	0.12	5.0		mg/L	10	5/11/2012 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *09-Jul-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-186
Lab Order:	N007861	**Collection Date:**	5/10/2012 2:20:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007861-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120511A**	QC Batch: **R84359**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.012	0.50		mg/L	1	5/11/2012 11:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84359_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84359**
Client ID: **PBW**	Batch ID: **R84359**	TestNo: **EPA 300.0**		Analysis Date: **5/11/2012**	SeqNo: **1398622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84359_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84359**
Client ID: **LCSW**	Batch ID: **R84359**	TestNo: **EPA 300.0**		Analysis Date: **5/11/2012**	SeqNo: **1398623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.357	0.50	2.500	0	94.3	90	110				

Sample ID: **N007850-001CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84359**
Client ID: **ZZZZZZ**	Batch ID: **R84359**	TestNo: **EPA 300.0**		Analysis Date: **5/11/2012**	SeqNo: **1398638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	19.670	2.5	12.50	7.440	97.8	80	120				

Sample ID: **N007850-001CMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84359**
Client ID: **ZZZZZZ**	Batch ID: **R84359**	TestNo: **EPA 300.0**		Analysis Date: **5/11/2012**	SeqNo: **1398639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	19.500	2.5	12.50	7.440	96.5	80	120	19.67	0.868	20	

Sample ID: **N007850-002CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84359**
Client ID: **ZZZZZZ**	Batch ID: **R84359**	TestNo: **EPA 300.0**		Analysis Date: **5/11/2012**	SeqNo: **1398640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	19.550	2.5	12.50	7.470	96.6	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007850-007CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84359**
Client ID: **ZZZZZZ** Batch ID: **R84359** TestNo: **EPA 300.0** Analysis Date: **5/11/2012** SeqNo: **1398641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.018	1.0						5.040	0.437	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-001

Client Sample ID: MW-128-186
Collection Date: 5/10/2012 8:00:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Arsenic	5.4	0.17	0.50		µg/L	5	5/16/2012 02:28 PM
Manganese	29	0.80	2.5		µg/L	5	5/16/2012 02:28 PM
Molybdenum	86	0.74	5.0		µg/L	10	5/16/2012 03:16 PM
Selenium	9.9	0.42	2.5		µg/L	5	5/16/2012 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-002

Client Sample ID: MW-20-130-186
Collection Date: 5/10/2012 12:29:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120516B**	QC Batch: **39751**			PrepDate:	**5/11/2012**		Analyst: **CEI**
Arsenic	5.8	0.17	0.50		µg/L	5	5/16/2012 02:34 PM
Manganese	ND	0.80	2.5		µg/L	5	5/16/2012 02:34 PM
Molybdenum	43	0.37	2.5		µg/L	5	5/16/2012 02:34 PM
Selenium	20	0.42	2.5		µg/L	5	5/16/2012 02:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-004

Client Sample ID: MW-62-110-186
Collection Date: 5/10/2012 1:10:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Arsenic	8.8	0.17	0.50		µg/L	5	5/16/2012 02:40 PM
Manganese	180	0.80	2.5		µg/L	5	5/16/2012 02:40 PM
Molybdenum	50	0.37	2.5		µg/L	5	5/16/2012 02:40 PM
Selenium	3.4	0.42	2.5		µg/L	5	5/16/2012 02:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-005

Client Sample ID: MW-62-190-186
Collection Date: 5/10/2012 1:18:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Arsenic	5.4	0.17	0.50		µg/L	5	5/16/2012 02:46 PM
Manganese	760	0.80	2.5		µg/L	5	5/16/2012 02:46 PM
Molybdenum	68	0.74	5.0		µg/L	10	5/16/2012 03:22 PM
Selenium	ND	0.42	2.5		µg/L	5	5/16/2012 02:46 PM

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-006

Client Sample ID: MW-66-230-186
Collection Date: 5/10/2012 8:51:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Arsenic	4.8	0.17	0.50		µg/L	5	5/16/2012 02:52 PM
Manganese	27	0.80	2.5		µg/L	5	5/16/2012 02:52 PM
Molybdenum	82	0.74	5.0		µg/L	10	5/16/2012 03:43 PM
Selenium	9.6	0.42	2.5		µg/L	5	5/16/2012 02:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-007

Client Sample ID: MW-68-180-186
Collection Date: 5/10/2012 2:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120516B**	QC Batch: **39751**				PrepDate:	**5/11/2012**	Analyst: **CEI**
Arsenic	2.9	0.17	0.50		µg/L	5	5/16/2012 02:58 PM
Manganese	ND	0.80	2.5		µg/L	5	5/16/2012 02:58 PM
Molybdenum	37	0.37	2.5		µg/L	5	5/16/2012 02:58 PM
Selenium	10	0.42	2.5		µg/L	5	5/16/2012 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *09-Jul-12*

CLIENT: CH2M HILL
Lab Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007861-008

Client Sample ID: MW-74-240-186
Collection Date: 5/10/2012 2:20:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120516B**	QC Batch: **39751**			PrepDate:		**5/11/2012**	Analyst: **CEI**
Arsenic	15	0.17	0.50		µg/L	5	5/16/2012 03:04 PM
Manganese	ND	0.80	2.5		µg/L	5	5/16/2012 03:04 PM
Molybdenum	210	0.37	2.5		µg/L	5	5/16/2012 03:04 PM
Selenium	ND	0.42	2.5		µg/L	5	5/16/2012 03:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39751**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **PBW**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.276	0.50									

Sample ID: **LCS-39751**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **LCSW**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.087	0.10	10.00	0	90.9	85	115				
Manganese	97.094	0.50	100.0	0	97.1	85	115				
Molybdenum	9.663	0.50	10.00	0	96.6	85	115				
Selenium	9.526	0.50	10.00	0	95.3	85	115				

Sample ID: **N007833-001A-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.980	0.10	10.00	1.909	101	75	125				
Manganese	88.697	0.50	100.0	0	88.7	75	125				
Molybdenum	14.747	0.50	10.00	3.885	109	75	125				
Selenium	21.343	0.50	10.00	11.25	101	75	125				

Sample ID: **N007833-001A-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2012**	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.922	0.10	10.00	1.909	100	75	125	11.98	0.489	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007833-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/11/2012** RunNo: **84310**
Client ID: **ZZZZZZ** Batch ID: **39751** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2012** SeqNo: **1396907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.085	0.50	100.0	0	88.1	75	125	88.70	0.692	20	
Molybdenum	14.616	0.50	10.00	3.885	107	75	125	14.75	0.893	20	
Selenium	21.264	0.50	10.00	11.25	100	75	125	21.34	0.371	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL CHAIN OF CUSTODY RECORD 5/10/2012 2:59:12 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/10/2012
COC Number: 18

Please change the sample ID for MW-74BR-240-186 to MW-74-240-186. Shawn P. Duffy 7-9-2012

	DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				NA	Field	Field	NA	NA			
Holding Time:				30	180	180	2	2			
MW-128-186	5/10/2012	8:00	Water	x	x	x	x	x	N007861-1	3	
MW-20-130-186	5/10/2012	12:29	Water		x	x	x	x	-2	2	
MW-50-200-186	5/10/2012	10:30	Water				x		-3	1	
MW-62-110-186	5/10/2012	13:10	Water		x	x	x	x	-4	2	
MW-62-190-186	5/10/2012	13:18	Water		x	x	x	x	-5	2	
MW-66-230-186	5/10/2012	8:51	Water	x	x	x	x	x	-6	3	
MW-68-180-186	5/10/2012	14:30	Water	x	x	x	x	x	-7	3	
~~MW-74BR-240-186~~ SPD	5/10/2012	14:20	Water	x	x	x	x	x SPD	MW-74-240-186 -8	3	
									TOTAL NUMBER OF CONTAINERS	19	

REVISION 1, 07/09/12

	Signatures	Date/Time
Approved by		5-10-12 1603
Sampled by		
Relinquished by		
Received by		5-10-12 @1603
Relinquished by		5-10-12 @1824
Received by	MBCARTIN	5/10/12 @1824

Shipping Details
Method of Shipment: courier
On Ice: yes / no 4.7°C
Airbill No: ICE 1RH2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN: Sample Custody and Marion

Special Instructions: April 9 to May 11, 2012

Report Copy to Shawn Duffy (530) 229-3303

CH2MHILL **CHAIN OF CUSTODY RECORD** *5/10/2012 2:59:12 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/10/2012
COC Number: 18

				Container:	1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
				Filtered:	NA	Field	Field	NA	NA			
				Holding Time:	30	180	180	2	2			
	DATE	TIME	Matrix		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-128-186	5/10/2012	8:00	Water		X	X	X	X	X		3	
MW-20-130-186	5/10/2012	12:29	Water			X	X	X	X		2	
MW-50-200-186	5/10/2012	10:30	Water					X			1	
MW-62-110-186	5/10/2012	13:10	Water			X	X	X	X		2	
MW-62-190-186	5/10/2012	13:18	Water			X	X	X	X		2	
MW-66-230-186	5/10/2012	8:51	Water		X	X	X	X	X		3	
MW-68-180-186	5/10/2012	14:30	Water		X	X	X	X	X		3	
MW-74BR-240-186	5/10/2012	14:20	Water		X	X	X	X	X		3	
										TOTAL NUMBER OF CONTAINERS	19	

	Signatures	Date/Time
Approved by		
Sampled by		5-10-12 1603
Relinquished by		
Received by		5-10-12 @1603
Relinquished by		5-10-12 @1824
Received by		5/10/12 @1824

Shipping Details
Method of Shipment: courier
On Ice: (yes) no 4.7°C
Airbill No: IGE IR442
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/10/2012	Workorder:	N007861
Rep sample Temp (Deg C):	4.7	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/11/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007861-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	1.883 * 5
	=	9.415 mg/L

Reporting **N007861-001C**, results in two significant figures,

Nitrate, mg/L	**=**	**9.4 mg/L**

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007861-002A**, the concentration in ug/L is calculated as follows:

Molybdenum, ug/L = 8.5695653609 * 5 * (25/25)

= 42.8478268045 ug/L

Reporting results in two significant figures,

Molybdenum, ug/L = 43

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007861
Test Method: EPA 6020
Analysis Date: 05/16/12

Matrix: Water
Batch No.: 39751

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to As, Mn, Mo andSe, the calc. values were < 25X the RL. PS @ 2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007833-001A-DT 5X	Arsenic	µg/L	2.09945361	NA	1.908743222	-9.99%	10
N007833-001A-DT 5X	Manganese	µg/L	0	NA	0	#DIV/0!	10
N007833-001A-DT 5X	Molybdenum	µg/L	3.939679904	NA	3.885064887	-1.41%	10
N007833-001A-DT 5X	Selenium	µg/L	11.42064038	NA	11.24549521	-1.56%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N007861
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007833-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84310**
Client ID: **ZZZZZZ**	Batch ID: **39751**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/16/2012**	SeqNo: **1396905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.848	0.20	20.00	1.909	105	75	125				
Manganese	188.172	1.0	200.0	0	94.1	75	125				
Molybdenum	26.219	1.0	20.00	3.885	112	75	125				
Selenium	31.629	1.0	20.00	11.25	102	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

June 12, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007886

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 15, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007886

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc.

Date: *12-Jun-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007886
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007886-001A	MW-10-186	Water	5/15/2012 2:28:00 PM	5/15/2012	5/30/2012
N007886-001B	MW-10-186	Water	5/15/2012 2:28:00 PM	5/15/2012	5/30/2012
N007886-002A	MW-58BR-UPR-160-186	Water	5/15/2012 10:40:00 AM	5/15/2012	5/30/2012
N007886-002B	MW-58BR-UPR-160-186	Water	5/15/2012 10:40:00 AM	5/15/2012	5/30/2012

CLIENT: CH2M HILL
Lab Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007886-001

Client Sample ID: MW-10-186
Collection Date: 5/15/2012 2:28:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120516C**	QC Batch: **R84316**			PrepDate:			Analyst: **KAB**
Specific Conductance	3000	0.10	0.10		umhos/cm	1	5/16/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Jun-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-UPR-160-186
Lab Order:	N007886	**Collection Date:**	5/15/2012 10:40:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007886-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120516C**	QC Batch: **R84316**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/16/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84316**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84316**
Client ID: **LCSW**	Batch ID: **R84316**	TestNo: **EPA 120.1**		Analysis Date: **5/16/2012**	SeqNo: **1397140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1420.000	0.10	1411	0	101	85	115				

Sample ID: **N007886-001B-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84316**
Client ID: **ZZZZZZ**	Batch ID: **R84316**	TestNo: **EPA 120.1**		Analysis Date: **5/16/2012**	SeqNo: **1397142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3060.000	0.10						3050	0.327	10	

Sample ID: **N007886-001B-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84316**
Client ID: **ZZZZZZ**	Batch ID: **R84316**	TestNo: **EPA 120.1**		Analysis Date: **5/16/2012**	SeqNo: **1397143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13080.000	0.20	9977	3050	101	75	125				

Sample ID: **N007886-001B-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84316**
Client ID: **ZZZZZZ**	Batch ID: **R84316**	TestNo: **EPA 120.1**		Analysis Date: **5/16/2012**	SeqNo: **1397144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13100.000	0.20	9977	3050	101	75	125	13080	0.153	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Lab Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007886-001

Client Sample ID: MW-10-186
Collection Date: 5/15/2012 2:28:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120516A** QC Batch: **R84382**				PrepDate:			Analyst: **QBM**
Fluoride	5.0	0.020	2.5		mg/L	5	5/16/2012 10:54 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120516A** QC Batch: **R84382**				PrepDate:			Analyst: **QBM**
Nitrate as N	10	0.060	2.5		mg/L	5	5/16/2012 10:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R84382_F** SampType: **MBLK** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84382**
Client ID: **PBW** Batch ID: **R84382** TestNo: **EPA 300.0** Analysis Date: **5/16/2012** SeqNo: **1399348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R84382_F** SampType: **LCS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84382**
Client ID: **LCSW** Batch ID: **R84382** TestNo: **EPA 300.0** Analysis Date: **5/16/2012** SeqNo: **1399349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.383	0.50	2.500	0	95.3	90	110				

Sample ID: **N007886-001BDUP** SampType: **DUP** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84382**
Client ID: **ZZZZZZ** Batch ID: **R84382** TestNo: **EPA 300.0** Analysis Date: **5/16/2012** SeqNo: **1399351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	4.875	2.5						4.955	1.63	20	

Sample ID: **N007886-001BMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84382**
Client ID: **ZZZZZZ** Batch ID: **R84382** TestNo: **EPA 300.0** Analysis Date: **5/16/2012** SeqNo: **1399352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	16.685	2.5	12.50	4.955	93.8	80	120				

Sample ID: **N007886-001BMSD** SampType: **MSD** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84382**
Client ID: **ZZZZZZ** Batch ID: **R84382** TestNo: **EPA 300.0** Analysis Date: **5/16/2012** SeqNo: **1399355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	16.580	2.5	12.50	4.955	93.0	80	120	16.69	0.631	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DQ Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84382_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84382**
Client ID: **PBW**	Batch ID: **R84382**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2012**	SeqNo: **1399360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84382_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84382**
Client ID: **LCSW**	Batch ID: **R84382**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2012**	SeqNo: **1399361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.383	0.50	2.500	0	95.3	90	110				

Sample ID: **N007886-001BDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84382**
Client ID: **ZZZZZZ**	Batch ID: **R84382**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2012**	SeqNo: **1399363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	10.270	2.5						10.44	1.69	20	

Sample ID: **N007886-001BMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84382**
Client ID: **ZZZZZZ**	Batch ID: **R84382**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2012**	SeqNo: **1399364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	23.240	2.5	12.50	10.44	102	80	120				

Sample ID: **N007886-001BMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84382**
Client ID: **ZZZZZZ**	Batch ID: **R84382**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2012**	SeqNo: **1399367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	22.910	2.5	12.50	10.44	99.7	80	120	23.24	1.43	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Lab Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007886-001

Client Sample ID: MW-10-186
Collection Date: 5/15/2012 2:28:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120518A**	QC Batch: **39796**			PrepDate:	**5/17/2012**		Analyst: **CEI**
Molybdenum	39	0.074	0.50		µg/L	1	5/18/2012 12:21 PM
Selenium	6.2	0.084	0.50		µg/L	1	5/18/2012 12:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39796**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **PBW**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39796**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **LCSW**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.622	0.50	10.00	0	96.2	85	115				
Selenium	9.621	0.50	10.00	0	96.2	85	115				

Sample ID: **N007887-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **ZZZZZZ**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.018	0.50	10.00	8.264	108	75	125				
Selenium	12.181	0.50	10.00	2.228	99.5	75	125				

Sample ID: **N007887-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **ZZZZZZ**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.927	0.50	10.00	8.264	107	75	125	19.02	0.482	20	
Selenium	11.909	0.50	10.00	2.228	96.8	75	125	12.18	2.26	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DQ Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL **CHAIN OF CUSTODY RECORD** *5/15/2012 3:34:15 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/15/2012
COC Number: 19

				Containers:	1Liter Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	4°C	4°C			
				Filtered:	NA	Field	NA	NA			
				Holding Time:	30	180	2	2			
	DATE	TIME	Matrix		Extra (*)	Metals (6020AFF) Field Filtered Mo,Se	Specific Conductance (E120.1)	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-10-186	5/15/2012	14:28	Water			X	X	X	NJ007886-001	2	
MW-58BR-UPR-160-1	5/15/2012	10:40	Water		X		X			2	
									TOTAL NUMBER OF CONTAINERS	4	

	Signatures	Date/Time
Approved by		
Sampled by		5-15-12 1606
Relinquished by		
Received by		5/15/12 @ 1606
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1.8°C
Airbill No: ICE 1R#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/15/2012	Workorder:	N007886
Rep sample Temp (Deg C):	1.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/16/12

Reviewed By:

CH2MHILL **CHAIN OF CUSTODY RECORD** *5/15/2012 3:34:15 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/15/2012
COC Number: 19

				Container:	1Liter Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	4°C	4°C			
				Filtered:	NA	Field	NA	NA			
				Holding Time:	30	180	2	2			
	DATE	TIME	Matrix		Extra (*)	Metals (6020AFF) Field Filtered Mo,Se	Specific Conductance (E120.1)	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-10-186	5/15/2012	14:28	Water			X	X	X		2	
MW-58BR-UPR-160-1	5/15/2012	10:40	Water		X		X			2	
									TOTAL NUMBER OF CONTAINERS	4	

	Signatures	Date/Time
Approved by		
Sampled by		5-15-12 1606
Relinquished by		
Received by		
Relinquished by		5/15/12 @ 1606
Received by		

Shipping Details
Method of Shipment: courier
On Ice: yes / no
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007886-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 2.089 * 5

= 10.445 mg/L

Reporting **N007886-001B**, results in two significant figures,

Nitrate, mg/L = 10 mg/L

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007886-001A**, the concentration in ug/L is calculated as follows:

Molybdenum, ug/L = 38.605023167 * 1 * (25/25)

= 38.605023167 ug/L

Reporting results in two significant figures,

Molybdenum, ug/L = 39

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007886
Test Method: EPA 6020
Analysis Date: 05/18/12

Matrix: Water
Batch No.: 39796

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to analytes with a calc. value < 25X the RL. PS @ 2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007887-001B-DT 5X	Arsenic	ug/L	2.646952146	PASSED	2.464056591	-7.42%	10
N007887-001B-DT 5X	Manganese	ug/L	115.9549388	PASSED	108.9732392	-6.41%	10
N007887-001B-DT 5X	Molybdenum	µg/L	8.379419925	NA	8.264310451	-1.39%	10
N007887-001B-DT 5X	Selenium	µg/L	1.971698253	NA	2.228376055	11.52%	10

Note: NA - Not applicable

Advanced Technology Laboratories, Inc.

Date: *29-May-12*

CLIENT: CH2M HILL
Work Order: N007886
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007887-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84336**
Client ID: **ZZZZZZ**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.307	1.0	20.00	8.264	115	75	125				
Selenium	24.249	1.0	20.00	2.228	110	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

June 12, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007896

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

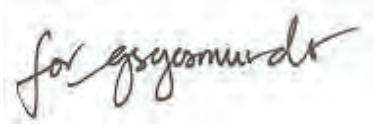
Enclosed are the results for sample(s) received on May 16, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007896

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc.

Date: *12-Jun-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007896
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007896-001A	MW-24BR-186	Water	5/16/2012 12:19:00 PM	5/16/2012	5/30/2012
N007896-002A	MW-31-060-186	Water	5/16/2012 9:18:00 AM	5/16/2012	5/30/2012
N007896-002B	MW-31-060-186	Water	5/16/2012 9:18:00 AM	5/16/2012	5/30/2012
N007896-003A	MW-58BR-LWR-160-186	Water	5/16/2012 11:30:00 AM	5/16/2012	5/30/2012
N007896-003B	MW-58BR-LWR-160-186	Water	5/16/2012 11:30:00 AM	5/16/2012	5/30/2012
N007896-004A	TW-01-186	Water	5/16/2012 11:16:00 AM	5/16/2012	5/30/2012
N007896-004B	TW-01-186	Water	5/16/2012 11:16:00 AM	5/16/2012	5/30/2012

CLIENT: CH2M HILL
Lab Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007896-001

Client Sample ID: MW-24BR-186
Collection Date: 5/16/2012 12:19:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120517A**	QC Batch: **R84318**			PrepDate:			Analyst: **KAB**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/17/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007896-002

Client Sample ID: MW-31-060-186
Collection Date: 5/16/2012 9:18:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120517A**	QC Batch: **R84318**			PrepDate:			Analyst: **KAB**
Specific Conductance	4000	0.10	0.10		umhos/cm	1	5/17/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *12-Jun-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-LWR-160-186
Lab Order:	N007896	**Collection Date:**	5/16/2012 11:30:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007896-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120517A**	QC Batch: **R84318**			PrepDate:			Analyst: **KAB**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/17/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007896-004

Client Sample ID: TW-01-186
Collection Date: 5/16/2012 11:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120517A**	QC Batch: **R84318**			PrepDate:			Analyst: **KAB**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	5/17/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84318** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84318**
Client ID: **LCSW** Batch ID: **R84318** TestNo: **EPA 120.1** Analysis Date: **5/17/2012** SeqNo: **1397159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1411.000	0.10	1411	0	100	85	115				

Sample ID: **N007896-002B-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84318**
Client ID: **ZZZZZZ** Batch ID: **R84318** TestNo: **EPA 120.1** Analysis Date: **5/17/2012** SeqNo: **1397162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3960.000	0.10						3970	0.252	10	

Sample ID: **N007896-002B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84318**
Client ID: **ZZZZZZ** Batch ID: **R84318** TestNo: **EPA 120.1** Analysis Date: **5/17/2012** SeqNo: **1397164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14320.000	0.20	9977	3970	104	75	125				

Sample ID: **N007896-002B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84318**
Client ID: **ZZZZZZ** Batch ID: **R84318** TestNo: **EPA 120.1** Analysis Date: **5/17/2012** SeqNo: **1397165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14320.000	0.20	9977	3970	104	75	125	14320	0	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Lab Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007896-004

Client Sample ID: TW-01-186
Collection Date: 5/16/2012 11:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120517A**	QC Batch: **R84387**			PrepDate:			Analyst: **QBM**
Nitrate as N	22	0.12	5.0		mg/L	10	5/17/2012 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84387_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84387**
Client ID: **PBW** Batch ID: **R84387** TestNo: **EPA 300.0** Analysis Date: **5/17/2012** SeqNo: **1399416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84387_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84387**
Client ID: **LCSW** Batch ID: **R84387** TestNo: **EPA 300.0** Analysis Date: **5/17/2012** SeqNo: **1399417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.355	0.50	2.500	0	94.2	90	110				

Sample ID: **N007896-004BDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84387**
Client ID: **ZZZZZZ** Batch ID: **R84387** TestNo: **EPA 300.0** Analysis Date: **5/17/2012** SeqNo: **1399419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	21.180	5.0						21.57	1.82	20	

Sample ID: **N007896-004BMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84387**
Client ID: **ZZZZZZ** Batch ID: **R84387** TestNo: **EPA 300.0** Analysis Date: **5/17/2012** SeqNo: **1399420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	47.400	5.0	25.00	21.57	103	80	120				

Sample ID: **N007896-004BMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84387**
Client ID: **ZZZZZZ** Batch ID: **R84387** TestNo: **EPA 300.0** Analysis Date: **5/17/2012** SeqNo: **1399421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	47.670	5.0	25.00	21.57	104	80	120	47.40	0.568	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Lab Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007896-002

Client Sample ID: MW-31-060-186
Collection Date: 5/16/2012 9:18:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120518A**	QC Batch: **39796**				PrepDate:	**5/17/2012**	Analyst: **CEI**
Arsenic	1.2	0.035	0.10		µg/L	1	5/18/2012 12:30 PM
Manganese	ND	0.16	0.50		µg/L	1	5/18/2012 12:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Lab Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007896-004

Client Sample ID: TW-01-186
Collection Date: 5/16/2012 11:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_120518A**	QC Batch: **39796**				PrepDate:	**5/17/2012**	Analyst: **CEI**
Molybdenum	15	0.074	0.50		µg/L	1	5/18/2012 12:55 PM
Selenium	22	0.084	0.50		µg/L	1	5/18/2012 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39796**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **PBW**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39796**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **LCSW**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.164	0.10	10.00	0	91.6	85	115				
Manganese	97.117	0.50	100.0	0	97.1	85	115				
Molybdenum	9.622	0.50	10.00	0	96.2	85	115				
Selenium	9.621	0.50	10.00	0	96.2	85	115				

Sample ID: **N007887-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **ZZZZZZ**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.458	0.10	10.00	2.464	99.9	75	125				
Manganese	202.298	0.50	100.0	109.0	93.3	75	125				
Molybdenum	19.018	0.50	10.00	8.264	108	75	125				
Selenium	12.181	0.50	10.00	2.228	99.5	75	125				

Sample ID: **N007887-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/17/2012**	RunNo: **84336**
Client ID: **ZZZZZZ**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.444	0.10	10.00	2.464	99.8	75	125	12.46	0.116	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007887-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/17/2012** RunNo: **84336**
Client ID: **ZZZZZZ** Batch ID: **39796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/18/2012** SeqNo: **1398017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	196.678	0.50	100.0	109.0	87.7	75	125	202.3	2.82	20	
Molybdenum	18.927	0.50	10.00	8.264	107	75	125	19.02	0.482	20	
Selenium	11.909	0.50	10.00	2.228	96.8	75	125	12.18	2.26	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CH2MHILL **CHAIN OF CUSTODY RECORD** *5/16/2012 2:05:13 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/16/2012
COC Number: 20

				Container:	1Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
				Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
				Filtered:	NA	Field	Field	Field	NA	NA			
				Holding Time:	30	180	180	180	2	2			
	DATE	TIME	Matrix		Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-24BR-186	5/16/2012	12:19	Water						X		ND07896 -1	1	
MW-31-060-186	5/16/2012	9:18	Water			X	X		X		-2	2	
MW-58BR-LWR-160-	5/16/2012	11:30	Water		X				X		-3	2	
TW-01-186	5/16/2012	11:16	Water					X	X	X	-4	2	
											TOTAL NUMBER OF CONTAINERS	7	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		5-16-12 1620
Received by		
Relinquished by		5/16/12@1625
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 4.1°C
Airbill No: 1CE 1RH2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

cc

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/16/2012	Workorder:	N007896
Rep sample Temp (Deg C):	4.1	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	NONE
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		5/21/12

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance Issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/18/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007896-004B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 2.157 * 10

= 21.57 mg/L

Reporting **N007896-004B**, results in two significant figures,

Nitrate, mg/L = 22 mg/L

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Molybdenum concentration, in ug/L, in the original sample as follows:

Molybdenum, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007896-004A**, the concentration in ug/L is calculated as follows:

Molybdenum, ug/L = 14.658573 * 1 * (25/25)

= 14.658573 ug/L

Reporting results in two significant figures,

Molybdenum, ug/L = 15

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007896
Test Method: EPA 6020
Analysis Date: 05/18/12

Matrix: Water
Batch No.: 39796

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to analytes with a calc. value < 25X the RL. PS @ 2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007887-001B-DT 5X	Arsenic	ug/L	2.646952146	PASSED	2.464056591	-7.42%	10
N007887-001B-DT 5X	Manganese	ug/L	115.9549388	PASSED	108.9732392	-6.41%	10
N007887-001B-DT 5X	Molybdenum	µg/L	8.379419925	NA	8.264310451	-1.39%	10
N007887-001B-DT 5X	Selenium	µg/L	1.971698253	NA	2.228376055	11.52%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N007896
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007887-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84336**
Client ID: **ZZZZZZ**	Batch ID: **39796**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2012**	SeqNo: **1398015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.920	0.20	20.00	2.464	107	75	125				
Manganese	310.916	1.0	200.0	109.0	101	75	125				
Molybdenum	31.307	1.0	20.00	8.264	115	75	125				
Selenium	24.249	1.0	20.00	2.228	110	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

May 31, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007902

RE: PG&E Topock, 423575.MP.02.GM.0

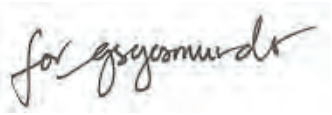
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 17, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007902

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020:

Dilution was necessary due to failing internal standards at no dilution.

Analytical Comments for EPA 300.0:

Dilution was necessary for sample MW-60BR-245-186 due to high concentration of other non-target analyte.

Advanced Technology Laboratories, Inc.

Date: *31-May-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007902
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007902-001A	MW-129-186	Water	5/17/2012 7:15:00 AM	5/17/2012	5/31/2012
N007902-001B	MW-129-186	Water	5/17/2012 7:15:00 AM	5/17/2012	5/31/2012
N007902-001C	MW-129-186	Water	5/17/2012 7:15:00 AM	5/17/2012	5/31/2012
N007902-002A	MW-60BR-245-186	Water	5/17/2012 9:06:00 AM	5/17/2012	5/31/2012
N007902-002B	MW-60BR-245-186	Water	5/17/2012 9:06:00 AM	5/17/2012	5/31/2012
N007902-002C	MW-60BR-245-186	Water	5/17/2012 9:06:00 AM	5/17/2012	5/31/2012
N007902-003A	MW-70BR-225-186	Water	5/17/2012 1:34:00 PM	5/17/2012	5/31/2012
N007902-003B	MW-70BR-225-186	Water	5/17/2012 1:34:00 PM	5/17/2012	5/31/2012
N007902-003C	MW-70BR-225-186	Water	5/17/2012 1:34:00 PM	5/17/2012	5/31/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Lab Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007902-001

Client Sample ID: MW-129-186
Collection Date: 5/17/2012 7:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120518A**	QC Batch: **R84320**			PrepDate:			Analyst: **KAB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	5/18/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007902-002

Client Sample ID: MW-60BR-245-186
Collection Date: 5/17/2012 9:06:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120518A**	QC Batch: **R84320**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/18/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-186
Lab Order:	N007902	**Collection Date:**	5/17/2012 1:34:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007902-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120518A**	QC Batch: **R84320**			PrepDate:			Analyst: **KAB**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	5/18/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-84320** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84320**
Client ID: **LCSW** Batch ID: **R84320** TestNo: **EPA 120.1** Analysis Date: **5/18/2012** SeqNo: **1397181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1415.000	0.10	1411	0	100	85	115				

Sample ID: **N007902-001C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84320**
Client ID: **ZZZZZZ** Batch ID: **R84320** TestNo: **EPA 120.1** Analysis Date: **5/18/2012** SeqNo: **1397183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13810.000	0.10						13800	0.0724	10	

Sample ID: **N007902-001C-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84320**
Client ID: **ZZZZZZ** Batch ID: **R84320** TestNo: **EPA 120.1** Analysis Date: **5/18/2012** SeqNo: **1397184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	117200.000	0.20	99900	13800	104	75	125				

Sample ID: **N007902-001C-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **84320**
Client ID: **ZZZZZZ** Batch ID: **R84320** TestNo: **EPA 120.1** Analysis Date: **5/18/2012** SeqNo: **1397185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	117200.000	0.20	99900	13800	104	75	125	117200	0	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-186
Lab Order:	N007902	**Collection Date:**	5/17/2012 7:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007902-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120518A**	QC Batch: **R84428**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.6	0.060	2.5		mg/L	5	5/18/2012 11:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-186
Lab Order:	N007902	**Collection Date:**	5/17/2012 9:06:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007902-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120518A**	QC Batch: **R84428**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/18/2012 11:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-186
Lab Order:	N007902	**Collection Date:**	5/17/2012 1:34:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007902-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120518A**	QC Batch: **R84428**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.6	0.060	2.5		mg/L	5	5/18/2012 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84428_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84428**
Client ID: **PBW** Batch ID: **R84428** TestNo: **EPA 300.0** Analysis Date: **5/18/2012** SeqNo: **1400790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84428_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84428**
Client ID: **LCSW** Batch ID: **R84428** TestNo: **EPA 300.0** Analysis Date: **5/18/2012** SeqNo: **1400791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.406	0.50	2.500	0	96.2	90	110				

Sample ID: **N007901-002CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84428**
Client ID: **ZZZZZZ** Batch ID: **R84428** TestNo: **EPA 300.0** Analysis Date: **5/18/2012** SeqNo: **1400798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	18.665	2.5	12.50	6.495	97.4	80	120				

Sample ID: **N007901-002CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84428**
Client ID: **ZZZZZZ** Batch ID: **R84428** TestNo: **EPA 300.0** Analysis Date: **5/18/2012** SeqNo: **1400799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	18.840	2.5	12.50	6.495	98.8	80	120	18.66	0.933	20	

Sample ID: **N007901-003CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **84428**
Client ID: **ZZZZZZ** Batch ID: **R84428** TestNo: **EPA 300.0** Analysis Date: **5/18/2012** SeqNo: **1400801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	6.400	2.5						6.570	2.62	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Lab Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007902-001

Client Sample ID: MW-129-186
Collection Date: 5/17/2012 7:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120522A**	QC Batch: **39823**			PrepDate:	**5/21/2012**		Analyst: **CEI**
Arsenic	2.1	0.035	0.10		µg/L	1	5/22/2012 04:05 PM
Manganese	ND	0.16	0.50		µg/L	1	5/22/2012 04:05 PM
Molybdenum	18	0.37	2.5		µg/L	5	5/22/2012 05:00 PM
Selenium	2.6	0.084	0.50		µg/L	1	5/22/2012 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-186
Lab Order:	N007902	**Collection Date:**	5/17/2012 9:06:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007902-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120522A**	QC Batch: **39823**			PrepDate:	**5/21/2012**		Analyst: **CEI**
Arsenic	8.8	0.035	0.10		µg/L	1	5/22/2012 04:10 PM
Manganese	12	0.16	0.50		µg/L	1	5/22/2012 04:10 PM
Molybdenum	56	0.37	2.5		µg/L	5	5/22/2012 05:05 PM
Selenium	ND	0.42	2.5		µg/L	5	5/22/2012 05:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Lab Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007902-003

Client Sample ID: MW-70BR-225-186
Collection Date: 5/17/2012 1:34:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120522A**	QC Batch: **39823**			PrepDate:	**5/21/2012**		Analyst: **CEI**
Arsenic	2.0	0.035	0.10		µg/L	1	5/22/2012 04:16 PM
Manganese	ND	0.16	0.50		µg/L	1	5/22/2012 04:16 PM
Molybdenum	18	0.37	2.5		µg/L	5	5/22/2012 05:10 PM
Selenium	ND	0.42	2.5		µg/L	5	5/22/2012 05:10 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: CH2M HILL
Work Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39823**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **PBW**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39823**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **LCSW**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.382	0.10	10.00	0	93.8	85	115				
Manganese	94.908	0.50	100.0	0	94.9	85	115				
Molybdenum	9.702	0.50	10.00	0	97.0	85	115				
Selenium	9.511	0.50	10.00	0	95.1	85	115				

Sample ID: **N007900-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.838	0.10	10.00	3.810	100	75	125				
Molybdenum	12.331	0.50	10.00	2.317	100	75	125				
Selenium	8.725	0.50	10.00	0	87.2	75	125				

Sample ID: **N007900-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.715	0.10	10.00	3.810	99.1	75	125	13.84	0.889	20	
Molybdenum	12.498	0.50	10.00	2.317	102	75	125	12.33	1.35	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007900-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.070	0.50	10.00	0	90.7	75	125	8.725	3.88	20	

Sample ID: **N007900-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	341.115	2.5	100.0	259.2	81.9	75	125				

Sample ID: **N007900-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/21/2012**	RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**	SeqNo: **1398900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	346.648	2.5	100.0	259.2	87.5	75	125	341.1	1.61	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

5/17/2012 4:16:28 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/17/2012
COC Number: 22

			Container:	1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	NA	NA			
			Holding Time:	30	180	180	2	2			
	DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	N007902	Number of Containers	COMMENTS
MW-129-186	5/17/2012	7:15	Water	X	X	X	X	X	-1	3	
MW-60BR-245-186	5/17/2012	9:06	Water	X	X	X	X	X	-2	3	
MW-70BR-225-186	5/17/2012	13:34	Water	X	X	X	X	X	-3	3	
									TOTAL NUMBER OF CONTAINERS	9	

	Signatures	Date/Time
Approved by		5-17-12
Sampled by		1640
Relinquished by		
Received by	PMGalay	5/17/12 1700
Relinquished by	PMGalay	5/17/12 1940
Received by		5/17/12 1940

Shipping Details

Method of Shipment: FedExcourier
On Ice: yes / no 2.8 oC
Airbill No: IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/17/2012	Workorder:	N007902
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/18/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007902-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L = 0.730* 5

= 3.65 mg/L

Reporting **N007902-001C**, results in two significant figures,

Nitrate, mg/L = 3.6 mg/L

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007902-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.0959224752 * 1 * (25/25)

= 2.0959224752 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 2.1

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007902
Test Method: EPA 6020
Analysis Date: 05/22/12

Matrix: Water
Batch No.: 39823

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to Mo andSe, the calc. values were < 25X the RL. PS @ 2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007900-001B-DT 5X	Arsenic	µg/L	3.927848562	PASSED	3.809810646	-3.10%	10
N007900-001B-DT 25X	Manganese	µg/L	260.2809714	PASSED	259.1724521	-0.43%	10
N007900-001B-DT 5X	Molybdenum	µg/L	2.495662743	NA	2.317296861	-7.70%	10
N007900-001B-DT 5X	Selenium	µg/L	0	NA	0	#DIV/0!	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N007902
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007900-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**			SeqNo: **1398887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.724	0.20	20.00	3.810	110	75	125				
Molybdenum	24.952	1.0	20.00	2.317	113	75	125				
Selenium	21.132	1.0	20.00	0	106	75	125				

Sample ID: **N007900-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **84361**
Client ID: **ZZZZZZ**	Batch ID: **39823**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/22/2012**			SeqNo: **1398898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	744.931	2.5	500.0	259.2	97.2	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

June 04, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N007933

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 24, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007933

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020:

Dilution was necessary due to failing internal standards at no dilution.

Arsenic was reported at 5X since MSD sample did not meet internal standard limit at no dilution.

Advanced Technology Laboratories, Inc.

Date: *04-Jun-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007933
Contract No: 2012-GMP-186-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007933-001A	MW-66BR-270-186	Water	5/24/2012 7:25:00 AM	5/24/2012	6/4/2012
N007933-001B	MW-66BR-270-186	Water	5/24/2012 7:25:00 AM	5/24/2012	6/4/2012
N007933-001C	MW-66BR-270-186	Water	5/24/2012 7:25:00 AM	5/24/2012	6/4/2012

CLIENT: CH2M HILL
Lab Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007933-001

Client Sample ID: MW-66BR-270-186
Collection Date: 5/24/2012 7:25:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120525A**	QC Batch: **R84393**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/25/2012

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R84393**	SampType: **LCS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84393**
Client ID: **LCSW**	Batch ID: **R84393**	TestNo: **EPA 120.1**		Analysis Date: **5/25/2012**	SeqNo: **1399594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1410.000	0.10	1411	0	99.9	85	115				

Sample ID: **N007933-001C-DUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84393**
Client ID: **ZZZZZZ**	Batch ID: **R84393**	TestNo: **EPA 120.1**		Analysis Date: **5/25/2012**	SeqNo: **1399596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17430.000	0.10						17440	0.0574	10	

Sample ID: **N007933-001C-MS**	SampType: **MS**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84393**
Client ID: **ZZZZZZ**	Batch ID: **R84393**	TestNo: **EPA 120.1**		Analysis Date: **5/25/2012**	SeqNo: **1399597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	120000.000	0.20	99900	17440	103	75	125				

Sample ID: **N007933-001C-MSD**	SampType: **MSD**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **84393**
Client ID: **ZZZZZZ**	Batch ID: **R84393**	TestNo: **EPA 120.1**		Analysis Date: **5/25/2012**	SeqNo: **1399598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	120000.000	0.20	99900	17440	103	75	125	120000	0	10	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-186
Lab Order:	N007933	**Collection Date:**	5/24/2012 7:25:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007933-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120525A**	QC Batch: **R84447**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	5/25/2012 12:41 PM

CLIENT: CH2M HILL
Work Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84447_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84447**
Client ID: **PBW**	Batch ID: **R84447**	TestNo: **EPA 300.0**		Analysis Date: **5/25/2012**	SeqNo: **1401467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84447_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84447**
Client ID: **LCSW**	Batch ID: **R84447**	TestNo: **EPA 300.0**		Analysis Date: **5/25/2012**	SeqNo: **1401468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.373	0.50	2.500	0	94.9	90	110				

Sample ID: **N007933-001CDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84447**
Client ID: **ZZZZZZ**	Batch ID: **R84447**	TestNo: **EPA 300.0**		Analysis Date: **5/25/2012**	SeqNo: **1401470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	2.5						0	0	20	

Sample ID: **N007933-001CMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84447**
Client ID: **ZZZZZZ**	Batch ID: **R84447**	TestNo: **EPA 300.0**		Analysis Date: **5/25/2012**	SeqNo: **1401471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	11.470	2.5	12.50	0	91.8	80	120				

Sample ID: **N007933-001CMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84447**
Client ID: **ZZZZZZ**	Batch ID: **R84447**	TestNo: **EPA 300.0**		Analysis Date: **5/25/2012**	SeqNo: **1401472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	11.425	2.5	12.50	0	91.4	80	120	11.47	0.393	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Lab Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007933-001

Client Sample ID: MW-66BR-270-186
Collection Date: 5/24/2012 7:25:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120529A**	QC Batch: **39854**			PrepDate:	**5/25/2012**		Analyst: **CEI**
Arsenic	ND	0.17	0.50		µg/L	5	5/29/2012 12:40 PM
Manganese	73	0.16	0.50		µg/L	1	5/29/2012 12:35 PM
Molybdenum	27	0.37	2.5		µg/L	5	5/29/2012 12:40 PM
Selenium	ND	0.42	2.5		µg/L	5	5/29/2012 12:40 PM

CLIENT: CH2M HILL
Work Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39854**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/25/2012**	RunNo: **84409**
Client ID: **PBW**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**	SeqNo: **1399898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.037	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39854**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/25/2012**	RunNo: **84409**
Client ID: **LCSW**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**	SeqNo: **1399899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.385	0.10	10.00	0	93.9	85	115				
Manganese	98.546	0.50	100.0	0	98.5	85	115				
Molybdenum	9.586	0.50	10.00	0	95.9	85	115				
Selenium	9.265	0.50	10.00	0	92.7	85	115				

Sample ID: **N007933-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/25/2012**	RunNo: **84409**
Client ID: **ZZZZZZ**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**	SeqNo: **1399903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	160.614	0.50	100.0	73.24	87.4	75	125				

Sample ID: **N007933-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/25/2012**	RunNo: **84409**
Client ID: **ZZZZZZ**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**	SeqNo: **1399904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	159.033	0.50	100.0	73.24	85.8	75	125	160.6	0.989	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007933-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/25/2012**	RunNo: **84409**
Client ID: **ZZZZZZ**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**	SeqNo: **1399907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.973	0.50	10.00	0.2057	97.7	75	125				
Molybdenum	36.768	2.5	10.00	26.85	99.2	75	125				
Selenium	8.760	2.5	10.00	0	87.6	75	125				

Sample ID: **N007933-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/25/2012**	RunNo: **84409**
Client ID: **ZZZZZZ**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**	SeqNo: **1399910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.566	0.50	10.00	0.2057	93.6	75	125	9.973	4.17	20	
Molybdenum	37.143	2.5	10.00	26.85	103	75	125	36.77	1.01	20	
Selenium	8.531	2.5	10.00	0	85.3	75	125	8.760	2.65	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

5/24/2012 8:12:54 AM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-186-Q2
Turnaround Time 10 Days
Shipping Date: 5/24/2012
COC Number: 33

	DATE	TIME	Matrix	Extra (*)	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				NA	Field	Field	NA	NA			
Holding Time:				30	180	180	2	2			
MW-66BR-270-186	5/24/2012	7:25	Water	X	X	X	X	X	N007933-1	3	
									TOTAL NUMBER OF CONTAINERS	3	

	Signatures	Date/Time
Approved by		5-24-12
Sampled by		1450
Relinquished by		
Received by		5/24/12 / 1410
Relinquished by	S-PMGalan	5/24/12 / 1610
Received by	MBCARTIN	5/29/12 @1659

Shipping Details
Method of Shipment: courier
On Ice: ~~yes~~ / no 2.4°C
Airbill No: IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 9 to May 11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/24/2012	Workorder:	N007933
Rep sample Temp (Deg C):	2.4	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 5/25/12

Reviewed By: JB

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007933-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0 * 5
	=	0 mg/L
Nitrate, mg/L	**=**	**ND**

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Manganese concentration, in ug/L, in the original sample as follows:

Manganese, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007933-001B**, the concentration in ug/L is calculated as follows:

Manganese, ug/L = 73.2429894930607 * 1 * (25/25)

= 73.2429894930607 ug/L

Reporting results in two significant figures,

Manganese, ug/L = 73

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007933
Test Method: EPA 6020
Analysis Date: 05/29/12

Matrix: Water
Batch No.: 39854

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to As and Se with calculated values < 25X the RL. PS @ 2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007933-001B-DT 25X	Arsenic	µg/L	0	NA	0.205732147	100.00%	10
N007933-001B-DT 5X	Manganese	µg/L	77.45662655	PASSED	73.24298949	-5.75%	10
N007933-001B-DT 25X	Molybdenum	µg/L	26.56070708	PASSED	26.84684267	1.07%	10
N007933-001B-DT 25X	Selenium	µg/L	0	NA	0	#DIV/0!	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N007933
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007933-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **84409**			
Client ID: **ZZZZZZ**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**			SeqNo: **1399902**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	261.348	1.0	200.0	73.24	94.1	75	125				

Sample ID: **N007933-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **84409**			
Client ID: **ZZZZZZ**	Batch ID: **39854**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/29/2012**			SeqNo: **1399906**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.519	0.50	50.00	0.2057	103	75	125				
Molybdenum	82.948	2.5	50.00	26.85	112	75	125				
Selenium	45.921	2.5	50.00	0	91.8	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

July 12, 2012

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N008060

RE: PG&E Topock, 428373.FS.05

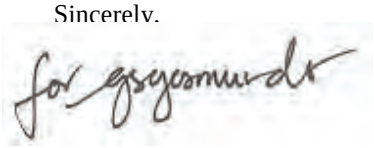
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on June 28, 2012 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Jose Tenorio Jr.
Laboratory Director

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CLIENT: CH2M HILL
Project: PG&E Topock, 428373.FS.05
Lab Order: N008060

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Cyanide and Silica were subcontracted to Truesdail- Tustin,CA.

Analytical Comments for EPA 6010B_Dissolved :

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc.
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Advanced Technology Laboratories, Inc.

Date: *12-Jul-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 428373.FS.05
Lab Order: N008060
Contract No: 2012-HNWR-00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N008060-001A	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001B	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001C	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001D	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001E	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001F	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001G	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012
N008060-001H	HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	6/28/2012	7/12/2012

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CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_120703A**	QC Batch: **40097**			PrepDate:	**7/2/2012**		Analyst: **KAB**
Total Dissolved Solids (Residue, Filterable)	440	10	10		mg/L	1	7/3/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID: **MB-40097**	SampType: **MBLK**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date:	RunNo: **84690**
Client ID: **PBW**	Batch ID: **40097**	TestNo: **SM2540C**		Analysis Date: **7/3/2012**	SeqNo: **1410189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: **LCS-40097**	SampType: **LCS**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date:	RunNo: **84690**
Client ID: **LCSW**	Batch ID: **40097**	TestNo: **SM2540C**		Analysis Date: **7/3/2012**	SeqNo: **1410190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	988.000	10	1000	0	98.8	80	120				

Sample ID: **N008064-002D-DUP**	SampType: **DUP**	TestCode: **160.1_2540C_**	Units: **mg/L**	Prep Date: **7/2/2012**	RunNo: **84690**
Client ID: **ZZZZZZ**	Batch ID: **40097**	TestNo: **SM2540C**		Analysis Date: **7/3/2012**	SeqNo: **1410195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1825.000	25						1878	2.84	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_120702B**	QC Batch: **40096**			PrepDate:	**7/2/2012**		Analyst: **KAB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	7/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: **MB-40096**	SampType: **MBLK**	TestCode: **160.2_2540D_**	Units: **mg/L**	Prep Date:	RunNo: **84686**
Client ID: **PBW**	Batch ID: **40096**	TestNo: **SM2540D**		Analysis Date: **7/2/2012**	SeqNo: **1410159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID: **LCS-40096**	SampType: **LCS**	TestCode: **160.2_2540D_**	Units: **mg/L**	Prep Date:	RunNo: **84686**
Client ID: **LCSW**	Batch ID: **40096**	TestNo: **SM2540D**		Analysis Date: **7/2/2012**	SeqNo: **1410160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	985.000	10	1000	0	98.5	80	120				

Sample ID: **N008064-002D-DUP**	SampType: **DUP**	TestCode: **160.2_2540D_**	Units: **mg/L**	Prep Date: **7/2/2012**	RunNo: **84686**
Client ID: **ZZZZZZ**	Batch ID: **40096**	TestNo: **SM2540D**		Analysis Date: **7/2/2012**	SeqNo: **1410165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120628A** QC Batch: **R84669** PrepDate: Analyst: **QBM**							
Hexavalent Chromium	15	0.028	0.40		µg/L	2	6/28/2012 02:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_120703B** QC Batch: **40081** PrepDate: **6/29/2012** Analyst: **CEI**							
Chromium	18	0.17	1.0		µg/L	1	7/3/2012 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R84669**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **84669**
Client ID: **PBW**	Batch ID: **R84669**	TestNo: **EPA 218.6**		Analysis Date: **6/28/2012**	SeqNo: **1409006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R84669**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **84669**
Client ID: **LCSW**	Batch ID: **R84669**	TestNo: **EPA 218.6**		Analysis Date: **6/28/2012**	SeqNo: **1409007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.950	0.20	5.000	0	99.0	90	110				

Sample ID: **N008057-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **84669**
Client ID: **ZZZZZZ**	Batch ID: **R84669**	TestNo: **EPA 218.6**		Analysis Date: **6/28/2012**	SeqNo: **1409009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.697	0.20						4.683	0.280	20	

Sample ID: **N008057-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **84669**
Client ID: **ZZZZZZ**	Batch ID: **R84669**	TestNo: **EPA 218.6**		Analysis Date: **6/28/2012**	SeqNo: **1409010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.639	0.20	1.000	4.683	95.6	90	110				

Sample ID: **N008059-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **84669**
Client ID: **ZZZZZZ**	Batch ID: **R84669**	TestNo: **EPA 218.6**		Analysis Date: **6/28/2012**	SeqNo: **1409012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.017	0.20	1.000	0.02423	99.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
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- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N008059-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **84669**
Client ID: **ZZZZZZ** Batch ID: **R84669** TestNo: **EPA 218.6** Analysis Date: **6/28/2012** SeqNo: **1409013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0.02423	102	90	110	1.017	3.04	20	

Sample ID: **N008058-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **84669**
Client ID: **ZZZZZZ** Batch ID: **R84669** TestNo: **EPA 218.6** Analysis Date: **6/28/2012** SeqNo: **1409015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.753	0.20	1.000	18.85	90.3	90	110				

Sample ID: **N008058-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **84669**
Client ID: **ZZZZZZ** Batch ID: **R84669** TestNo: **EPA 218.6** Analysis Date: **6/28/2012** SeqNo: **1409021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.063	0.20	5.000	9.092	99.4	90	110				

Sample ID: **N008058-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **84669**
Client ID: **ZZZZZZ** Batch ID: **R84669** TestNo: **EPA 218.6** Analysis Date: **6/28/2012** SeqNo: **1409022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.694	0.20	5.000	8.703	99.8	90	110				

Sample ID: **N008060-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **84669**
Client ID: **ZZZZZZ** Batch ID: **R84669** TestNo: **EPA 218.6** Analysis Date: **6/28/2012** SeqNo: **1409023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.361	0.40	10.00	15.37	99.9	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **MB-40081**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **PBW**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **N008059-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.887	1.0	10.00	0.4289	94.6	75	125				

Sample ID: **N008059-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0.4289	96.0	75	125	9.887	1.42	20	

Sample ID: **LCS-40081**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **LCSW**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.526	1.0	10.00	0	105	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Lab Order: N008060
Project: PG&E Topock, 428373.FS.05
Lab ID: N008060-001

Client Sample ID: HNWR-01-006
Collection Date: 6/27/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_120629B**	QC Batch: **R84675**			PrepDate:			Analyst: **KAB**
Alkalinity, Bicarbonate (As CaCO3)	100	1.2	5.0		mg/L	1	6/29/2012
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	6/29/2012
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	6/29/2012
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	6/29/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **LCS-R84675** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **84675**
Client ID: **LCSW** Batch ID: **R84675** TestNo: **SM 2320 B** Analysis Date: **6/29/2012** SeqNo: **1409327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	97.252	5.0	100.0	0	97.3	85	115				
Alkalinity, Total (As CaCO3)	99.366	5.0	100.0	0	99.4	85	115				

Sample ID: **LCSD-R84675** SampType: **LCSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **84675**
Client ID: **LCSS02** Batch ID: **R84675** TestNo: **SM 2320 B** Analysis Date: **6/29/2012** SeqNo: **1409328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	96.195	5.0	100.0	0	96.2	85	115	97.25	1.09	20	
Alkalinity, Total (As CaCO3)	98.309	5.0	100.0	0	98.3	85	115	99.37	1.07	20	

Sample ID: **MB-R84675** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **84675**
Client ID: **PBW** Batch ID: **R84675** TestNo: **SM 2320 B** Analysis Date: **6/29/2012** SeqNo: **1409329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID: **N008060-001C-DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **84675**
Client ID: **ZZZZZZ** Batch ID: **R84675** TestNo: **SM 2320 B** Analysis Date: **6/29/2012** SeqNo: **1409332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	102.537	5.0						103.6	1.03	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	102.537	5.0						103.6	1.03	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **N008060-001C-MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **84675**
Client ID: **ZZZZZZ** Batch ID: **R84675** TestNo: **SM 2320 B** Analysis Date: **6/29/2012** SeqNo: **1409333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	200.846	5.0	100.0	103.6	97.3	75	125				
Alkalinity, Total (As CaCO3)	200.846	5.0	100.0	103.6	97.3	75	125				

Sample ID: **N008060-001C-MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **84675**
Client ID: **ZZZZZZ** Batch ID: **R84675** TestNo: **SM 2320 B** Analysis Date: **6/29/2012** SeqNo: **1409334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	201.903	5.0	100.0	103.6	98.3	75	125	200.8	0.525	20	
Alkalinity, Total (As CaCO3)	201.903	5.0	100.0	103.6	98.3	75	125	200.8	0.525	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT: CH2M HILL
Lab Order: N008060
Project: PG&E Topock, 428373.FS.05
Lab ID: N008060-001

Client Sample ID: HNWR-01-006
Collection Date: 6/27/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120628A** QC Batch: **R84670**				PrepDate:			Analyst: **QBM**
Chloride	130	0.28	10		mg/L	20	6/28/2012 04:26 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120628A** QC Batch: **R84670**				PrepDate:			Analyst: **QBM**
Fluoride	4.0	0.0040	0.50		mg/L	1	6/28/2012 03:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120628A** QC Batch: **R84670**				PrepDate:			Analyst: **QBM**
Sulfate	44	0.16	2.5		mg/L	5	6/28/2012 04:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120628A** QC Batch: **R84670**				PrepDate:			Analyst: **QBM**
Nitrate as N	2.6	0.012	0.50		mg/L	1	6/28/2012 03:16 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **MB-R84670_CL**	SampType: **MBLK**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:				RunNo: **84670**		
Client ID: **PBW**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**				SeqNo: **1409339**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: **LCS-R84670_CL**	SampType: **LCS**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:				RunNo: **84670**		
Client ID: **LCSW**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**				SeqNo: **1409340**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.420	0.50	2.500	0	96.8	90	110				

Sample ID: **N008057-001DDUP**	SampType: **DUP**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:				RunNo: **84670**		
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**				SeqNo: **1409344**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	37.810	5.0						37.61	0.530	20	

Sample ID: **N008057-001DMS**	SampType: **MS**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:				RunNo: **84670**		
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**				SeqNo: **1409345**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	62.090	5.0	25.00	37.61	97.9	80	120				

Sample ID: **N008057-001DMSD**	SampType: **MSD**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:				RunNo: **84670**		
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**				SeqNo: **1409346**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	64.580	5.0	25.00	37.61	108	80	120	62.09	3.93	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R84670_F** SampType: **MBLK** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84670**
Client ID: **PBW** Batch ID: **R84670** TestNo: **EPA 300.0** Analysis Date: **6/28/2012** SeqNo: **1409354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-HR84670_F** SampType: **LCS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84670**
Client ID: **LCSW** Batch ID: **R84670** TestNo: **EPA 300.0** Analysis Date: **6/28/2012** SeqNo: **1409355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.325	0.50	2.500	0	93.0	90	110				

Sample ID: **N008057-001DDUP** SampType: **DUP** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84670**
Client ID: **ZZZZZZ** Batch ID: **R84670** TestNo: **EPA 300.0** Analysis Date: **6/28/2012** SeqNo: **1409357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.691	0.50						0.6760	2.19	20	

Sample ID: **N008057-001DMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84670**
Client ID: **ZZZZZZ** Batch ID: **R84670** TestNo: **EPA 300.0** Analysis Date: **6/28/2012** SeqNo: **1409358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.059	0.50	2.500	0.6760	95.3	80	120				

Sample ID: **N008057-001DMSD** SampType: **MSD** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **84670**
Client ID: **ZZZZZZ** Batch ID: **R84670** TestNo: **EPA 300.0** Analysis Date: **6/28/2012** SeqNo: **1409359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.068	0.50	2.500	0.6760	95.7	80	120	3.059	0.294	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **MB-R84670_SO4**	SampType: **MBLK**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **PBW**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: **LCS-R84670_SO4**	SampType: **LCS**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **LCSW**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.810	0.50	5.000	0	96.2	90	110				

Sample ID: **N008057-001DDUP**	SampType: **DUP**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	41.990	5.0						41.77	0.525	20	

Sample ID: **N008057-001DMS**	SampType: **MS**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	88.630	5.0	50.00	41.77	93.7	80	120				

Sample ID: **N008057-001DMSD**	SampType: **MSD**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	88.270	5.0	50.00	41.77	93.0	80	120	88.63	0.407	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R84670_NO3**	SampType: **MBLK**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **PBW**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.50									

Sample ID: **LCS-R84670_NO3**	SampType: **LCS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **LCSW**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.378	0.50	2.500	0	95.1	90	110				

Sample ID: **N008057-001DDUP**	SampType: **DUP**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	0.192	0.50						0.1660	0	20	

Sample ID: **N008057-001DMS**	SampType: **MS**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.445	0.50	2.500	0.1660	91.2	80	120				

Sample ID: **N008057-001DMSD**	SampType: **MSD**	TestCode: **300W_NO3P**	Units: **mg/L**	Prep Date:	RunNo: **84670**
Client ID: **ZZZZZZ**	Batch ID: **R84670**	TestNo: **EPA 300.0**		Analysis Date: **6/28/2012**	SeqNo: **1409233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.381	0.50	2.500	0.1660	88.6	80	120	2.445	2.65	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
AMMONIA-N							
			SM4500-NH3C				
RunID: **WETCHEM_120702C**	QC Batch: **40076**			PrepDate:	**6/29/2012**		Analyst: **KAB**
Nitrogen, Ammonia (As N)	ND	0.030	0.10		mg/L	1	7/2/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 350.2_4500NH3C_WPGE

Sample ID: **MB-40076** SampType: **MBLK** TestCode: **350.2_4500N** Units: **mg/L** Prep Date: **6/29/2012** RunNo: **84688**
Client ID: **PBW** Batch ID: **40076** TestNo: **SM4500-NH3** Analysis Date: **7/2/2012** SeqNo: **1410221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.10									

Sample ID: **LCS-40076** SampType: **LCS** TestCode: **350.2_4500N** Units: **mg/L** Prep Date: **6/29/2012** RunNo: **84688**
Client ID: **LCSW** Batch ID: **40076** TestNo: **SM4500-NH3** Analysis Date: **7/2/2012** SeqNo: **1410222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	0.974	0.10	1.000	0	97.4	85	115				

Sample ID: **N008060-001E-DUP** SampType: **DUP** TestCode: **350.2_4500N** Units: **mg/L** Prep Date: **6/29/2012** RunNo: **84688**
Client ID: **ZZZZZZ** Batch ID: **40076** TestNo: **SM4500-NH3** Analysis Date: **7/2/2012** SeqNo: **1410224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	0.061	0.10						0.05900	0	20	

Sample ID: **N008060-001E-MS** SampType: **MS** TestCode: **350.2_4500N** Units: **mg/L** Prep Date: **6/29/2012** RunNo: **84688**
Client ID: **ZZZZZZ** Batch ID: **40076** TestNo: **SM4500-NH3** Analysis Date: **7/2/2012** SeqNo: **1410225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.030	0.10	2.000	0.05900	98.6	75	125				

Sample ID: **N008060-001E-MSD** SampType: **MSD** TestCode: **350.2_4500N** Units: **mg/L** Prep Date: **6/29/2012** RunNo: **84688**
Client ID: **ZZZZZZ** Batch ID: **40076** TestNo: **SM4500-NH3** Analysis Date: **7/2/2012** SeqNo: **1410226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	2.031	0.10	2.000	0.05900	98.6	75	125	2.030	0.0492	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM5310C				
RunID: **TOC1_120628B**	QC Batch: **R84672**			PrepDate:			Analyst: **JT**
Organic Carbon, Total	ND	0.073	1.0		mg/L	1	6/28/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T

Sample ID: **MB-R84672**	SampType: **MBLK**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **84672**
Client ID: **PBW**	Batch ID: **R84672**	TestNo: **SM5310C**		Analysis Date: **6/28/2012**	SeqNo: **1409157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R84672**	SampType: **LCS**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **84672**
Client ID: **LCSW**	Batch ID: **R84672**	TestNo: **SM5310C**		Analysis Date: **6/28/2012**	SeqNo: **1409158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	10.304	1.0	10.00	0	103	85	115				

Sample ID: **N008058-001DMS**	SampType: **MS**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **84672**
Client ID: **ZZZZZZ**	Batch ID: **R84672**	TestNo: **SM5310C**		Analysis Date: **6/28/2012**	SeqNo: **1409161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	11.804	1.0	10.00	1.164	106	75	125				

Sample ID: **N008058-001DMSD**	SampType: **MSD**	TestCode: **5310C_W_T**	Units: **mg/L**	Prep Date:	RunNo: **84672**
Client ID: **ZZZZZZ**	Batch ID: **R84672**	TestNo: **SM5310C**		Analysis Date: **6/28/2012**	SeqNo: **1409162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	12.104	1.0	10.00	1.164	109	75	125	11.80	2.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT: CH2M HILL
Lab Order: N008060
Project: PG&E Topock, 428373.FS.05
Lab ID: N008060-001

Client Sample ID: HNWR-01-006
Collection Date: 6/27/2012 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120705E**	QC Batch: **40084**			PrepDate:	**6/29/2012**	Analyst: **JT**	
Aluminum	ND	7.0	50		ug/L	1	7/5/2012 12:06 PM
Barium	110	0.36	3.0		ug/L	1	7/5/2012 12:06 PM
Beryllium	ND	0.12	1.0		ug/L	1	7/5/2012 12:06 PM
Cadmium	ND	0.37	3.0		ug/L	1	7/5/2012 12:06 PM
Cobalt	ND	0.37	3.0		ug/L	1	7/5/2012 12:06 PM
Copper	ND	2.2	5.0		ug/L	1	7/5/2012 12:06 PM
Iron	38	7.2	20		ug/L	1	7/5/2012 12:06 PM
Lead	ND	1.6	10		ug/L	1	7/5/2012 12:06 PM
Molybdenum	9.1	0.60	5.0		ug/L	1	7/5/2012 12:06 PM
Nickel	ND	0.70	5.0		ug/L	1	7/5/2012 12:06 PM
Silver	ND	0.39	3.0		ug/L	1	7/5/2012 12:06 PM
Vanadium	20	0.31	3.0		ug/L	1	7/11/2012 02:37 PM
Zinc	ND	1.4	10		ug/L	1	7/5/2012 12:06 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories, Inc.
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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-40084** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84736**
Client ID: **PBW** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/5/2012** SeqNo: **1412278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	50									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Copper	ND	5.0									
Iron	ND	20									
Lead	ND	10									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **N008060-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84736**
Client ID: **ZZZZZZ** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/5/2012** SeqNo: **1412283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	990.625	50	1000	0	99.1	75	125				
Barium	157.881	3.0	50.00	107.0	102	75	125				
Beryllium	9.914	1.0	10.00	0	99.1	75	125				
Cadmium	10.119	3.0	10.00	0	101	75	125				
Cobalt	10.143	3.0	10.00	0	101	75	125				
Copper	12.343	5.0	10.00	0	123	75	125				
Iron	144.034	20	100.0	37.68	106	75	125				
Lead	50.989	10	50.00	0	102	75	125				
Molybdenum	58.559	5.0	50.00	9.090	98.9	75	125				
Nickel	52.755	5.0	50.00	0	106	75	125				
Silver	7.439	3.0	10.00	0	74.4	75	125				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N008060-001B-MS**	SampType: **MS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **6/29/2012**	RunNo: **84736**
Client ID: **ZZZZZZ**	Batch ID: **40084**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **7/5/2012**	SeqNo: **1412283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	61.748	10	50.00	5.188	113	75	125				

Sample ID: **N008060-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **6/29/2012**	RunNo: **84736**
Client ID: **ZZZZZZ**	Batch ID: **40084**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **7/5/2012**	SeqNo: **1412284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	998.194	50	1000	0	99.8	75	125	990.6	0.761	20	
Barium	159.282	3.0	50.00	107.0	105	75	125	157.9	0.883	20	
Beryllium	9.951	1.0	10.00	0	99.5	75	125	9.914	0.375	20	
Cadmium	10.169	3.0	10.00	0	102	75	125	10.12	0.488	20	
Cobalt	10.234	3.0	10.00	0	102	75	125	10.14	0.887	20	
Copper	12.927	5.0	10.00	0	129	75	125	12.34	4.62	20	S
Iron	146.367	20	100.0	37.68	109	75	125	144.0	1.61	20	
Lead	50.001	10	50.00	0	100	75	125	50.99	1.96	20	
Molybdenum	58.634	5.0	50.00	9.090	99.1	75	125	58.56	0.128	20	
Nickel	52.762	5.0	50.00	0	106	75	125	52.76	0.0133	20	
Silver	7.382	3.0	10.00	0	73.8	75	125	7.439	0.773	20	S
Zinc	61.778	10	50.00	5.188	113	75	125	61.75	0.0500	20	

Sample ID: **LCS-40084**	SampType: **LCS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date: **6/29/2012**	RunNo: **84736**
Client ID: **LCSW**	Batch ID: **40084**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **7/5/2012**	SeqNo: **1412285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	929.511	50	1000	0	93.0	85	115				
Barium	53.993	3.0	50.00	0	108	85	115				
Beryllium	9.647	1.0	10.00	0	96.5	85	115				
Cadmium	10.333	3.0	10.00	0	103	85	115				
Cobalt	10.469	3.0	10.00	0	105	85	115				
Copper	10.635	5.0	10.00	0	106	85	115				
Iron	107.825	20	100.0	0	108	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
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CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-40084** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84736**
Client ID: **LCSW** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/5/2012** SeqNo: **1412285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	52.219	10	50.00	0	104	85	115				
Molybdenum	48.842	5.0	50.00	0	97.7	85	115				
Nickel	53.772	5.0	50.00	0	108	85	115				
Silver	8.961	3.0	10.00	0	89.6	85	115				
Zinc	55.045	10	50.00	0	110	85	115				

Sample ID: **MB-40084** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84759**
Client ID: **PBW** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/11/2012** SeqNo: **1412930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-40084** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84759**
Client ID: **LCSW** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/11/2012** SeqNo: **1412931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.564	3.0	10.00	0	106	85	115				

Sample ID: **N008060-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84759**
Client ID: **ZZZZZZ** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/11/2012** SeqNo: **1412935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	30.627	3.0	10.00	20.24	104	75	125				

Sample ID: **N008060-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **6/29/2012** RunNo: **84759**
Client ID: **ZZZZZZ** Batch ID: **40084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **7/11/2012** SeqNo: **1412936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	30.897	3.0	10.00	20.24	107	75	125	30.63	0.877	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120703B**	QC Batch: **40081**			PrepDate:	**6/29/2012**		Analyst: **CEI**
Antimony	ND	0.084	0.50		µg/L	1	7/3/2012 04:54 PM
Arsenic	16	0.035	0.10		µg/L	1	7/3/2012 04:54 PM
Manganese	1.7	0.16	0.50		µg/L	1	7/3/2012 04:54 PM
Selenium	0.71	0.084	0.50		µg/L	1	7/3/2012 04:54 PM
Thallium	ND	0.075	0.50		µg/L	1	7/3/2012 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-40081** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/29/2012** RunNo: **84702**
Client ID: **PBW** Batch ID: **40081** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **7/3/2012** SeqNo: **1410525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **N008059-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/29/2012** RunNo: **84702**
Client ID: **ZZZZZZ** Batch ID: **40081** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **7/3/2012** SeqNo: **1410532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.540	0.50	10.00	0	105	75	125				
Arsenic	39.772	0.10	10.00	29.35	104	75	125				
Selenium	8.546	0.50	10.00	0	85.5	75	125				
Thallium	10.387	0.50	10.00	0	104	75	125				

Sample ID: **N008059-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/29/2012** RunNo: **84702**
Client ID: **ZZZZZZ** Batch ID: **40081** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **7/3/2012** SeqNo: **1410533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.508	0.50	10.00	0	105	75	125	10.54	0.304	20	
Arsenic	39.835	0.10	10.00	29.35	105	75	125	39.77	0.158	20	
Selenium	8.427	0.50	10.00	0	84.3	75	125	8.546	1.40	20	
Thallium	10.393	0.50	10.00	0	104	75	125	10.39	0.0596	20	

Sample ID: **LCS-40081** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/29/2012** RunNo: **84702**
Client ID: **LCSW** Batch ID: **40081** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **7/3/2012** SeqNo: **1410537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LCS-40081**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **LCSW**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.936	0.50	10.00	0	99.4	85	115				
Arsenic	10.016	0.10	10.00	0	100	85	115				
Manganese	107.727	0.50	100.0	0	108	85	115				
Selenium	9.728	0.50	10.00	0	97.3	85	115				
Thallium	10.175	0.50	10.00	0	102	85	115				

Sample ID: **N008059-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	297.792	2.5	100.0	214.7	83.1	75	125				

Sample ID: **N008059-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	295.552	2.5	100.0	214.7	80.9	75	125	297.8	0.755	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: ***12-Jul-12***

CLIENT:	CH2M HILL	**Client Sample ID:**	HNWR-01-006
Lab Order:	N008060	**Collection Date:**	6/27/2012 11:49:00 AM
Project:	PG&E Topock, 428373.FS.05	**Matrix:**	GROUNDWATER
Lab ID:	N008060-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **AA1_120630B**	QC Batch: **40079**			PrepDate:	**6/29/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	6/30/2012

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories, Inc.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-40079**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84763**
Client ID: **LCSW**	Batch ID: **40079**	TestNo: **EPA 7470A**		Analysis Date: **6/30/2012**	SeqNo: **1413268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.198	0.20	5.000	0	104	85	115				

Sample ID: **MB-40079**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84763**
Client ID: **PBW**	Batch ID: **40079**	TestNo: **EPA 7470A**		Analysis Date: **6/30/2012**	SeqNo: **1413272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N008060-001B-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84763**
Client ID: **ZZZZZZ**	Batch ID: **40079**	TestNo: **EPA 7470A**		Analysis Date: **6/30/2012**	SeqNo: **1413295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.374	0.20	5.000	0.08499	106	75	125				

Sample ID: **N008060-001B-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **6/29/2012**	RunNo: **84763**
Client ID: **ZZZZZZ**	Batch ID: **40079**	TestNo: **EPA 7470A**		Analysis Date: **6/30/2012**	SeqNo: **1413296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.188	0.20	5.000	0.08499	102	75	125	5.374	3.52	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail
14201 Franklin Ave.
Tustin, CA 92680

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler:

28-Jun-12

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM 4500-SiO2 C	Requested Tests: SM4500-CN E	
N008060-001D / HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	16OZP	1		
N008060-001G / HNWR-01-006	Groundwater	6/27/2012 11:49:00 AM	32OZP		1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: NA Please fax results by: Normal TAT

Please send report and bill directly to CH2M Hill. Direct all question to Shawn Duffy.

		Date/Time			Date/Time
Relinquished by:		6/28/12 1750	**Received by:**		
Relinquished by:			**Received by:**		

CH2MHILL **CHAIN OF CUSTODY RECORD** Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 428373.FS.05
Task Order
Project 2012-HNWR-006
Turnaround Time 10 Days
Shipping Date: 6/28/2012
COC Number: ATL_HNWR006

	Container:	250 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	500 ml Poly	1 Liter Poly	3 x 40 ml VOA	1L Amber	1Liter Poly		
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C	H2SO4, 4°C	NAOH	4°C		
	Filtered:	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	Holding Time:	28	180	180	180	2	2	2	2	1	28	28	14	30		
DATE	TIME	Matrix	Cr6 (E218.6) FF	Metals (6010BFF) FF Fe	Metals (6010B/6020A/7470Ad(s) FF T22:SbAsBaBeCdCrCoCuPbHgMoNiSeAgTlVZnAl	Metals (6020AFF) FF Mn	Anions (E300.0) Chloride,Sulfate,Fluoride,Nitrate as N	TDS (SM2540C)	Alkalinity (SM2320B)	TSS (SM2540)	Silica (4500SiD)	Ammonia (SM4500NH3)	TOC (SM5310C)	Cyanide (335.2)	Extra (*)		Number of Containers	COMMENTS
HNWR-01-006	6/27/12	1149	GW	X	X	X	X	X	X	X	X	X	X	X	X	NQ08060 - 1		
																TOTAL NUMBER OF CONTAINERS	13	

	Signatures	Date/Time
Approved by		
Sampled by		6/28/12
Relinquished by		0915
Received by		6/28/12 9:15
Relinquished by		6/28/12 4:46
Received by		6/28/12 9:45

Shipping Details
Method of Shipment: Hand Delivered
On Ice: ~~yes~~ / no 3.2°C
Airbill No: 1KH2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

CP

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/28/2012	Workorder:	N008060
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 6/29/12

Reviewed By:

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N008060-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.2139-61.1696)*1000000}{100}$$
$$= 443 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 440 mg/L

NS fw
7/3/12

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N008060-001C,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4544-1.4539)*1000000}{100}$$

$$= 5$$

Reporting result in two significant figures,

TSS = 5.0 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

WS for 7/3/14

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N008060-001A, concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 7.683314* 2

= 15.366628 ug/L

Reporting results in two significant figures,

Cr^{+6}, µg/L = **15**

CMS 7/6/12

Sample ID: **N008060-001C @ pH 7.96**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.825mL)

= **0.02114 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.90) (0.02114N) (1) * 1000

= **103.586 mg/L**

Reporting results in two significant figures,

= **100 mg/L** as CaCO3

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02114 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.90mL) (0.02114) (1) * 1000

= **103.586 mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	OH Alkalinity as $CaCO_3$	CO_3 Alkalinity as $CaCO_3$	HCO_3 Alkalinity as $CaCO_3$
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **103.586 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **100 mg/L**

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N008060-001C**, concentration in mg/L are calculated as follows:

Chloride, mg/L = 6.682 * 20

= 133.6 mg/L

60 7/3/12

Reporting **N008058-001C**, results in two significant figures,

CHLORIDE OMS 7/3/12

~~**Nitrate;**~~ **mg/L = 130 mg/L**

OMS 7/3/12

SAMPLE CALCULATION

METHOD: SM4500-NH3C
TEST NAME: Ammonia-Nitrogen
MATRIX: Water

FORMULA:

Calculate the Ammonia as N concentration, in mg/L , in the original sample as follows:

Ammonia as N, mg/L = A*DF

Where:

A= mg/L, UV-VIS NH3 as N calculated concentration
DF= dilution factor

For **N008060-001E,** concentration in mg/L is calculated as follows:

Ammonia as N, mg/L = 0.059 *1

= 0.059 mg/L

Reporting result in two significant figures,

Ammonia as N = 0.059 mg/L

Since the reporting limit is 0.1 mg/L therefore,

Ammonia as N = ND

NS fn
7/3/12

Sample Calculation

METHOD: SM5310C
TEST NAME: TOTAL ORGANIC CARBON
MATRIX: WATER

FORMULA:

Calculate the TOC concentration, in mg/L, in the original sample as follows:

TOC, mg/L = (A * DF) - B

where:

A = mg/L, instrument calculated concentration
DF = dilution factor
B = mg/L, TOC concentration in the calibration blank

For **N008060-001F**, concentration in mg/L are calculated as follows:

TOC, mg/L = (0.355* 1) – 0.296

= 0 .059mg/L

Reporting results in two significant figures,

TOC, mg/L = 0.059 mg/L

Since the reporting limit is 1.0 mg/L, therefore

TOC, mg/L = ND

CMS 7/12/2012

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N008060-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.1069564715 * 1* (25/25) * 1000

= 106.9564715

Reporting results in two significant figures,

Barium, ug/L = 110

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N008060
Test Method: EPA 6010
Analysis Date: 7/5/2012, 7/11/2012

Matrix: Water
Batch No.: 40084

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N008060-001B DT 5X	Aluminum	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Barium	ug/L	112.6997754	PASSED	106.9564715	-5.37%	10
N008060-001B DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Copper	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Iron	ug/L	40.66117588	NA	37.68352807	-7.90%	10
N008060-001B DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Molybdenum	ug/L	9.771720055	NA	9.089613342	-7.50%	10
N008060-001B DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Silver	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N008060-001B DT 5X	Zinc	ug/L	0	NA	5.187720299	100.00%	10
N008060-001B DT 5X	Vanadium	ug/L	20.7454767	NA	20.2362896	-2.52%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N008060-001B-PS**	SampType: **PS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **84736**
Client ID: **ZZZZZZ**	Batch ID: **40084**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **7/5/2012**	SeqNo: **1412282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5035.718	100	5000	0	101	75	125				
Barium	363.047	6.0	250.0	107.0	102	75	125				
Beryllium	250.407	2.0	250.0	0	100	75	125				
Cadmium	261.806	6.0	250.0	0	105	75	125				
Cobalt	270.744	6.0	250.0	0	108	75	125				
Copper	256.011	10	250.0	0	102	75	125				
Iron	5155.123	40	5000	37.68	102	75	125				
Lead	259.336	20	250.0	0	104	75	125				
Molybdenum	259.564	10	250.0	9.090	100	75	125				
Nickel	267.529	10	250.0	0	107	75	125				
Silver	250.531	6.0	250.0	0	100	75	125				
Zinc	291.060	20	250.0	5.188	114	75	125				

Sample ID: **N008060-001B-PS**	SampType: **PS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **84759**
Client ID: **ZZZZZZ**	Batch ID: **40084**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **7/11/2012**	SeqNo: **1412934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	277.827	6.0	250.0	20.24	103	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N008060-001B**, the concentration in ug/L is calculated as follows:

Chromium, ug/L = 17.74031785 * 1 * (25/25)

= 17.74031785

Reporting results in two significant figures,

Chromium, ug/L = 18

NS for 7/11/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N008060
Test Method: EPA 6020
Analysis Date: 07/03/12

Matrix: Water
Batch No.: 40081

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable to Sb, Cr, Se and Tl. The calc. values were < 25X the RL. PS @ 2X passed the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N008059-001B-DT 5X	Arsenic	µg/L	30.5933315	PASSED	29.34646325	-4.25%	10
N008059-001B-DT 5X	Antimony	µg/L	0	NA	0	#DIV/0!	10
N008059-001B-DT 5X	Chromium	µg/L	0	NA	0.428858214	100.00%	10
N008059-001B-DT 25X	Manganese	µg/L	213.8252833	PASSED	214.6728632	0.39%	10
N008059-001B-DT 5X	Selenium	µg/L	0	NA	0	#DIV/0!	10
N008059-001B-DT 5X	Thallium	µg/L	0	NA	0	#DIV/0!	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N008059-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.758	1.0	20.00	0	93.8	75	125				
Arsenic	49.337	0.20	20.00	29.35	100	75	125				
Selenium	17.829	1.0	20.00	0	89.1	75	125				
Thallium	20.163	1.0	20.00	0	101	75	125				

Sample ID: **N008059-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	695.282	2.5	500.0	214.7	96.1	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N008060
Project: PG&E Topock, 428373.FS.05

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N008059-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **84702**
Client ID: **ZZZZZZ**	Batch ID: **40081**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **7/3/2012**	SeqNo: **1410505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.928	2.0	20.00	0.4289	92.5	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Calculation

METHOD: EPA 7470
TEST NAME: Mercury in Water by Cold-Vapor Technique
MATRIX: Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

Mercury, ug/L = A * DF * PF * 0.5

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL
0.5, is the coversion factor.

For Sample **N008060-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	008 * 1 * (50/25) * 0.5
	=	0.08 ug/L

Reporting results in two significant figures,

Mercury, ug/L	=	**0.08**

Mercury, ug/L	=	**ND**

NS for 7/12/12

MI / AA1 7/12/2012 2:44:34 PM

Appendix B
Other Groundwater Monitoring Results

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-10	SA	09-Dec-11		6.3
MW-12	SA	06-Oct-11		47.0
		09-Dec-11		49.0
		09-Feb-12		47.0
		07-May-12		47.0
MW-13	SA	06-Dec-11		2.0
MW-16	SA	07-Dec-11		11.0
		24-Apr-12		11.0
MW-17	SA	07-Dec-11		1.5
		25-Apr-12		1.4
MW-20-130	DA	09-Dec-11		5.2
		10-May-12		5.8
MW-22	SA	16-Dec-11		14.0
		11-Apr-12		12.0
MW-23-060	BR	29-Sep-11		2.1
		13-Dec-11		2.2
		14-Feb-12		3.3
		30-Apr-12		2.6
		30-Apr-12	FD	2.2
MW-23-080	BR	29-Sep-11		3.5
		12-Dec-11		3.3
		12-Dec-11	FD	3.3
		14-Feb-12		3.7
		30-Apr-12		4.1
MW-25	SA	15-Dec-11		1.4
		15-Dec-11	FD	1.2
MW-26	SA	09-Dec-11		1.7
		07-May-12		1.7
MW-27-20	SA	05-Dec-11		2.4
MW-27-60	MA	05-Dec-11		10.0
		07-Feb-12		9.6
MW-27-85	DA	03-Oct-11		1.4
		03-Oct-11	FD	1.4
		05-Dec-11		1.7
		07-Feb-12		1.4
		09-Apr-12		1.4
MW-28-25	SA	12-Dec-11		1.5

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-28-25	SA	10-Apr-12		2.3
MW-28-90	DA	26-Sep-11		2.0
		12-Dec-11		1.9
		07-Feb-12		1.8
		10-Apr-12		2.0 J
		10-Apr-12	FD	2.4 J
MW-29	SA	07-Dec-11		4.4
		10-Apr-12		7.9
MW-30-30	SA	07-Dec-11		2.6
MW-30-50	MA	08-Dec-11		5.6
MW-31-60	SA	06-Dec-11		1.3
		16-May-12		1.2
MW-31-135	DA	06-Dec-11		4.0
MW-32-20	SA	08-Dec-11		3.2
MW-32-35	SA	09-Dec-11		25.0
		09-Apr-12		30.0
MW-33-40	SA	27-Sep-11		11.0
		12-Dec-11		13.0
		08-Feb-12		15.0
		23-Apr-12		17.0
MW-33-90	MA	13-Dec-11		1.4
MW-33-150	DA	13-Dec-11		1.7
		09-Feb-12		1.8
MW-33-210	DA	13-Dec-11		0.96
		09-Feb-12		1.2
MW-34-55	MA	06-Dec-11		2.7
MW-34-80	DA	03-Oct-11		1.5
		06-Dec-11		1.6
		07-Feb-12		1.4
		09-Apr-12		1.4
MW-34-100	DA	03-Oct-11		1.3
		03-Oct-11	FD	1.4
		09-Nov-11		2.0
		06-Dec-11		1.6
		06-Dec-11	FD	1.6
		18-Jan-12		2.2
		07-Feb-12		1.6

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-34-100	DA	07-Feb-12	FD	1.5
		09-Apr-12		1.6
		09-Apr-12	FD	1.1
MW-35-60	SA	07-Dec-11		1.2
		06-Feb-12		0.97
		26-Apr-12		1.1
MW-35-135	DA	07-Dec-11		0.99
MW-36-20	SA	14-Dec-11		3.1
MW-36-40	SA	14-Dec-11		5.3
MW-36-50	MA	14-Dec-11		3.9
MW-36-70	MA	14-Dec-11		6.7
MW-36-90	DA	14-Dec-11		19.0
		10-Apr-12		19.0
MW-36-100	DA	06-Dec-11		6.6
		10-Apr-12		7.4
MW-37S	MA	07-Dec-11		1.9
MW-39-40	SA	15-Dec-11		19.0
		15-Dec-11	FD	18.0
MW-39-50	MA	15-Dec-11		8.5
MW-39-60	MA	15-Dec-11		6.5
MW-39-100	DA	14-Dec-11		3.2
MW-40D	DA	07-Dec-11		4.6
MW-40S	SA	07-Dec-11		1.2
MW-41D	DA	05-Dec-11		2.8
		26-Apr-12		2.7
MW-41M	DA	05-Dec-11		2.2
MW-41S	SA	07-Dec-11		2.1
		07-Dec-11	FD	2.1
MW-42-30	SA	06-Dec-11		2.2
MW-42-55	MA	26-Sep-11		13.0
		06-Dec-11		14.0
		07-Feb-12		13.0
		09-Apr-12		12.0
MW-42-65	MA	26-Sep-11		2.3
		06-Dec-11		2.4
		07-Feb-12		2.4

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-42-65	MA	09-Apr-12		2.8
MW-43-25	SA	09-Dec-11		20.0
MW-43-75	DA	09-Dec-11		12.0
MW-43-90	DA	09-Dec-11		3.5
MW-44-70	MA	08-Dec-11		3.9
		12-Apr-12		3.9
MW-44-115	DA	27-Sep-11		6.1
		08-Dec-11		5.7
		08-Dec-11	FD	5.4
		08-Feb-12		5.5
		12-Apr-12		5.8
		12-Apr-12	FD	6.1
MW-44-125	DA	27-Sep-11		4.2
		27-Sep-11	FD	3.8
		08-Dec-11		4.9
		08-Dec-11	FD	4.8
		08-Feb-12		4.3
		08-Feb-12	FD	4.1
		12-Apr-12		3.7
MW-45-095a	DA	14-Dec-11		ND (2.5)
		14-Dec-11	FD	3.2
MW-47-55	SA	08-Dec-11		1.4
		25-Apr-12		1.1
MW-49-135	DA	07-Dec-11		1.9
MW-51	MA	07-Dec-11		4.5
		08-May-12		4.1
MW-52D	DA	15-Dec-11		24.0
		11-Apr-12		3.5
MW-52M	DA	15-Dec-11		1.4
		11-Apr-12		1.3
MW-52S	MA	15-Dec-11		0.6
		11-Apr-12		ND (1.0)
MW-53D	DA	03-Oct-11		3.0
		03-Oct-11	FD	2.9
		16-Dec-11		3.3
		16-Dec-11	FD	ND (2.5)
		11-Apr-12		3.5

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-53M	DA	16-Dec-11		ND (2.5)
		11-Apr-12		1.1
MW-54-85	DA	06-Dec-11		4.4
		24-Apr-12		4.9
MW-54-140	DA	06-Dec-11		3.1
		24-Apr-12		ND (5.0)
MW-54-195	DA	06-Dec-11		ND (5.0)
		24-Apr-12		ND (5.0)
		24-Apr-12	FD	ND (5.0)
MW-55-45	MA	03-Apr-12		4.7
MW-55-120	DA	03-Apr-12		5.2
MW-57-070	BR	15-Dec-11		ND (2.5)
		15-Feb-12		1.2
		03-May-12		1.6
MW-57-185	BR	28-Sep-11		13.0
		13-Dec-11		12.0
		10-Feb-12		12.0
		10-Feb-12	FD	13.0
		30-Apr-12		14.0
MW-58BR-LWR-160	BR	04-Apr-11		1.6
MW-58BR-UPR-160	BR	18-Mar-11		1.8
MW-59-100	SA	04-Oct-11		2.0
		15-Dec-11		2.0
		15-Dec-11	FD	1.5
		22-Feb-12		2.0
		08-May-12		2.1
MW-60-125	BR	04-Oct-11		1.7
		14-Dec-11		1.5
		15-Feb-12		1.2
		03-May-12		1.7
MW-60BR-245	BR	03-Aug-11		7.0
		09-Aug-11		6.9
		07-Sep-11		8.8
		16-Oct-11		6.9
		02-Nov-11		7.6
		03-Nov-11		4.8
		04-Nov-11		5.2

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-60BR-245	BR	16-Nov-11		8.0
		14-Dec-11		5.9
		16-Feb-12		4.0
		17-May-12		8.8
MW-61-110	BR	30-Sep-11		3.3
		14-Dec-11		3.2
		15-Feb-12		3.2
		03-May-12		3.2
MW-62-065	BR	29-Sep-11		1.3
		13-Dec-11		0.98
		17-Feb-12		1.5
		02-May-12		1.8
MW-62-110	BR	29-Sep-11		11.0
		14-Dec-11		10.0
		16-Feb-12		6.3
		10-May-12		8.8
MW-62-190	BR	29-Sep-11		6.6
		14-Dec-11		6.7
		16-Feb-12		6.4
		10-May-12		5.4
MW-63-065	BR	28-Sep-11		1.5
		12-Dec-11		1.5
		13-Feb-12		1.2
		26-Apr-12		1.2
MW-64BR-LWR-150	BR	20-Apr-11		3.9
MW-64BR-UPR-150	BR	12-Apr-11		3.1
MW-65-160	SA	13-Jun-11		1.2
		11-Jul-11		0.97
		09-Aug-11		0.98
		09-Aug-11	FD	0.98
		07-Sep-11		0.82
		17-Oct-11		0.78
		15-Nov-11		0.9
		15-Dec-11		0.91
		16-Feb-12		0.82
		01-May-12		0.96
MW-65-225	DA	13-Jun-11		1.8

Table B-1
Arsenic Results in Monitoring Wells, June 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-65-225	DA	11-Jul-11		1.7
		09-Aug-11		1.8
		07-Sep-11		2.0
		17-Oct-11		2.1
		15-Nov-11		2.0
		15-Nov-11	FD	2.0
		15-Dec-11		1.8
		16-Feb-12		2.0
		02-May-12		2.2
MW-66-165	SA	13-Jun-11		1.4
		12-Jul-11		1.3
		12-Jul-11	FD	1.2
		09-Aug-11		1.2
		18-Oct-11		1.2
		15-Nov-11		1.2
		15-Dec-11		0.97
		17-Feb-12		1.3
		02-May-12		1.3
MW-66-230	DA	14-Jun-11		4.6
		12-Jul-11		4.0
		10-Aug-11		4.0
		19-Oct-11		4.5
		17-Nov-11		4.4
		15-Dec-11		3.7
		22-Feb-12		4.1
		10-May-12		4.8
		10-May-12	FD	5.4
MW-66BR-270	BR	03-Nov-11		ND (0.5)
		17-Nov-11		ND (2.5)
		16-Jan-12		0.32
		07-Mar-12		ND (0.5)
		24-May-12		ND (0.5)
MW-67-185	SA	24-Sep-11		1.9
		18-Oct-11		2.3
		18-Oct-11	FD	2.3
		16-Nov-11		1.8
		14-Dec-11		1.8
		21-Feb-12		1.8

Table B-1
Arsenic Results in Monitoring Wells, June 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-67-185	SA	03-May-12		1.7
MW-67-225	MA	14-Jun-11		2.7
		12-Jul-11		2.3
		09-Aug-11		2.0
		08-Sep-11		2.5
		19-Oct-11		2.6
		17-Nov-11		2.7
		14-Dec-11		2.9
		21-Feb-12		2.5
		21-Feb-12	FD	2.8
		07-May-12		2.8
MW-67-260	DA	14-Jun-11		11.0
		12-Jul-11		11.0
		09-Aug-11		9.7
		08-Sep-11		12.0
		19-Oct-11		12.0
		17-Nov-11		11.0
		14-Dec-11		13.0
		21-Feb-12		8.4
		07-May-12		12.0
MW-68-180	SA	11-Jun-11		5.1
		14-Jun-11		2.8
		14-Jun-11	FD	3.1
		12-Jul-11		2.5
		08-Sep-11		2.1
		18-Oct-11		2.2
		17-Nov-11		2.3
		15-Dec-11		2.3
		22-Feb-12		2.5
		10-May-12		2.9
MW-68-240	DA	11-Jun-11		2.7
		14-Jun-11		1.7
		12-Jul-11		1.7
		07-Sep-11		1.8
		07-Sep-11	FD	1.8
		18-Oct-11		1.9
		16-Nov-11		2.0
		14-Dec-11		ND (2.5)

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-68-240	DA	17-Feb-12		1.6
		03-May-12		1.9
MW-68BR-280	BR	08-Sep-11		2.7
		21-Oct-11		1.6
		16-Nov-11		2.1
		14-Dec-11		1.8
		14-Feb-12		1.8
		09-May-12		2.4
MW-69-195	BR	30-Jun-11		1.7
		11-Jul-11		1.6
		09-Aug-11		1.5
		07-Sep-11		1.8
		18-Oct-11		1.8
		15-Nov-11		1.9
		14-Dec-11		2.0
		17-Feb-12		2.4
		02-May-12		2.1
MW-70-105	BR	10-Jun-11		7.5
		13-Jun-11		4.9
		11-Jul-11		4.6
		08-Aug-11		4.8
		06-Sep-11		3.4
		14-Nov-11		5.2
		12-Dec-11		4.8
		16-Feb-12		4.5
		01-May-12		5.4
MW-70BR-225	BR	24-Oct-11		2.0
		07-Nov-11		1.9
		16-Nov-11		2.1
		15-Dec-11		2.1
		16-Feb-12		1.9
		17-May-12		2.0
		17-May-12	FD	2.1
MW-71-035	SA	03-Nov-11		1.5
		15-Nov-11		1.5
		14-Dec-11		ND (2.5)
		15-Feb-12		1.8
		02-May-12		1.7

Table B-1

Arsenic Results in Monitoring Wells, June 2011 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Dissolved Arsenic (µg/L)
MW-72-080	BR	31-Aug-11	9.1
		06-Sep-11	7.5
		17-Oct-11	8.8
		14-Nov-11	9.4
		15-Dec-11	9.3
		13-Feb-12	9.4
		01-May-12	9.7
MW-73-080	BR	22-Oct-11	1.1
		15-Nov-11	1.2
		14-Dec-11	1.7
		14-Feb-12	1.3
		02-May-12	1.4
MW-74-240	BR	16-Jan-12	58.0
		17-Feb-12	15.0
		10-May-12	15.0
OW-3D	DA	06-Dec-11	2.8

NOTES:

µg/L = micrograms per liter.
FD = field duplicate.
J = concentration or reporting limit estimated by laboratory or data validation.

The California primary drinking water standards Maximum Contaminant Level (MCL) for Arsenic is 10 µg/L. The background level for Arsenic at the site is 24.3 µg/L.

Wells are assigned to separate Aquifer zones for results reporting:
SA: shallow interval of Alluvial Aquifer.
MA: mid-depth interval of Alluvial Aquifer.
DA: deep interval of Alluvial Aquifer.
BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

Table B-2
Other GMP Data, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	California MCL:	6	10	1,000	4	5	NE	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
Well ID	**Sample Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
MW-55-45	04/03/2012	ND (0.5) J	4.7	770	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	29.0	ND (5.0)	ND (0.5)	ND (3.0)	0.86	ND (3.0)	ND (10)
MW-55-120	04/03/2012	ND (2.5) J	5.2	60.0 J	ND (2.5)	ND (2.5)	ND (15)	ND (25)	ND (10)	ND (0.2)	26.0 J	ND (25)	ND (2.5)	ND (15)	ND (5.0)	ND (15)	ND (50)

Notes:

* Secondary USEPA MCL.
FD field duplicate sample.
J concentration or reporting limit estimated by laboratory or data validation.
ND not detected at listed reporting limit.
NE not established.

Title 22 metals are the metals listed in California Code of Regulations, Title 22, Section 66261.24(a)(2)(A).

The maximum contaminant levels (MCLs) listed, in micrograms per liter (µg/L), are the California primary drinking water standards, except where noted.

All results are dissolved metals concentrations in µg/L from field-filtered samples.

Metals analyzed by Methods SW6010B or SW6020A or SW7470A.

Table B-3
Background Metals, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

		Metals in µg/L																			General Metals in mg/L			
	California MCL:	6	10	200	1,000	4	5	NE	50	1,000*	15	50*	2	NE	100	50	100*	2	NE	5,000*	NE	NE	0.3*	NE
Well ID	**Sample Date**	**Antimony**	**Arsenic**	**Aluminum**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Chromium**	**Copper**	**Lead**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**	**Boron**	**Calcium**	**Iron**	**Magnesium**
MW-16	04/24/2012	ND (0.5)	**11.0**	110	32.0	ND (1.0)	ND (3.0)	ND (3.0)	10.6	ND (5.0)	ND (10)	ND (0.5)	ND (0.2)	13.0	ND (5.0)	1.7	ND (3.0)	ND (0.5)	36.0	ND (10)	0.32	30.0	ND (0.02)	5.1
MW-17	04/25/2012	ND (0.5)	1.4	ND (50)	24.0	ND (1.0)	ND (3.0)	ND (3.0)	13.3	ND (5.0)	ND (10)	ND (0.5)	ND (0.2)	15.0	ND (5.0)	10.0	ND (3.0)	ND (0.5)	5.2	13.0	0.23	78.0	ND (0.02)	11.0

Notes:
µg/L micrograms per liter.
mg/L milligrams per liter.
ND not detected at listed reporting limit.
FD field duplicate sample.
NE not established.
* Secondary USEPA MCL.

J= concentration or reporting limit estimated by laboratory or data validation.

The maximum contaminant levels (MCLs) listed are the California primary drinking water standards, except where noted.

All results are dissolved metals from field-filtered samples.

Metals analyzed by Methods SW6010B or SW6020A or SW7470A.

Table B-4
Analytical Results for Havasu National Wildlife Refuge Well, February 2012 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	HNWR-01			
			2/23/2012	3/14/2012	4/4/2012	6/27/2012
Anions						
Chloride	300	mg/L	130	130	130	---
Nitrate (as nitrogen)	300	mg/L	2.6	2.5	2.5	---
Sulfate	300	mg/L	45.0	44.0	45.0	---
General Chemistry						
Alkalinity, bicarb as CaCO3	2320B	mg/L	110	110	110	---
Alkalinity, carb as CaCO3	2320B	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	---
Alkalinity, hydroxide	2320B	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	---
Alkalinity, total as CaCO3	2320B	mg/L	110	110	110	---
Ammonia as nitrogen	SM4500NH3C	mg/L	0.13	0.12	0.15	---
Deuterium	CF-IRMS	0/00	-74	---	--	---
Oxygen 18	CF-IRMS	0/00	-10	---	--	---
Perchlorate	314	µg/L	---	ND (2.0)	ND (2.0)	---
Total dissolved solids	SM2540C	mg/L	480	510	430	---
Total organic carbon	SM5310C	mg/L	ND (1.0)	ND (1.0)	ND (1.0)	---
Total Suspended Solids (TSS)	SM2540D	mg/L	---	ND (10)	--	---
General Metals						
Calcium, dissolved	6010B	µg/L	19,000 J	19,000	20,000	---
Iron, dissolved	6010B	µg/L	37.0	ND (20)	25.0	---
Magnesium, dissolved	6010B	µg/L	3,100	3,200 J	3,100 J	---
Manganese, dissolved	6020A	µg/L	1.9	0.64	1.7	---
Potassium, dissolved	6010B	µg/L	4,400	4,000	3,700	---
Sodium, dissolved	6010B	µg/L	130,000	130,000	130,000	---
Herbicides						
2,4,5-T	8151	µg/L	---	ND (2.7)	ND (0.26)	---
2,4,5-TP (Silvex)	8151	µg/L	---	ND (2.7)	ND (0.26)	---
2,4-D	8151	µg/L	---	ND (2.7)	ND (0.26)	---
2,4-DB	8151	µg/L	---	ND (2.7)	ND (0.26)	---
Dalapon	8151	µg/L	---	ND (4.4)	ND (0.42)	---
Dicamba	8151	µg/L	---	ND (2.7)	ND (0.26)	---
Dichlorprop	8151	µg/L	---	ND (2.7)	ND (0.26)	---
Dinoseb	8151	µg/L	---	ND (2.7)	ND (0.26)	---
MCPA	8151	µg/L	---	ND (2.7)	ND (0.26)	---
MCPP	8151	µg/L	---	ND (2.7)	ND (0.26)	---
Metals						
Aluminum, dissolved	6010B	µg/L	---	ND (50)	ND (50)	---
Antimony, dissolved	6010B/6020A	µg/L	ND (10)	ND (10)	ND (0.5)	---

Table B-4
Analytical Results for Havasu National Wildlife Refuge Well, February 2012 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	HNWR-01			
			2/23/2012	3/14/2012	4/4/2012	6/27/2012
Metals						
Arsenic, dissolved	6020A	µg/L	15.0	16.0	15.0	---
Barium, dissolved	6010B	µg/L	110	110	110	---
Beryllium, dissolved	6010B	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	---
Cadmium, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	ND (3.0)	---
Chromium, Hexavalent	218.6	µg/L	15.0	18.0	14.0	---
Chromium, total dissolved	6010B/6020A	µg/L	16.0	18.0	17.0	---
Cobalt, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	ND (3.0)	---
Copper, dissolved	6010B	µg/L	ND (5.0)	ND (5.0)	ND (5.0)	---
Cyanide	SM4500CN	mg/L	---	ND (0.01)	ND (0.01)	---
Lead, dissolved	6010B	µg/L	ND (10)	ND (10)	ND (10)	---
Mercury, dissolved	7470A	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	---
Molybdenum, dissolved	6010B	µg/L	9.4	10.0	9.0	---
Nickel, dissolved	6010B	µg/L	ND (5.0)	ND (5.0)	ND (5.0)	---
Selenium, dissolved	6020A	µg/L	0.87	0.75	0.75	---
Silver, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	ND (3.0)	---
Thallium, dissolved	6020A	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	---
Vanadium, dissolved	6010B	µg/L	21.0	22.0 J	20.0	---
Zinc, dissolved	6010B	µg/L	ND (10)	16.0	ND (10)	---
Metals - TLI						
Cyanide	SM4500CN	mg/L	---	---	--	ND (0.01)
Soluble silica	SM4500Si-D	mg/L	---	---	--	25.9
Pesticides						
4,4-DDD	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
4,4-DDE	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
4,4-DDT	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
Aldrin	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
alpha-BHC	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
alpha-Chlordane	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
beta-BHC	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
delta-BHC	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
Dieldrin	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
Endo sulfan I	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
Endo sulfan II	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
Endosulfan sulfate	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
Endrin	8081A	µg/L	---	ND (0.053)	ND (0.052)	---
Endrin aldehyde	8081A	µg/L	---	ND (0.053)	ND (0.052)	---

Table B-4
Analytical Results for Havasu National Wildlife Refuge Well, February 2012 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	HNWR-01			
			2/23/2012	3/14/2012	4/4/2012	6/27/2012
Pesticides						
gamma-BHC	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
gamma-Chlordane	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
Heptachlor	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
Heptachlor Epoxide	8081A	µg/L	---	ND (0.027)	ND (0.026)	---
Methoxy chlor	8081A	µg/L	---	ND (0.27)	ND (0.26)	---
Toxaphene	8081A	µg/L	---	ND (2.7) J	ND (2.6) J	---
Polychlorinated Biphenyls						
Aroclor 1016	8082	µg/L	---	ND (0.53)	ND (0.52)	---
Aroclor 1221	8082	µg/L	---	ND (1.1)	ND (1.0)	---
Aroclor 1232	8082	µg/L	---	ND (0.53)	ND (0.52)	---
Aroclor 1242	8082	µg/L	---	ND (0.53)	ND (0.52)	---
Aroclor 1248	8082	µg/L	---	ND (0.53)	ND (0.52)	---
Aroclor 1254	8082	µg/L	---	ND (0.53)	ND (0.52)	---
Aroclor 1260	8082	µg/L	---	ND (0.53)	ND (0.52)	---
Semivolatile Organic Compounds						
4-Nitrophenol	8151	µg/L	---	ND (2.7)	--	---
Pentachloro phenol	8151	µg/L	---	ND (2.7)	ND (0.26)	---
Total Petroleum Hydrocarbons						
TPH as diesel	8015M	µg/L	---	190	ND (51) J	---
TPH as gasoline	8015M	µg/L	---	ND (100)	ND (100)	---
TPH as motor oil	8015M	µg/L	---	ND (53)	ND (51)	---
Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1,1-Trichloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1,2,2-Tetrachloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1,2-Trichloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1,2-Trichlorotrifluoroethane (Freon 113)	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1-Dichloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1-Dichloroethene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,1-Dichloropropene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,2,3-Trichlorobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,2,3-Trichloropropane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,2,4-Trichlorobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,2,4-Trimethylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0) J	---
1,2-Dibromo-3-chloropropane	8260	µg/L	---	ND (2.0)	ND (2.0)	---
1,2-Dibromoethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---

Table B-4
Analytical Results for Havasu National Wildlife Refuge Well, February 2012 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	HNWR-01			
			2/23/2012	3/14/2012	4/4/2012	6/27/2012
Volatile Organic Compounds						
1,2-Dichlorobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,2-Dichloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,2-Dichloropropane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,3,5-Trimethylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0) J	---
1,3-Dichlorobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,3-Dichloropropane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1,4-Dichlorobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
1-Methyl naphthalene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
2,2-Dichloropropane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
2-Chlorotoluene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
2-Methyl naphthalene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
4-Isopropyltoluene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Acenaphthene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Acenaphthylene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Acetone	8260	µg/L	---	ND (10)	ND (10)	---
Acrolein	8260	µg/L	---	ND (20)	ND (20)	---
Acrylonitrile	8260	µg/L	---	ND (20)	ND (20)	---
Anthracene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Benzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Benzo (a) anthracene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Benzo (a) pyrene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Benzo (b) fluoranthene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Benzo (ghi) perylene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Benzo (k) fluoranthene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Bromobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Bromochloromethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Bromodichloromethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Bromoform	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Bromomethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Carbon disulfide	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Carbon tetrachloride	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Chloro methane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Chlorobenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Chloroethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Chloroform	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Chrysene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---

Table B-4
Analytical Results for Havasu National Wildlife Refuge Well, February 2012 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	HNWR-01			
			2/23/2012	3/14/2012	4/4/2012	6/27/2012
Volatile Organic Compounds						
cis-1,2-Dichloroethene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
cis-1,3-Dichloropropene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Dibenzo (a,h) anthracene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Dibromochloromethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Dibromomethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Dichlorodifluoromethane	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Ethylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Fluoranthene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Fluorene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Hexachlorobutadiene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Indeno (1,2,3-cd) pyrene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Isopropylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
m,p-Xylenes	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Methyl ethyl ketone	8260	µg/L	---	ND (10)	ND (10)	---
Methyl isobutyl ketone	8260	µg/L	---	ND (10)	ND (10)	---
Methyl tert-butyl ether (MTBE)	8260	µg/L	---	ND (1.0)	ND (1.0) J	---
Methylene chloride	8260	µg/L	---	ND (5.0)	ND (5.0)	---
Naphthalene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
N-Butylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
N-Propylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
o-Xylene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
p-Chlorotoluene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Phenanthrene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
Pyrene	8270SIM	µg/L	---	ND (0.22)	ND (0.2)	---
sec-Butylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Styrene	8260	µg/L	---	ND (1.0)	ND (1.0) J	---
tert-Butylbenzene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Tetrachloroethene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Toluene	8260	µg/L	---	ND (2.5)	ND (2.5)	---
trans-1,2-Dichloroethene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
trans-1,3-Dichloropropene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Trichloroethene	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Trichlorofluoromethane (Freon 11)	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Vinyl chloride	8260	µg/L	---	ND (1.0)	ND (1.0)	---
Xylenes, total	8260	µg/L	---	ND (2.0)	ND (2.0)	---

Table B-4
Analytical Results for Havasu National Wildlife Refuge Well, February 2012 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

NOTES:

ND	not detected at listed reporting limit
ug/L	micrograms per liter
mg/L	milligrams per liter
0/00	differences from global standards in ppt
J	concentration or RL estimated by laboratory or data validation
TLI	Truesdail Laboratories Inc.

Appendix C
Groundwater Monitoring Data for GMP and Interim Measures Monitoring Wells

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-70	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1.0)	81.7	198	55.4	9.89	431	0.412
	15-Jun-05	1980	-7.0	-60.0	749	388	9.79	ND (1.0)	73.8	189	55.4	10.5	433	0.414
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1.0)	71.3	204	60.7	11.4	468	0.445
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	69.9	198	49.9	14.6	323	0.402
	15-Dec-05	1830	-7.1	-49.0	645	326	9.90	ND (1.0)	77.8	138	42.3	14.5	267	0.441
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.5)	82.2	161	48.6	9.22	424	0.427
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	74.5	162	49.2	9.55	461	0.476
	03-Oct-06	1890	-8.1	-60.4	677	357	13.0	ND (5.0)	85.0	158	47.6	9.82	472	0.535
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5.0)	80.0	154	45.9	9.51	466	0.515
	13-Dec-06	1910	-7.6	-61.2	678	352	12.7	0.699	77.5	149	44.3	9.09	458	0.459
	14-Mar-07	1740	-8.5	-64.3	689	358	13.7	0.641	80.0	139	42.2	8.83	451	0.503
	03-May-07	1750	-8.4	-66.7	697	344	25.1	ND (1.0)	77.5	139	41.2	8.65	390	0.477
	11-Oct-07	1820	-8.2	-63.9	699	367	15.6	ND (1.0)	80.0	130	39.1	11.0	600	0.54
	12-Mar-08	1790	-7.6	-65.2	695	360	22.1	ND (1.0)	77.0	139	41.2	10.7	403	0.51
	07-Oct-08	1900	-8.5	-64.4	650	360	15.0	0.61	83.0	136	37.9	10.5	400	0.608
	12-Mar-09	1900	-7.74	-60.8	670	330	17.0	ND (1.0)	79.0	128	40.2	9.95	496	0.549
	25-Sep-09	1700	-8.7	-66.4	700	310	16.0	ND (2.5)	74.0	130	33.0	9.70	390	0.42
	16-Dec-10	1700	-7.5	-62.3	680	320	16.0	0.51	79.0	130	33.0	12.0	400	0.51
	07-Dec-11	1400	-7.9	-61.9	540	330	11.0	ND (0.5)	71.0	100	25.0	---	380	---
MW-20-100 [a]	10-Mar-05	2490	-5.2	-49.0	466	511	9.98	ND (1.0)	84.2	133	19.8	8.98	712	0.859
	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1.0)	84.0	137	21.3	9.06	592	0.713
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	82.3	170	23.7	15.2	500	0.718
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1.0)	82.7	136	21.4	14.8	406	0.709
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.5)	92.5	171	27.0	7.75	597	0.803

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-100 [a]	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1.0)	82.5	193	32.0	10.8	577	0.716
	03-Oct-06	2320	-5.8	-51.5	863	456	13.4	ND (5.0)	90.0	202	34.4	10.9 J	568	0.874
	13-Dec-06	1960	-6.2	-54.4	861	459	12.3	0.83	97.5	205	32.2	11.4	579	0.889
	13-Dec-06 FD	2200	-6.2	-54.5	874	457	12.2	0.851	92.5	205	32.2	9.55	575	0.881
	14-Mar-07	2180	-6.8	-57.8	847	477	14.2	0.785	87.5	194	31.7	9.90	521	0.715
	03-May-07	2300	-7.3	-59.2	879	493	23.2	ND (1.0)	87.5	209	36.0	12.0 J	559	0.699
	03-May-07 FD	2330	-6.7	-59.3	888	484	19.7	ND (1.0)	87.5	208	34.6	9.63 J	532	0.686
	10-Oct-07	2160	-7.2	-57.2	858	468	3.25	ND (1.0)	92.0	190	32.0	15.0	560	0.81
	12-Mar-08	2470	-6.9	-58.3	827	442	19.2	ND (1.0)	870	218	35.4	11.9	469	0.702
	08-Oct-08	2200	-7.9	-60.2	760	420	16.0	ND (1.0)	90.0	215	36.8	10.3	453	0.669
	13-Mar-09	2200	-7.08	-58.2	770	420	16.0	ND (1.0)	97.0	213	36.4	11.6	543	0.89
	25-Sep-09	2000	-7.67	-62.8	750	400	16.0	ND (2.5)	89.0	200	30.0	12.0	430	0.70
	10-Feb-11	1800	-7.0	-58.8	610	380	15.0	0.57	120	180	28.0	14.0	400	0.81
	08-Dec-11	1700	-6.7	-55.6	580	380	13.0	ND (0.5)	120	170	25.0	---	390	---
MW-20-130 [a]	09-Mar-05	5520	-5.8	-56.0	3120	1080	10.9	ND (1.0)	68.9	219	12.1	24.7	2250	1.90
	09-Mar-05 FD	6200	-5.4	-51.0	3080	1080	10.9	ND (1.0)	68.9	231	12.8	25.4	2390	1.99
	15-Jun-05	7790	-5.0	-48.0	3410	1230	11.1	ND (1.0)	68.7	352	23.2	31.3	2980	2.75
	07-Oct-05	7330	-5.0	-47.0	3010	1210	10.9	1.04 J	72.4	349	13.9	38.4	2070	2.41
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	63.2	324	16.3	44.4	1780	1.98
	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.5)	74.5	312	18.9	27.7	2730	2.03
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1.0)	69.2	349	20.3	27.7	2810	2.40
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5.0)	70.0	358	20.9	28.0	2870	2.28
	13-Dec-06	7890	-6.0	-54.9	3970	1250	10.6	0.896	72.5	335	19.7	27.6	2900	2.31
	13-Dec-06 FD	8250	-5.9	-54.4	3950	1260	10.5	1.09	72.5	328	19.1	27.3	2830	2.24

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-130 [a]	08-Mar-07	8450	-6.5	-57.7	3930	1240	11.3	1.08	70.0	353	21.3	27.0	2760	2.24
	08-Mar-07 FD	8510	-6.6	-57.4	3900	1210	11.3	1.06	72.5	351	21.3	26.8	2750	2.19
	03-May-07	8150	-7.7	-60.0	4020	1310	9.80 J	ND (1.0)	75.0	338	22.5	27.8	2550	2.49
	03-May-07 FD	8100	-6.9	-60.1	3950	1290	20.4 J	ND (1.0)	72.5	338	21.9	27.3	2550	2.47
	05-Oct-07	7980	-7.0	-57.5	3670	1070	11.6	ND (1.0)	77.0	310	19.0	31.0	2900	2.40
	12-Mar-08	8460	-6.2	-58.7	3690	1220	14.3	ND (1.0)	75.0	342	23.4	47.0	2260	2.07
	08-Oct-08	7800	-7.3	-59.6	3500	1200	12.0	ND (2.5)	81.0	329	22.0	40.1	1990	2.23
	13-Mar-09	8100	-6.58	-56.4	3600	1100	11.0	ND (2.5)	79.0	350	22.7	41.4	2550	2.16
	25-Sep-09	6500	-7.59	-61.7	3500	1100	13.0	ND (2.5)	76.0	280	17.0	33.0	2400	2.00
	10-Feb-11	5900	-6.6	-59.0	3100	1100	13.0	1.00	80.0	310	18.0	50.0	2100	2.20
	09-Dec-11	6200	-6.6	-57.2	3300	1200	12.0	ND (2.5)	74.0	340	22.0	33.0	2400	2.40
MW-25	09-Mar-05	877	-8.4	-62.0	247	169	3.64	ND (0.5)	158	77.6	16.1	6.24	211	0.441
	14-Jun-05	942	-8.6	-61.0	289	183	3.89	ND (0.5)	137	93.5	20.0	8.91	253	0.464
	14-Jun-05 FD	980	-7.2	-59.0	294	185	3.94	ND (0.5)	137	100	20.9	9.06	268	0.475
	04-Oct-05	950	-8.2	-68.0	252	171	3.77	ND (0.5)	141	83.3	14.9	9.93	164	0.362
	04-Oct-05 FD	910	-8.3	-60.0	251	171	3.75	ND (0.5)	146	94.6	15.3	10.2	185	0.371
	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.5)	153	75.5	14.5	9.80	143	0.396
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.5)	156	73.0	14.1	9.71	151	0.382
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.5)	170	76.4	15.6	6.97	210	0.39
	03-May-06	907	-9.0	-59.4	272	172	3.95	ND (0.5)	150	78.0	17.3	7.38	222	0.418
	03-May-06 FD	924	-9.0	-61.0	274	173	3.94	ND (0.5)	155	79.7	17.8	7.53	245	0.431
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.5)	163	73.3	15.0	7.25	206	0.466
	06-Mar-07	843	-9.0	-66.9	221	164	3.95	ND (0.5)	160	72.9	14.4	6.85	203	0.459
	02-Oct-07	796	-9.0	-65.8	189	155	4.58	ND (1.0)	180	66.0	14.0	7.90	200	0.49

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-25	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	190	63.0	13.0	7.70	220	0.46
	07-Oct-08	740	-9.9	-68.5	170	150	4.30	ND (0.5)	200	59.2	12.9	9.89	143	0.559
	07-Oct-08 FD	730	-10.1	-69.1	170	150	4.40	ND (0.5)	210	58.4	12.9	10.2	144	0.559
	21-Sep-09	660	-8.91	-69.9	180	130	4.30	ND (0.5)	200	64.0	12.0	7.20	180	0.46
	21-Sep-09 FD	650	-8.87	-69.5	180	130	4.30	ND (0.5)	200	64.0	12.0	7.90	190	0.47
	07-Dec-10	780	-9.4	-68.9	220	120	4.80	ND (1.0)	180	74.0	15.0	10.0	180	0.43
	15-Dec-11	860	-9.2	-68.6	270	120	5.90	ND (1.0)	170	89.0	19.0	8.50	210	0.49
	15-Dec-11 FD	890	-8.9	-66.7	280	120	6.00	ND (0.5)	170	91.0	19.0	8.00	220	0.50
MW-26	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.5)	98.7	166	41.6	10.7	439	0.557
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.5)	96.1	166	40.9	11.4	438	0.559
	13-Jun-05	2130	-8.2	-65.0	847	371	4.90	ND (0.5)	103	178	44.6	14.0	511	0.663
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	109	166	40.4	19.8	352	0.526
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	99.7	162	39.9	20.3	349	0.613
	08-Mar-06	2070	-8.6	-60.4	772	324	4.90	ND (0.5)	121	155	38.1	11.7	434 J	0.621
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	121	165	42.0	12.8	555	0.723
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	105	170	43.9	12.8	510	0.692
	12-Mar-07	2280	-9.0	-67.0	917	387	6.02	0.646	90.0	163	41.6	12.9	621	0.622
	02-Oct-07	2180	-8.6	-66.3	945	391	7.84	ND (1.0)	100	170	42.0	15.0	620	0.66
	12-Mar-08	2500	-8.1	-67.2	908	398	10.7 J	ND (1.0)	103	176	44.1 J	16.2 J	498	0.589
	12-Mar-08 FD	2420	-8.9	-68.2	905	398	7.61 J	ND (1.0)	102	160	32.8 J	12.7 J	462	0.601
	08-Oct-08	2400	-8.7	-66.5	930	440	10.0	ND (1.0)	110	183	45.8	14.6	555	0.591
	10-Mar-09	2300	-8.41	-65.3	870	440 J	9.80	1.40	100	172	47.9	14.8	585	0.604
	10-Mar-09 FD	2300	-8.68	-65.8	860	440 J	9.70	1.50	100	174	46.2	15.6	631	0.65
	22-Sep-09	2200	-9.04	-68.3	870	450	10.0	ND (1.0)	100	170	39.0	14.0	550	0.59

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-26	09-Dec-11	2300	-8.1	-65.2	930	530	14.0	1.20	94.0	210	47.0	15.0	690	0.89
MW-27-20	08-Mar-05	1250	-12	-102.0	190	432	ND (0.5)	ND (0.5)	215	137	56.6	4.89	195	ND (0.2)
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.5)	ND (0.5)	175	88.6	31.4	5.48	81.0	ND (0.2)
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.5)	ND (0.5)	216	116	41.8	6.96	116	ND (0.2)
	06-Mar-06	664	-12.1	-90.9	89.7	231	ND (0.2)	ND (0.2)	385	89.1	28.8	4.90	103	ND (0.2)
	14-Jun-06	730	-12	-89.8	98.3	272	ND (0.5)	ND (0.5)	195	91.1	28.5	2.79 J	96.9	ND (0.2)
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.5)	ND (0.5)	160	102	34.5	6.45	113	ND (0.2)
	02-Oct-07	802	-12.5	-96.3	102	320	ND (1.0)	ND (1.0)	170	97.0	34.0	5.30	150	0.22
MW-28-25	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.5)	ND (0.5)	204	129	36.3	3.50	122	ND (0.2)
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.5)	ND (0.5)	221	133	38.9	6.54	117	ND (0.2)
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	197	123	37.0	6.61	88.7	ND (0.2)
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	212	134	41.5	6.46	107	ND (0.2)
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	244	98.5	27.5	4.15 J	88.5	ND (0.2)
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	216	117	35.7	5.77	118	ND (0.2)
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	225	133	40.8	5.47	132	ND (0.2)
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	230	120	37.0 J	4.80	150	0.26 J
MW-30-30	10-Mar-05	38800	-9.8	-79.0	16000	4270	ND (5.0)	7.91	421	1590	1600	95.4	13600	4.97
	07-Oct-05	36400	-8.5	-75.0	17600	4000	ND (0.5)	ND (10)	521	1020	842	93.6	7650	5.20
	15-Dec-05	35700	-8.7	-59.0	19700	4070	ND (1.0)	3.13	504	1060	894	110	8540	6.14
	13-Mar-06	39700 J	-8.8	-70.5	18600	4530	ND (0.5)	ND (50)	650	1050	892	77.2	11300	4.62
	02-May-06	32400	-10.3	-70.7	15400	3300	ND (0.5)	ND (5.0)	756	882	828	59.4	10300	3.95
	10-Oct-06	29400	-9.4	-68.7	17800	4400	ND (2.5)	ND (2.5)	550	729	653	55.0	10200	4.32
	08-Oct-07	27400	-9.0	-73.9	13700	3370	ND (1.0)	3.88	800	650	540	56.0	9600	4.50
MW-30-50	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.5)	1.03	324	335	107	16.5	2040	1.15

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-30-50	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.5)	0.899 J	252	438	101	37.0	1780	1.27
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.5)	0.645	212	265	77.9	32.9	1260	1.19
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.5)	ND (0.5)	275	226	66.2	14.6	1640	1.18
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.5)	3.41	261	243	70.3	16.4	1750	1.22
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.5)	ND (0.5)	290	171	48.5	14.0	1370	1.11
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.5)	ND (0.5)	298	163	46.1	14.1	1340	1.08
MW-31-60	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.5)	76.6	108	17.3	5.97	424	0.401
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.5)	70.0	121	18.9	6.57	403	0.388
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.5)	77.3	109	16.5	9.75	308	0.462
	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.5)	73.0	87.0	15.4	9.32	275	0.359
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.5)	89.3	106	17.5	7.30	403	0.393
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.5)	81.9	101	16.8	6.94	391	0.383
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.5)	79.6	118	20.1	7.78	467	0.449
	05-Oct-06	1620	-9.4	-66.3	687	205	5.00	ND (0.5)	80.0	113	20.6	9.60 J	325	0.464
	12-Mar-07	1750	-9.3	-69.0	757	222	4.93	ND (0.5)	72.5	116	20.3	6.05	454	0.402 J
	04-Oct-07	1720	-9.4	-69.6	799	208	5.15	ND (1.0)	80.0	150	26.0	7.30	580	0.64
	06-Oct-08	2000	-10.2	-72.2	810	240	4.20	ND (1.0)	81.0	150	26.0	9.39	460	0.399
	21-Sep-09	1800	-9.23	-72.1	870	220	3.70	ND (1.0)	75.0	160	26.0	9.60	480	0.43
	15-Dec-10	2000	-9.0	-69.3	840	210	3.50	ND (0.5)	78.0	170	27.0	12.0	440	0.43
	06-Dec-11	1800	-8.8	-67.9	790	200	3.40	ND (1.0)	76.0	150	24.0	7.60	450	0.54
MW-32-20	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.5)	3.51	123	838	302	36.9	4000	2.76
	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.5)	ND (2.5)	676	566	231	23.3	2620	1.75
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	733	1380 J	613 J	91.1 J	5400 J	4.75 J
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	861	1470	552	90.4	4950	4.16

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-32-20	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	432	1350	530	56.1	6440	3.54
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	218	937	445	46.0	4780	2.87
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	660	1870	1070	87.0	11300	6.34
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	825	1530	785	81.7	8420	4.98
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	765	1460	635	64.4	7110	3.92
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.2)	3.78	770	965	484	51.4	5520	3.02
	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	700	1800	1100	93.0	9900	5.70
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	800	1190	710	67.4	11600	2.31
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
MW-32-35	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.5)	0.845	260	312	85.5	13.0	944	1.07
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.5)	ND (2.5)	223	506	120	14.8	2110	1.18
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.5)	ND (5.0)	208	567	134	29.3	1530	1.26
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1.0)	1.02	219	606	128	30.0	1580	1.25
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.5)	ND (0.5)	234	654	129	19.2	2360	1.13
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.5)	ND (0.5)	218	693	148	19.5	2800	1.38
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	290	839	165	23.9	3260	1.48
	11-Dec-06	10400	-9.0	-70.4	5090	1000	ND (0.5)	1.90	338	845	173	22.5	2620	1.43
	06-Mar-07	12600	-10.2	-75.4	6070	1200	ND (0.5)	2.65	360	1080	209	23.5	2910	1.35
	30-Apr-07	12100	-9.9	-78.7	6610	1280	ND (0.2)	2.60	475	1250	273	26.2	3280	1.35
	01-Oct-07	13700	-8.9	-72.7	6830	1120	ND (1.0)	2.62	490	1000	390	29.0	4000	1.70
	03-Oct-08	15000	-9.8	-73.1	7600	1300	ND (2.5)	3.10	550	829	150	52.3	3490	1.49
	22-Sep-09	13000	-9.32	-75.2	6900	1400	ND (2.5)	2.80	530	880	400	53.0	3100	1.70
	09-Dec-10	11000	-10.2	-84.2	5500	1600	ND (2.5)	ND (2.5)	590	750	390 J	51.0 J	3000	1.70 J
	09-Dec-11	8500	-10.8	-84.2	5000	1700	ND (2.5)	ND (2.5)	640	680	310	34.0	3100	1.70

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-55	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.5)	0.654	240	366	71.3	29.1	1900	1.19
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.5)	ND (0.5)	232	272	59.1	25.8	1230	1.20
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.5)	0.588	236	217	45.0	27.2	965	0.937
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.5)	ND (0.5)	272	256	54.2	13.5	1640	0.956
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.5)	ND (0.5)	302	198	44.8	11.1	1360	0.846
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.5)	ND (0.5)	368	37.6	8.08	4.59	536	0.54
	03-Oct-07	730	-11.3	-96.6	109	266	ND (1.0)	ND (1.0)	190	15.0	3.30	3.30	290	0.26
	07-Oct-08	700	-13	-100.0	100	250	ND (0.5)	---	170	72.4	16.9	5.26	192	0.248
	30-Sep-09	700	-12.3	-101.0	---	---	---	---	160	77.0	17.0	4.40	120	0.15
	07-Dec-10	590	-12.1	-98.8	87.0	230	ND (0.5)	ND (0.5)	140	81.0	19.0	5.10	100	0.10
	06-Dec-11	630	-12.3	-101.0	83.0	220	ND (0.5)	ND (0.5)	160	81.0	19.0	4.60	100	0.19
MW-34-80	08-Mar-05	6940	-10.4	-83.0	4180	1040	ND (0.5)	1.01	304	439	68.1	28.0	2750	1.65
	15-Mar-05	8980	---	---	3920	ND (5.0)	ND (1.0)	---	288	445	65.7	29.7	2990	---
	30-Jun-05	7840	-8.4	-82.0	3910	979	ND (0.5)	ND (0.5)	302	497	76.5	27.7	2670	1.66
	05-Oct-05	10200	-10.1	-85.0	3880	1060	ND (0.5)	ND (0.5)	302	429	72.5	47.4	1660	1.57
	14-Dec-05	8800	-10.2	-71.0	3700	880	ND (0.5)	0.854	297	432	68.3	54.9	1710	1.54
	09-Mar-06	7830	-9.9	-86.8	3520	986	ND (0.5)	ND (0.5)	313	383	65.8	24.0	2420	1.49
	03-May-06	7950	-11.7	-77.6	3700	921	ND (0.5)	ND (0.5)	297	425	70.3	23.9	2480	1.38
	04-Oct-06	7080	-11.3	-81.8	3210	786	ND (0.5)	0.737	268	341	65.4	21.1	2170	1.31
	12-Dec-06	6510	-10.5	-80.9	3190	789	ND (0.5)	0.742	288	298	62.9	18.9	2040	1.26
	05-Mar-07	6360 J	-11.5	-85.8	3300	783	ND (0.5)	0.72	205	315	68.3	19.4	2020	1.29
	30-Apr-07	6390	-11.5	-88.9	3320 J	889 J	ND (0.2)	ND (1.0)	245	282	57.0	18.6	2080	1.33
	03-Oct-07	5490	-11.3	-87.8	2630	696	ND (1.0)	ND (1.0)	240	220	53.0	21.0	2000	1.20
	13-Dec-07	5420	-10.9	-88.6	2380	698	ND (1.0)	ND (1.0)	264	193	49.1	25.4	1450	1.09

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-80	12-Mar-08	5500	-11.4	-87.3	2510	739	ND (1.0)	ND (1.0)	238	237	52.6	19.2	2030	1.14
	06-May-08	5820	-11.4	-87.3	2460	753	ND (0.2)	0.525	216	230	49.0	30.0	1600	1.20
	07-Oct-08	5300	-11.8	-87.6	2400	720	ND (2.0)	ND (2.0)	250	223	46.3	22.0	1220	0.765
	10-Dec-08	5300	-11	-93.1	2190	698	ND (1.0)	ND (1.0)	253	147	45.2	20.6	3880	1.11
	10-Mar-09	5100	-10.9	-84.8	2300	700 J	ND (2.5)	ND (2.5)	240	219	46.3	22.2	1480	1.08
	30-Apr-09	5830	-11.5	-85.8	2340	768	ND (1.0)	ND (1.0)	237	219	50.0	24.6	1510	1.11
	30-Sep-09	4000	-10.8	-88.9	2300	710	ND (1.0)	ND (1.0)	230	240	46.0	22.0	1500	0.98
	09-Dec-09	4580	-11.9	-89.1	2200	690	ND (1.0)	ND (1.0)	230	---	---	---	---	---
	10-Mar-10	4900	-12.1	-91.6	2100	660	ND (1.0)	ND (1.0)	240	220 J	41.0	28.0	1400 J	0.93
	07-Dec-10	4600	-11.1	-87.3	2300	700	ND (1.0)	ND (1.0)	220	240	47.0	24.0	1300	1.00
	06-Dec-11	3900	-11.1	-88.1	1900	640	ND (1.0)	ND (1.0)	230	220	43.0	16.0	1300	1.10
MW-34-100	14-Mar-05	10800	---	---	5010	1210	ND (1.0)	---	175	221	17.4	34.1	3600	---
	21-Jun-05	11300	-9.7	-75.0	5350	1270	1.05	ND (0.5)	179	229	17.4	27.1	3510	2.22
	21-Jun-05 FD	10900 J	-9.5	-77.0	4920	1180	1.03	ND (0.5)	179	243	18.2	32.1	3740	2.36
	05-Oct-05	10400	-9.9	-83.0	4530	1150	1.20	ND (0.5)	172	171	13.8	55.2	2450	2.57
	05-Oct-05 FD	10400	-9.9	-83.0	4680	1200	1.21	ND (0.5)	172	228	14.1	50.9	2730	2.57
	08-Mar-06	10000	-11.4	-75.5 J	4720	1180	1.39	---	152	179	12.1	32.5	3580	2.41
	08-Mar-06 FD	10100	-10.1	-102 J	4920	1220	1.39	---	159	182	11.9	36.5	3530	2.46
	30-Apr-07	10600	-10.9	-80.7	5920	1040	1.38	---	123	186	12.0	31.5	3840	2.39
	30-Apr-07 FD	11900	-11.2	-82.1	5880	1050	1.37	---	123	189	12.0	32.1	3920	2.40
	03-Oct-07	10700	-10.2	-78.2	5350	970	1.19	ND (1.0)	120	170	11.0	44.0	4300	2.50
	03-Oct-07 FD	10500	-10.6	-78.4	5360	953	1.03	ND (1.0)	120	160	10.0	43.0	4300	2.40
	07-Oct-08	11000	-10.9	-80.8	5400	1200	ND (2.5)	ND (2.5)	140	158	10.6	54.5	2970 J	2.35
	07-Oct-08 FD	11000	-11	-81.3	5600	1200	ND (2.5)	ND (2.5)	140	184	11.5	56.7	3880 J	2.59

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-100	30-Sep-09	---	---	---	5500	1300	ND (5.0)	---	170	200	11.0	73.0	3800	2.30
	30-Sep-09 FD	---	---	---	5600	1300	ND (5.0)	---	170	---	---	---	---	---
	17-Nov-09	11000	-10.5	-82.4	---	---	---	ND (1.0)	---	---	---	---	---	---
	08-Dec-10	10000	-9.8	-79.5	5800	1300	ND (2.5)	ND (2.5)	140 J	190	9.60	52.0 J	4100	2.60
	08-Dec-10 FD	9900	-10	-80.4	5700	1200	ND (1.0)	ND (1.0)	89.0 J	180	9.80	60.0 J	4000	2.50
	06-Dec-11	10000	-10.1	-79.2	5700	1300	ND (2.5)	ND (2.5)	120	170	7.60	43.0	4000	2.70
	06-Dec-11 FD	9400	-10	-79.5	5600	1200	ND (2.5)	ND (2.5)	120	160	7.40	43.0 J	3900	2.70
Surface Water Stations														
R-27	07-Mar-05	669	-12.3	-102.0	92.7	244	ND (0.5)	ND (0.5)	136	82.8	31.3	4.72	108	ND (0.2)
	14-Jun-05	686	-11.4	-92.0	90.9	266	ND (0.5)	ND (0.5)	127	81.9	29.8	6.04	98.9	ND (0.2)
	05-Oct-05	678	-11.6	-94.0	85.1	255	ND (0.5)	ND (0.5)	130	101	36.2	6.56	91.2	ND (0.2)
	16-Dec-05	718	-11.7	-87.0	87.9	253	ND (0.5)	ND (0.5)	126	85.5	29.5	5.99	75.6	ND (0.2)
	06-Mar-06	656	-11.8	-92.1	90.6	268	ND (0.5)	ND (0.5)	144	83.5	29.4	5.44 J	101	ND (0.2)
	03-May-06	567	-12.8	-93.9	93.1	267	ND (0.5)	ND (0.5)	139	87.0	31.1	3.12 J	106	ND (0.2)
	04-Oct-06	752 J	-12.2	-94.9	91.5	261	ND (0.5)	ND (0.5)	128	82.9	31.5	6.24 J	98.1	ND (0.2)
	20-Dec-06	680	-12.7	-98.1	94.5	266	ND (0.5)	ND (0.5)	138	83.2	30.9	3.64	106	ND (0.2)
	13-Mar-07	750 J	-13	-99.5	96.5	267	0.537	ND (0.5)	130	86.9	31.3	4.73	106	ND (0.2)
	08-May-07	715 J	-12.9	-104.0	92.6	269	ND (0.5)	ND (0.5)	143	84.3	29.8	5.55	100	ND (0.2)
	11-Sep-07	650	-12.5	-101.0	89.4	253	0.336	ND (0.2)	132	74.2	28.9	5.47	86.5	ND (0.2)
	17-Jun-08	682	-13	-101.0	91.6	254	ND (1.0)	ND (1.0)	134	76.2	31.8	6.69	89.7	ND (0.2)
R-28	08-Mar-05	651	-12.5	-102.0	90.4	231	ND (13)	ND (0.5)	132	83.7	31.4	5.02	107	ND (0.2)
	14-Jun-05	680	-11.6	-95.0	91.2	268	ND (0.5)	ND (0.5)	127	78.5	28.5	5.08	94.5	ND (0.2)
	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.5)	ND (0.5)	122	85.7	30.4	6.30	77.0	ND (0.2)
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.5)	ND (0.5)	126	87.2	29.8	6.11	76.8	ND (0.2)

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012

Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Surface Water Stations														
R-28	06-Mar-06	675	-12.3	-93.4	91.0	270	ND (0.5)	ND (0.5)	146	76.6	26.6	5.22 J	91.5	ND (0.2)
	03-May-06	586	-13	-92.1	93.4	270	ND (0.5)	ND (0.5)	136	88.1	31.4	4.04 J	107	ND (0.2)
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.5)	ND (0.5)	133	84.2	32.1	6.17 J	96.5	ND (0.2)
	20-Dec-06	615	-12.4	-99.6	93.3	262	ND (0.5)	ND (0.5)	143	85.7	32.0	4.66	108	ND (0.2)
	14-Mar-07	710	-12.8	-100.0	96.7	268	0.534	ND (0.5)	133	87.9	31.0	5.71	105	ND (0.2)
	09-May-07	690	-13	-102.0	95.8	271	ND (0.5)	ND (0.5)	143	86.1	30.5	5.92	103	ND (0.2)
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.2)	122	73.8	29.9	6.36	89.2	ND (0.2)
	18-Jun-08	672	-13.2	-102.0	89.4	248	ND (1.0)	ND (1.0)	132	43.3	31.1	6.95	93.9	ND (0.2)
	17-Sep-08	640	---	---	91.4	256	ND (0.5)	ND (0.5)	132	83.4	31.2	6.48	78.0	ND (0.2)
	04-Dec-08	649	-11.9	-97.0	97.4	260	ND (1.0)	ND (1.0)	135	81.7	30.0	5.95	114	0.262
	21-Jan-09	652	-12	-96.7	91.5	253	ND (0.5)	ND (0.5)	134	79.2	27.8	6.01	91.7	ND (0.2)
	09-Apr-09	643	-12.4	-97.8	92.7	250	ND (1.0)	ND (0.5)	138	79.6	28.8	5.44	97.0	ND (0.2)
	08-Jul-09	632	-12.8	-98.6	84.5	239	ND (0.5)	ND (0.5)	131	79.6	27.3	6.17	86.9	ND (0.2)
	09-Sep-09	640	-12.5	-99.1	86.0	236	ND (1.0)	ND (1.0)	131	74.8	26.2	6.01	78.7	ND (0.2)
	14-Dec-09	612	-13	-98.3	89.7	244	ND (1.0)	ND (1.0)	131	73.5	26.7	4.98	88.2	ND (0.2)
	21-Dec-10	602	-12.1	-102.0	91.0	223	ND (0.5)	ND (0.5)	133	69.1	24.8	4.75	87.8	ND (0.2)
	11-Jan-12	---	---	---	80.5	218	ND (0.5)	ND (0.5)	127	70.2	27.4	4.76	83.7	ND (0.2)

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through June 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

NOTES:

FD = field duplicate sample.
ND =parameter not detected at the listed reporting limit.
J = concentration or reporting limit estimated by laboratory or data validation.
--- = data not collected or available.

[a] Data collected February 2011 due to field logistical issues.

General chemistry results in milligrams per liter (mg/L), except Oxygen-18 and Deuterium, which are expressed as differences from global standards in parts per thousand.

Alkalinity (total) reported as calcium carbonate. Nitrate reported as Nitrogen (N).

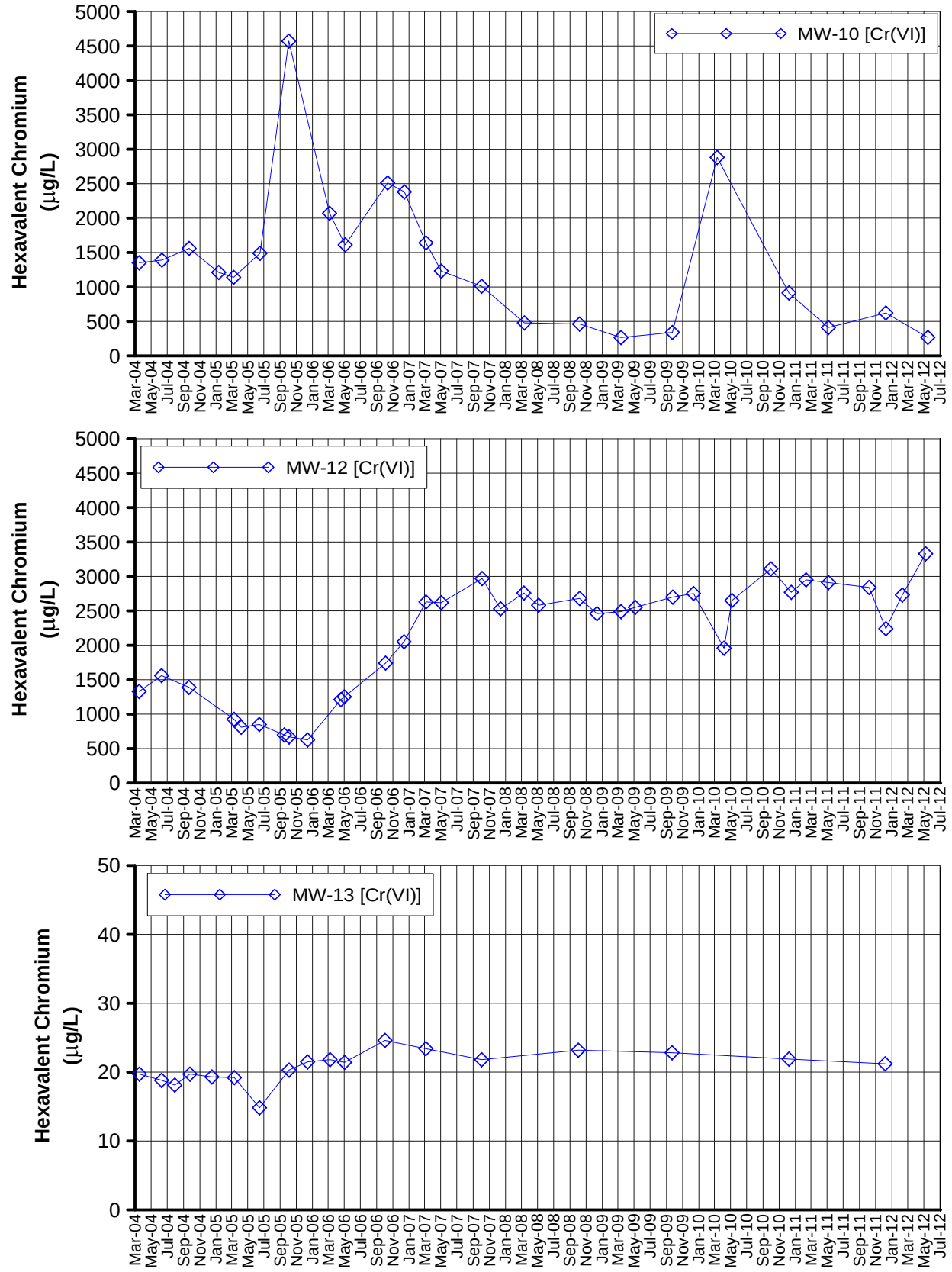

FIGURE C-1
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

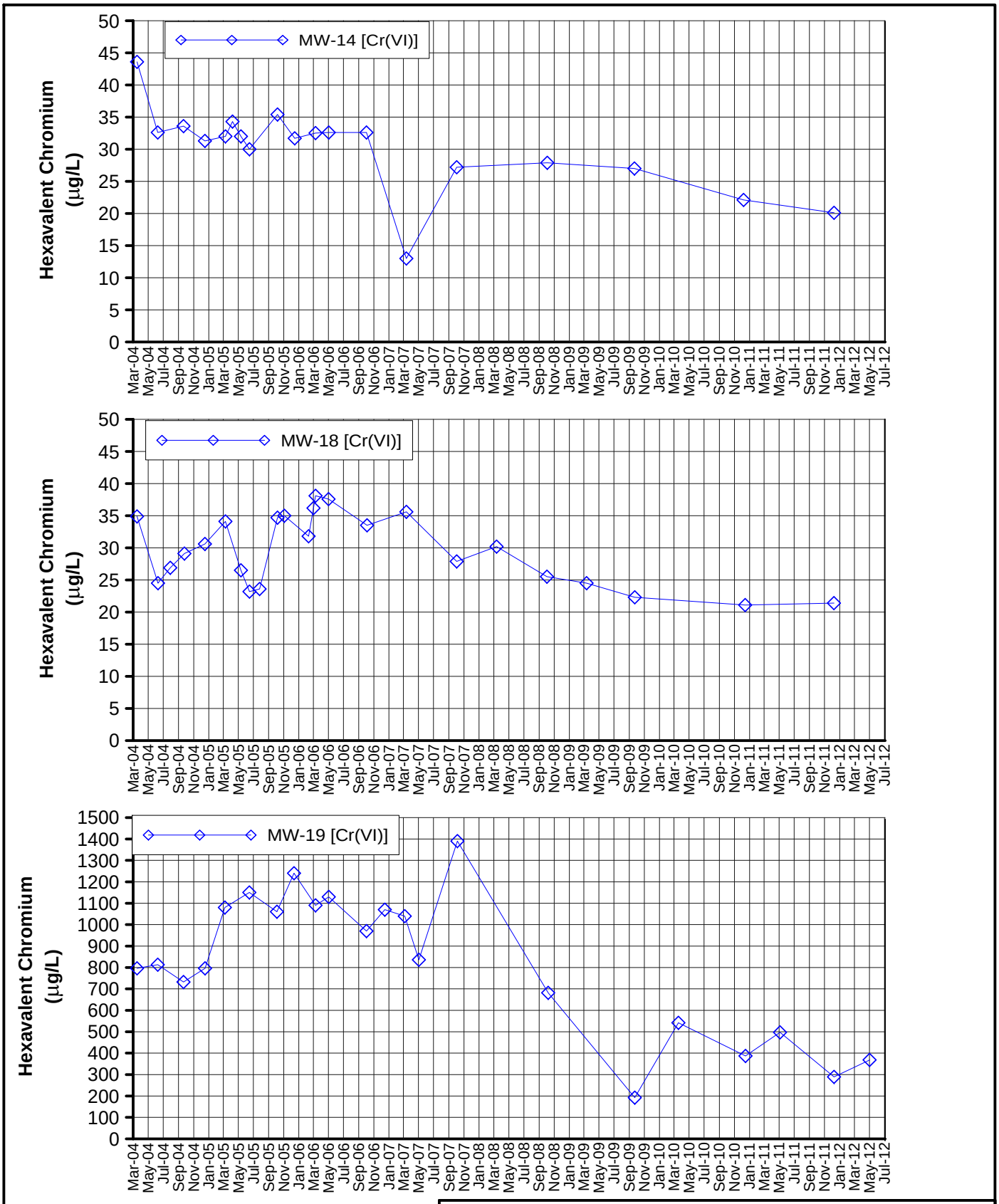

FIGURE C-2
HEXAVALENT CHROMIUM
IN MW-14, MW-18, AND MW-19
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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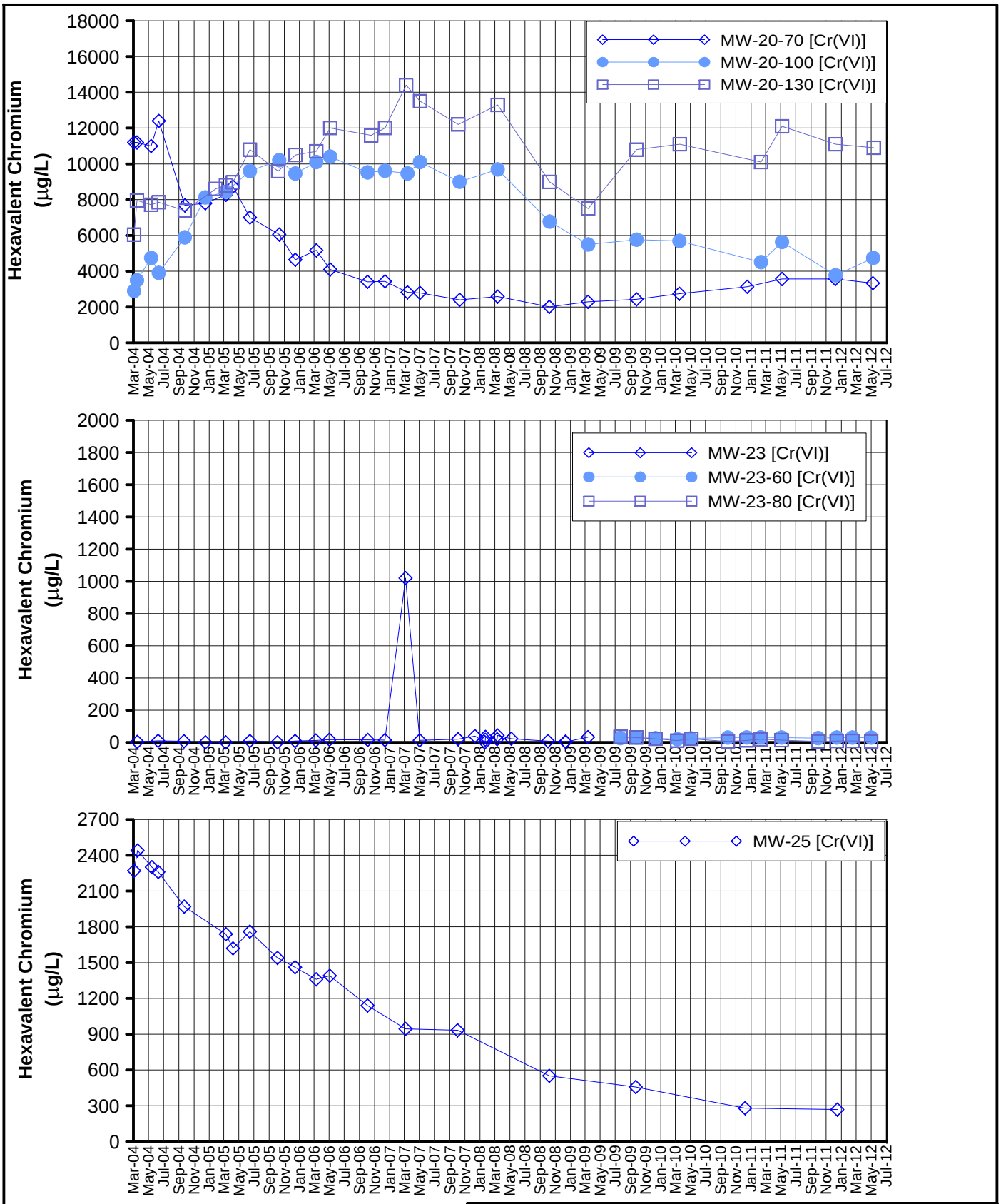

Notes:
1) Fourth Quarter 2010 data for MW-20-100 and MW-20-130 collected in February 2011 due to logistical issues.

FIGURE C-3
HEXAVALENT CHROMIUM
IN MW-20, MW-23, AND MW-25 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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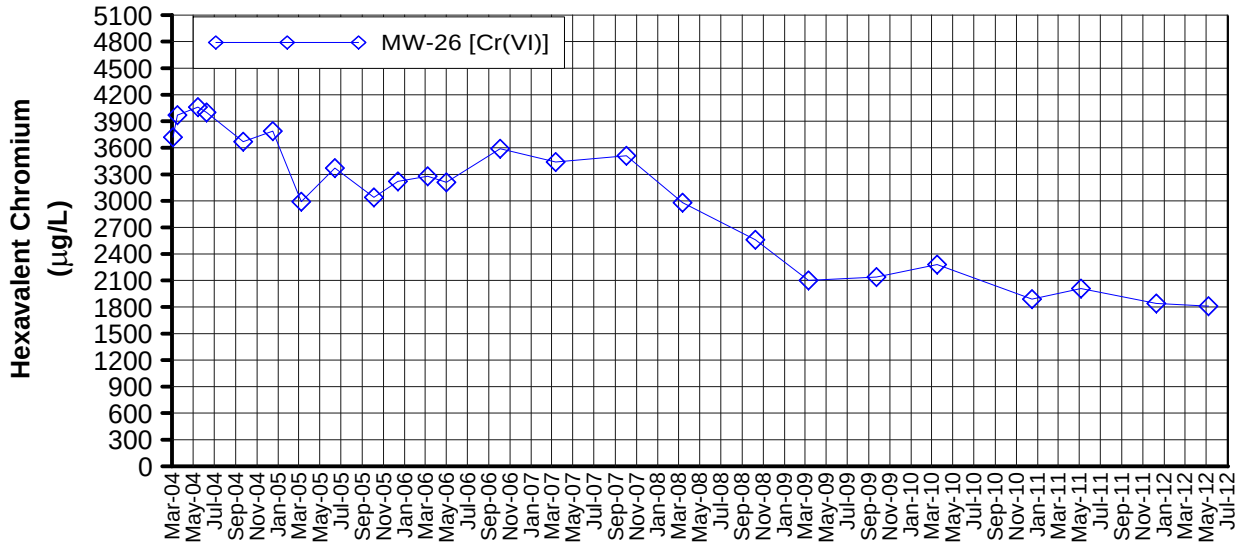

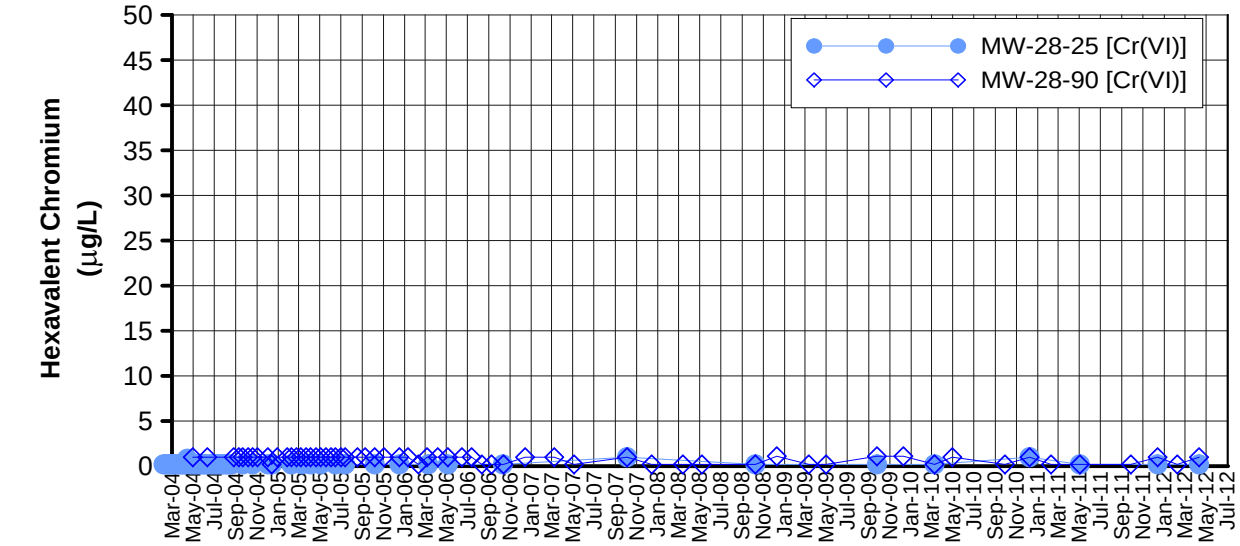

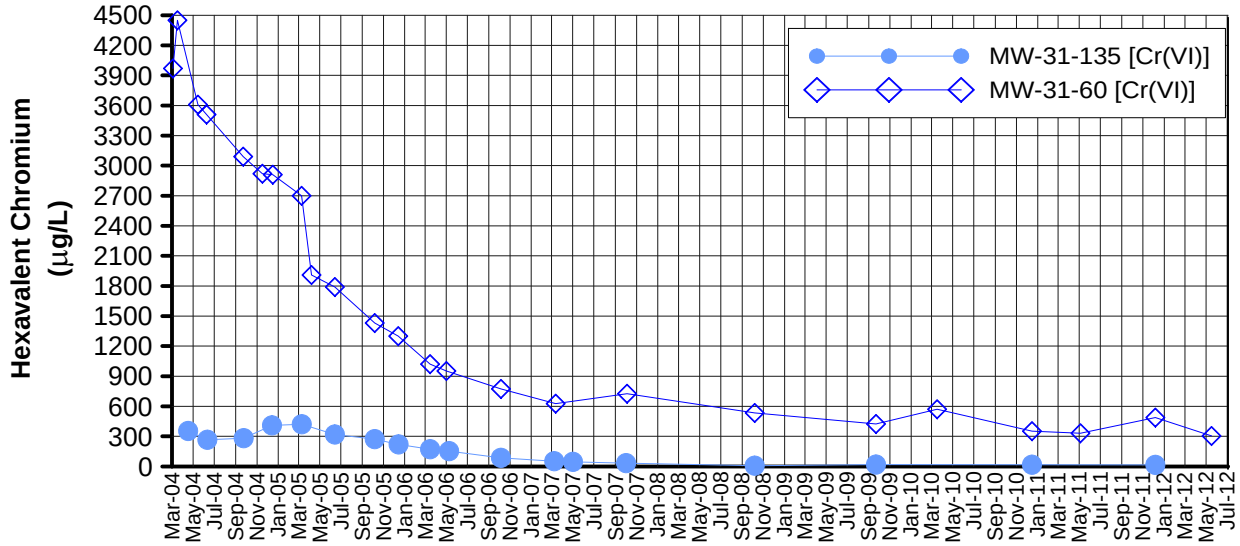

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-90 is 20 µg/L.

FIGURE C-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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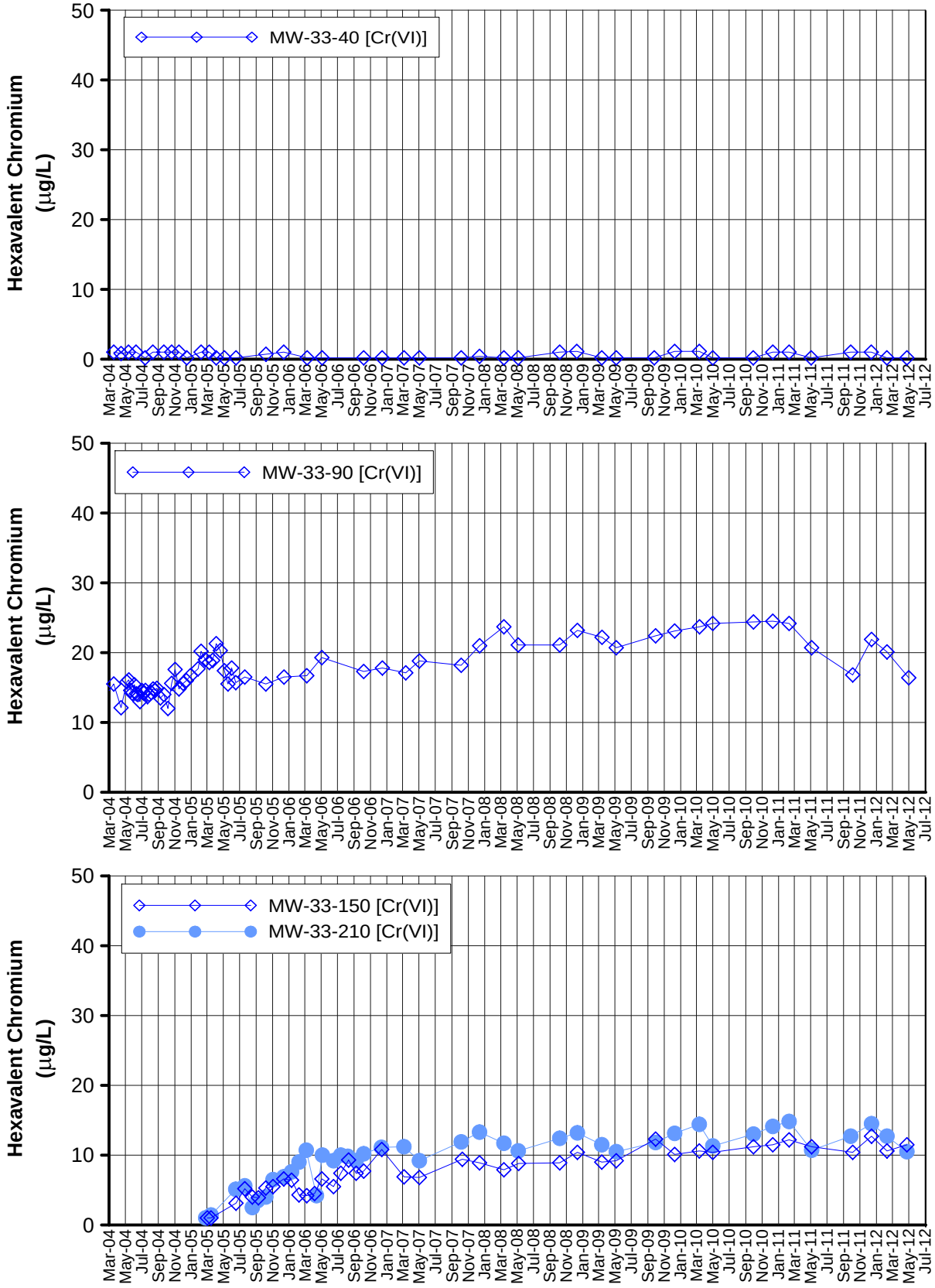

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-33-40 is 20 µg/L.
3) The trigger level for MW-33-90 is 25 µg/L.
4) The trigger level for MW-33-150 is 20 µg/L.
5) The trigger level for MW-33-210 is 20 µg/L.

FIGURE C-5
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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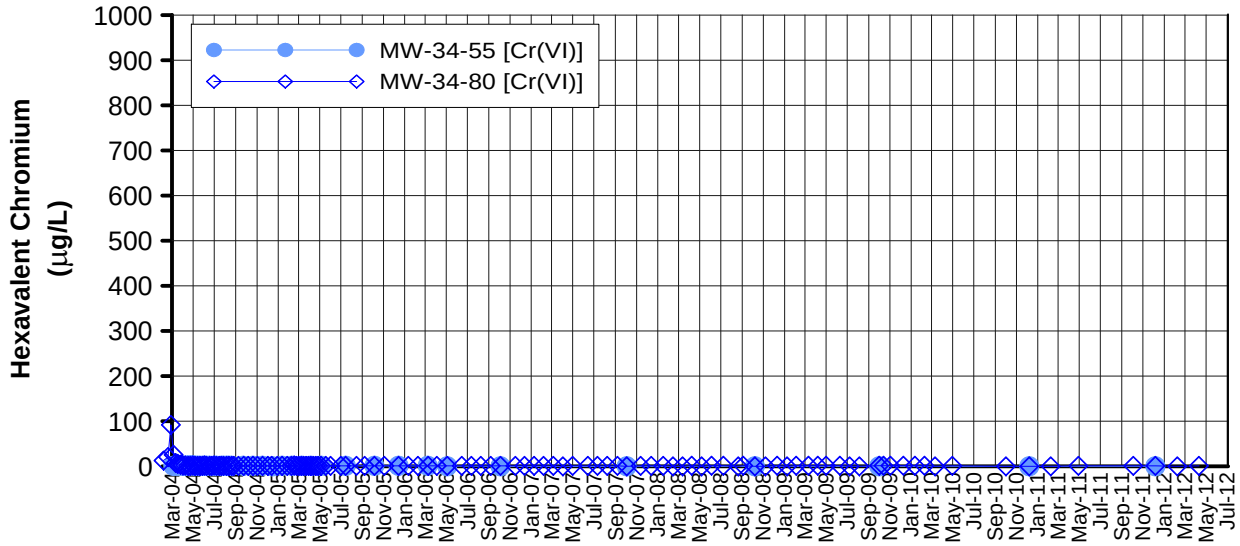

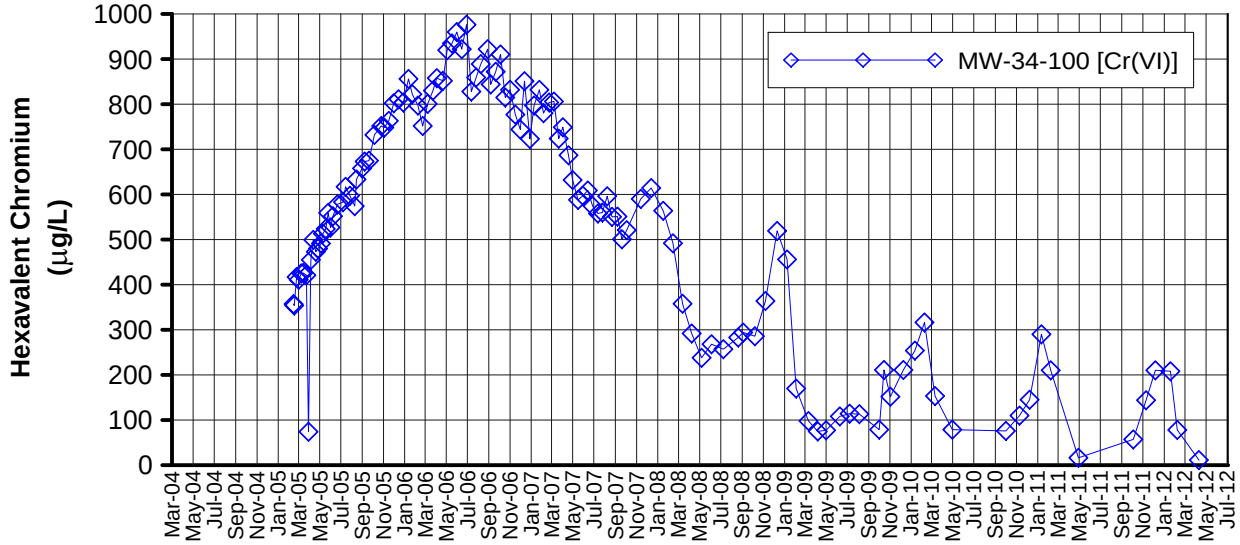

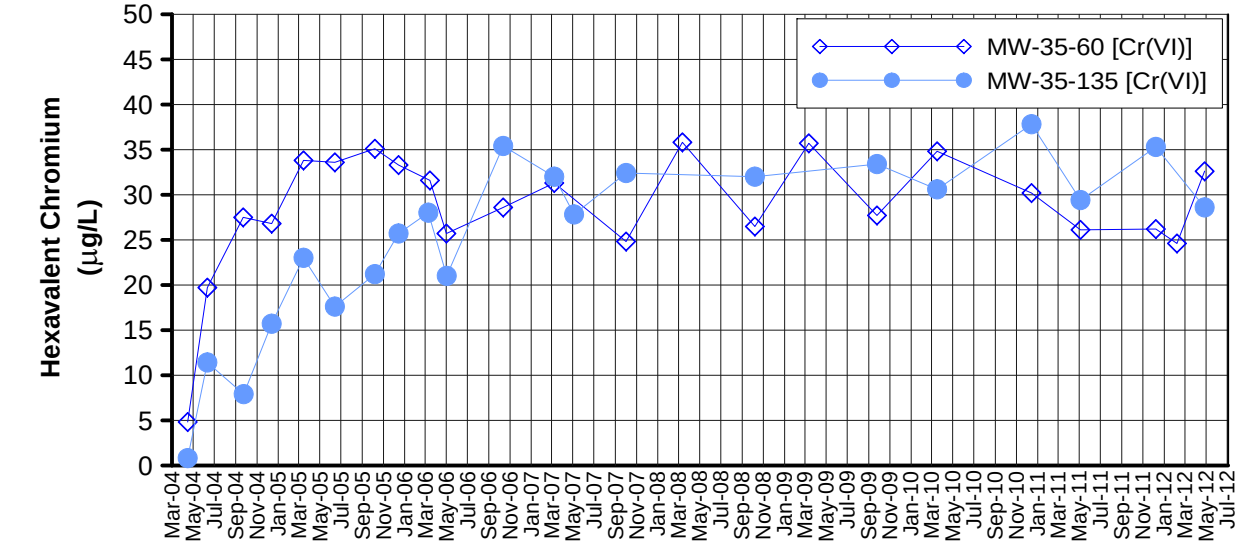

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-34-80 is 20 µg/L.
3) The trigger level for MW-34-100 is 750 µg/L.

FIGURE C-6
HEXAVALENT CHROMIUM
IN MW-34 AND MW-35 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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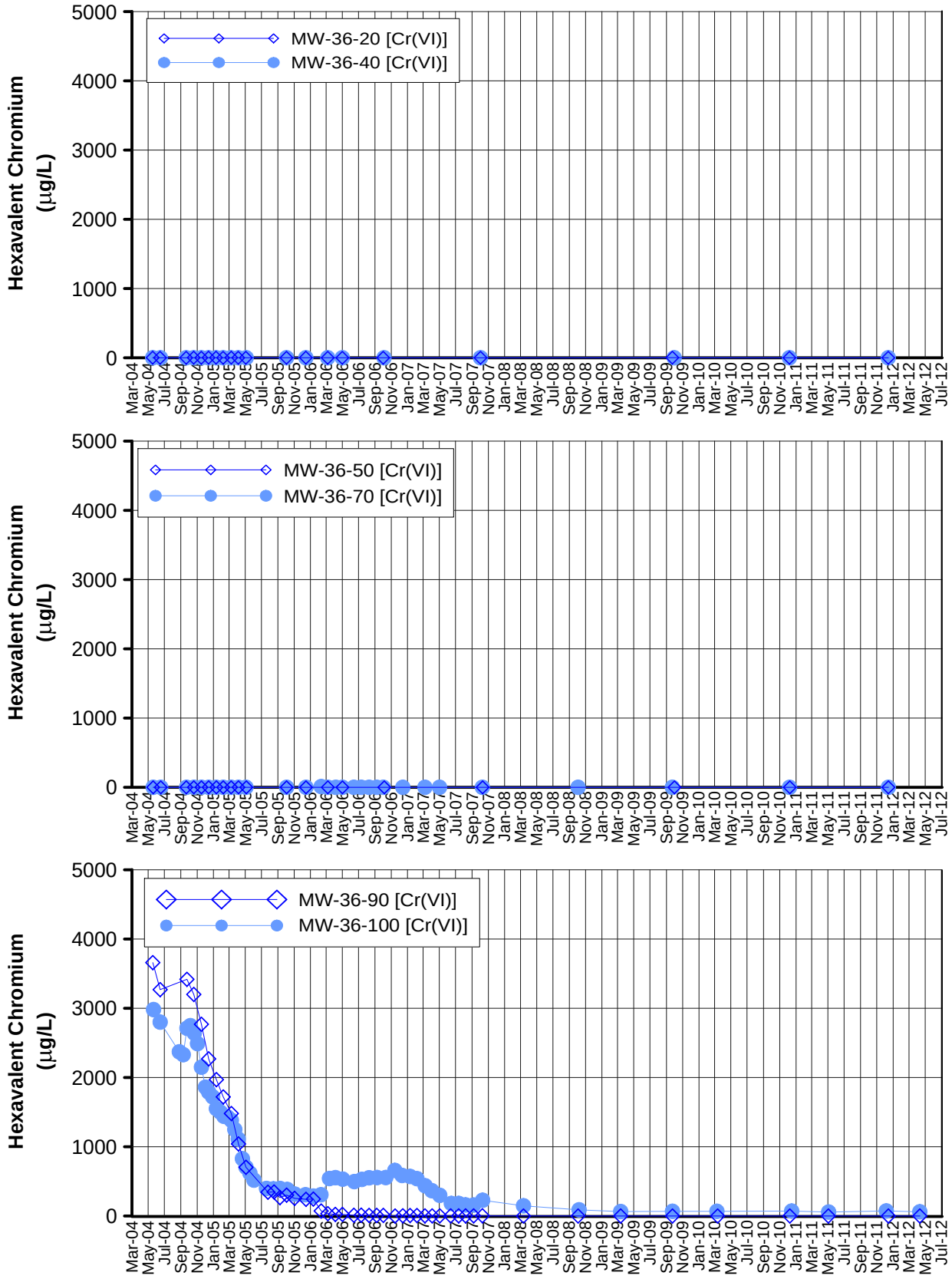
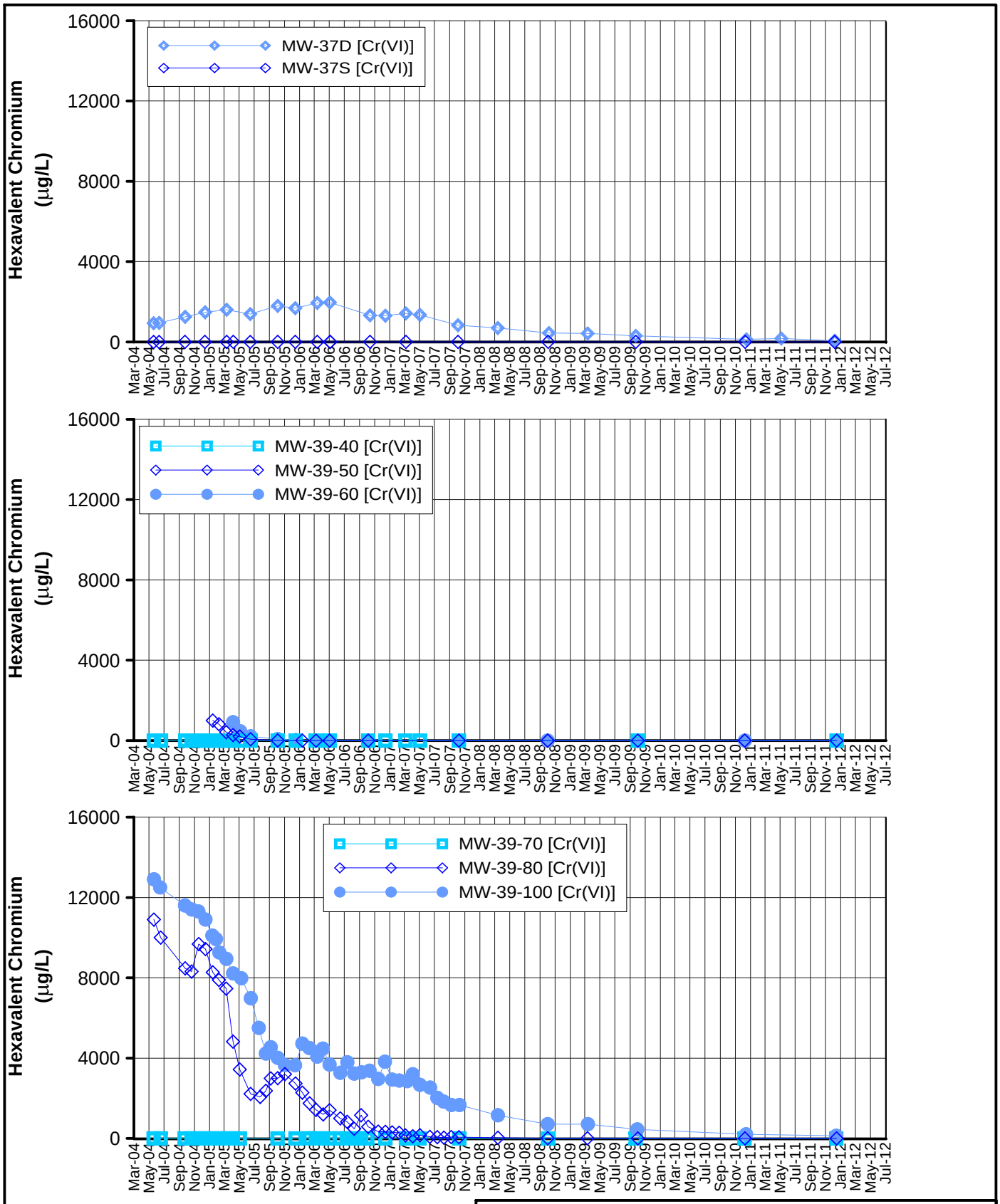


Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-70 is 20 µg/L.

FIGURE C-7
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-40 is 20 µg/L.

FIGURE C-8
HEXAVALENT CHROMIUM
IN MW-37 AND MW-39 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

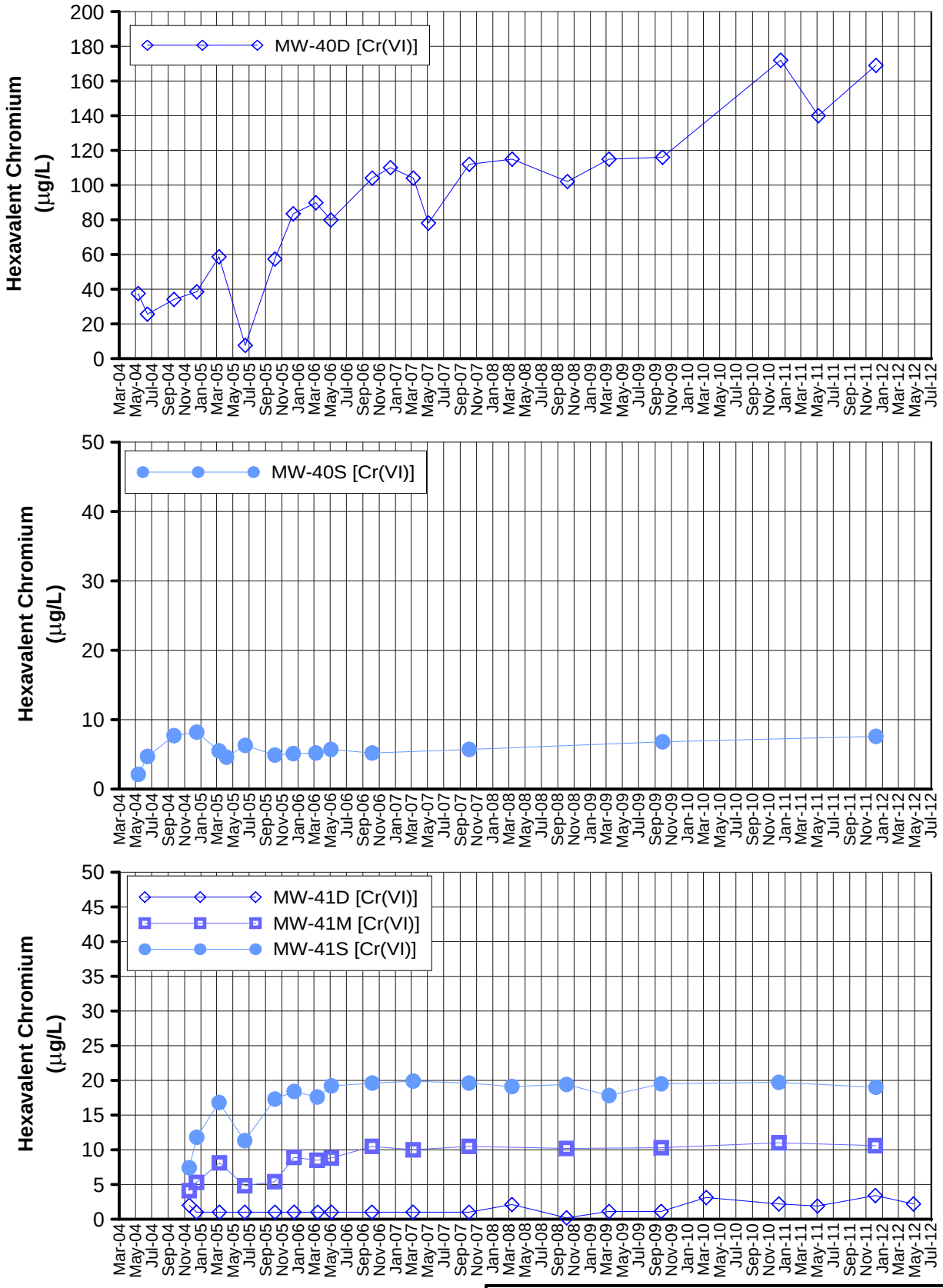
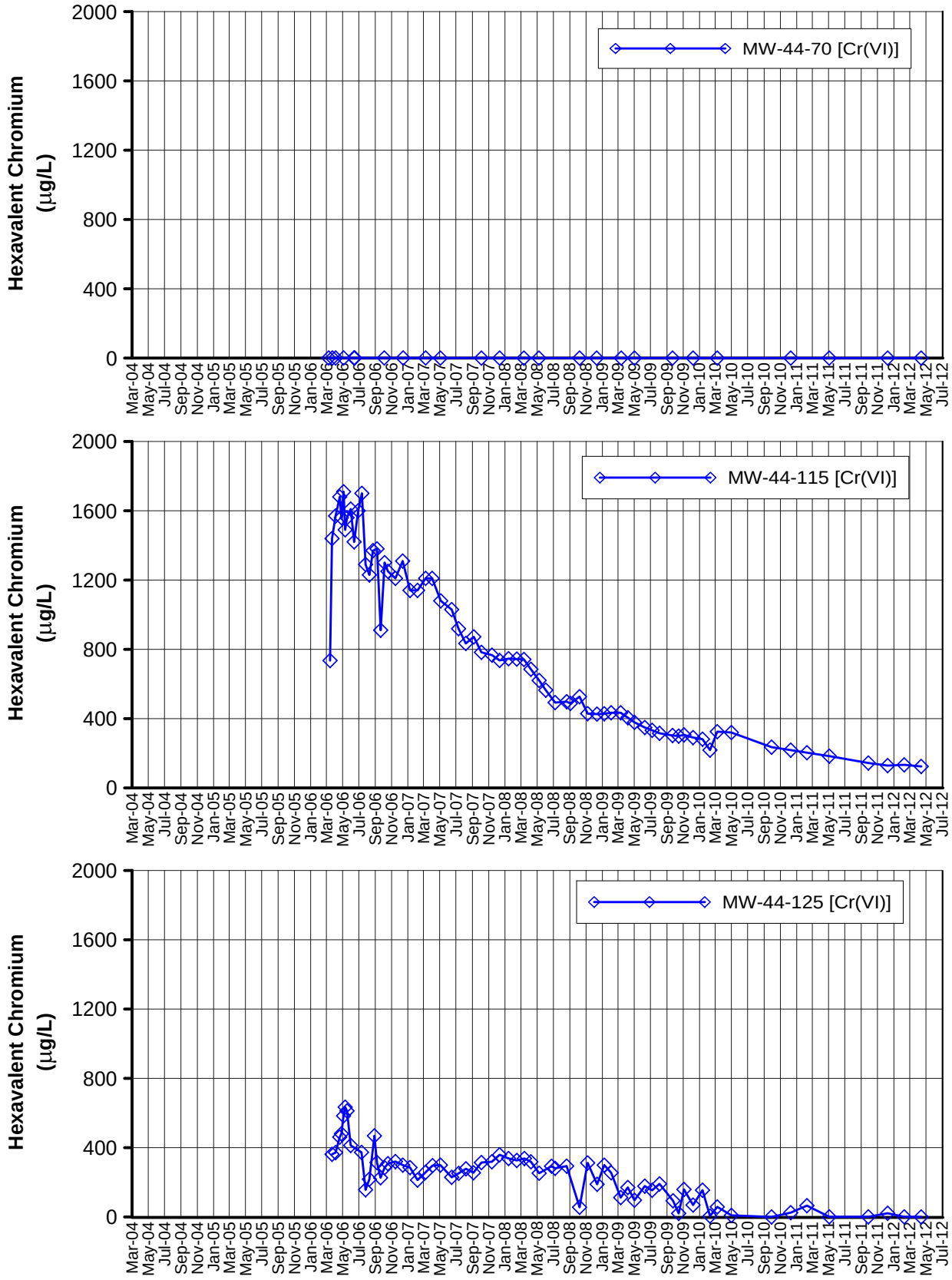


FIGURE C-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

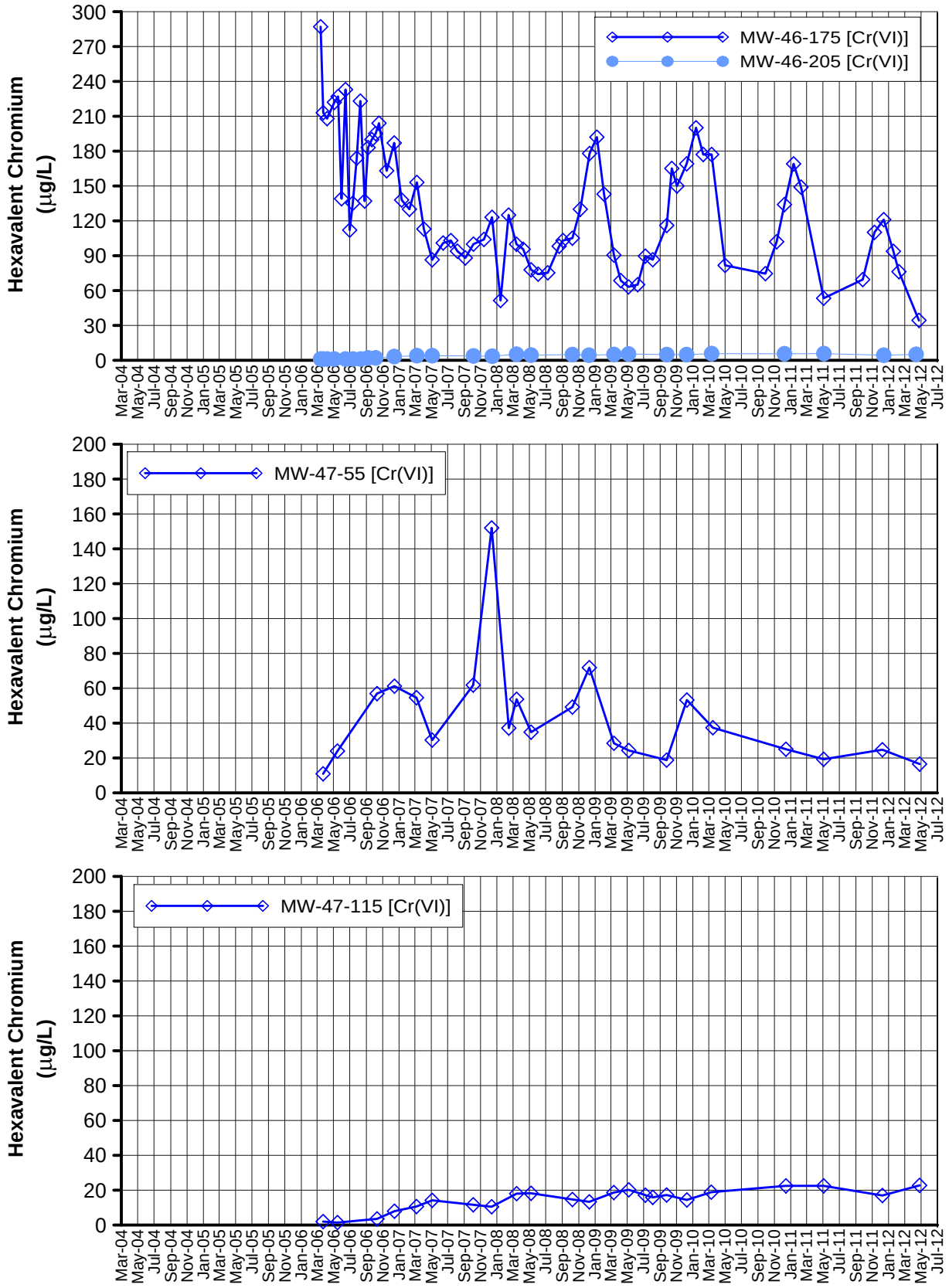
CH2MHILL



Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-44-70 is 20 µg/L.
3) The trigger level for MW-44-115 is 1,200 µg/L.
4) The trigger level for MW-44-125 is 475 µg/L.

FIGURE C-10
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

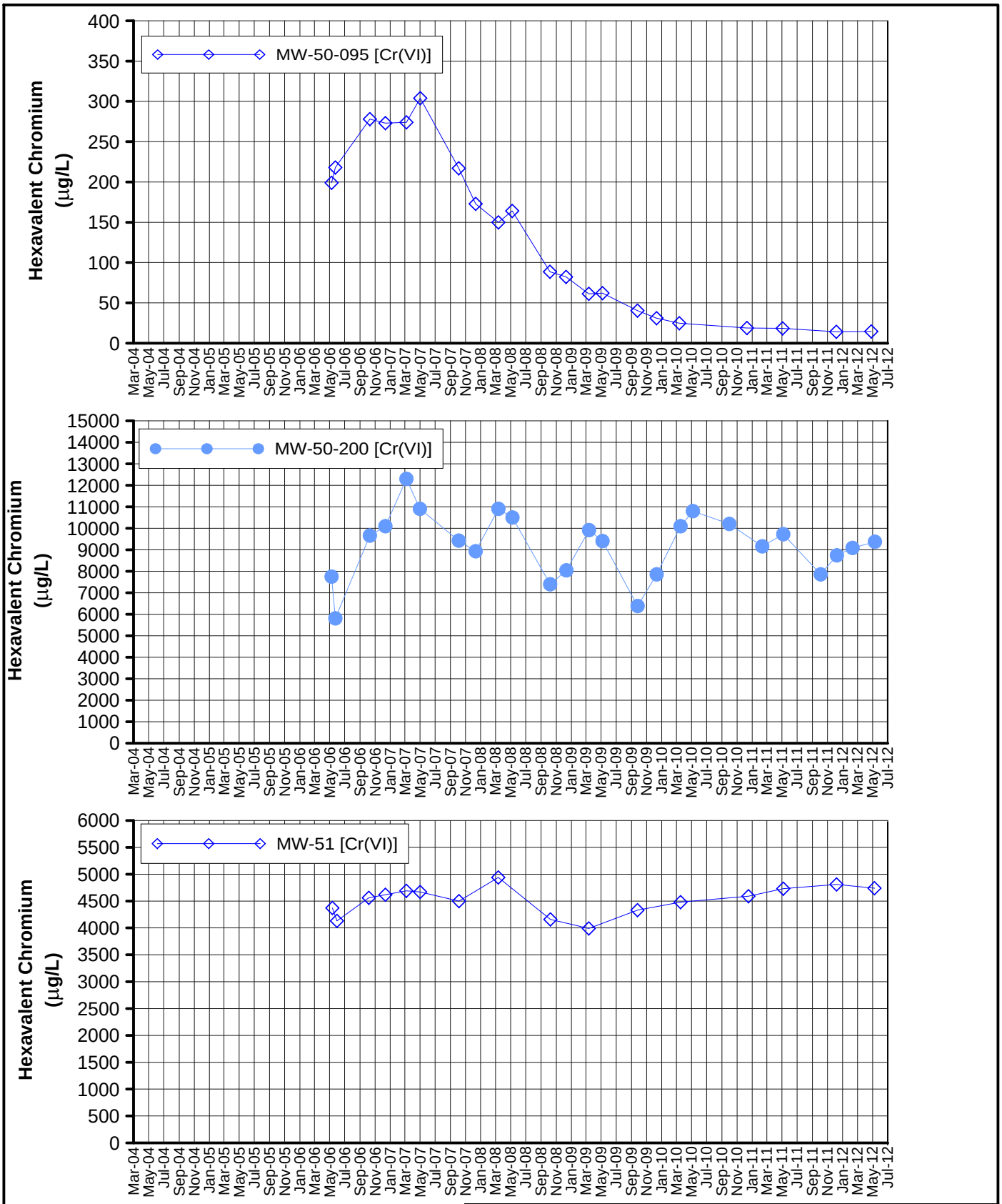


Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-46-175 is 225 µg/L.
3) The trigger level for MW-46-205 is 20 µg/L.
4) The trigger level for MW-47-55 is 475 µg/L.
5) The trigger level for MW-47-115 is 31 µg/L.

FIGURE C-11
HEXAVALENT CHROMIUM
IN MW-46 AND MW-47 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

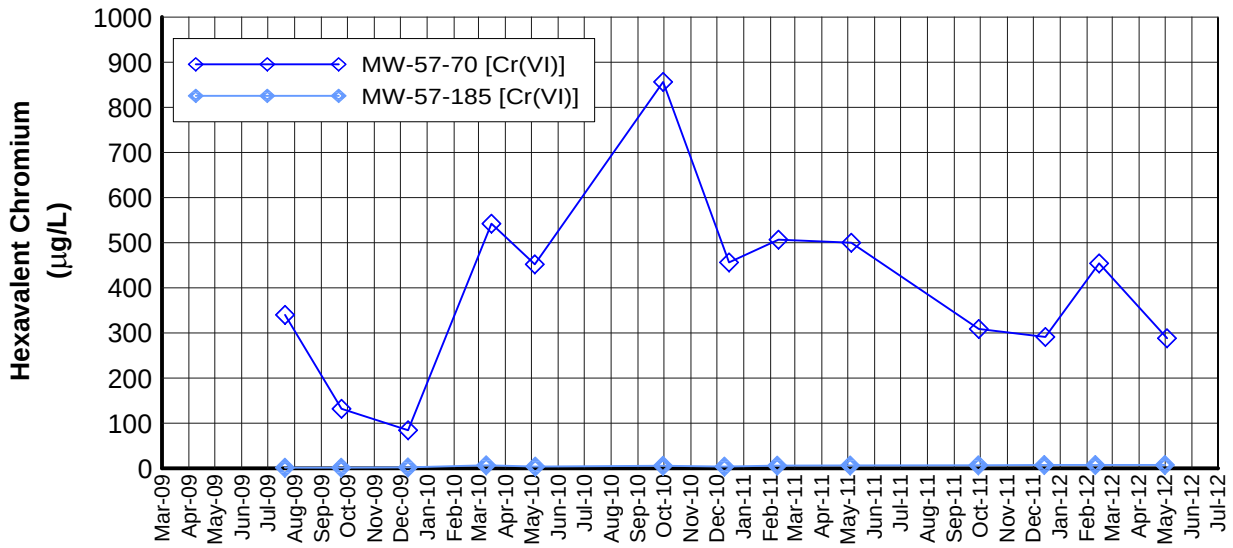
CH2MHILL

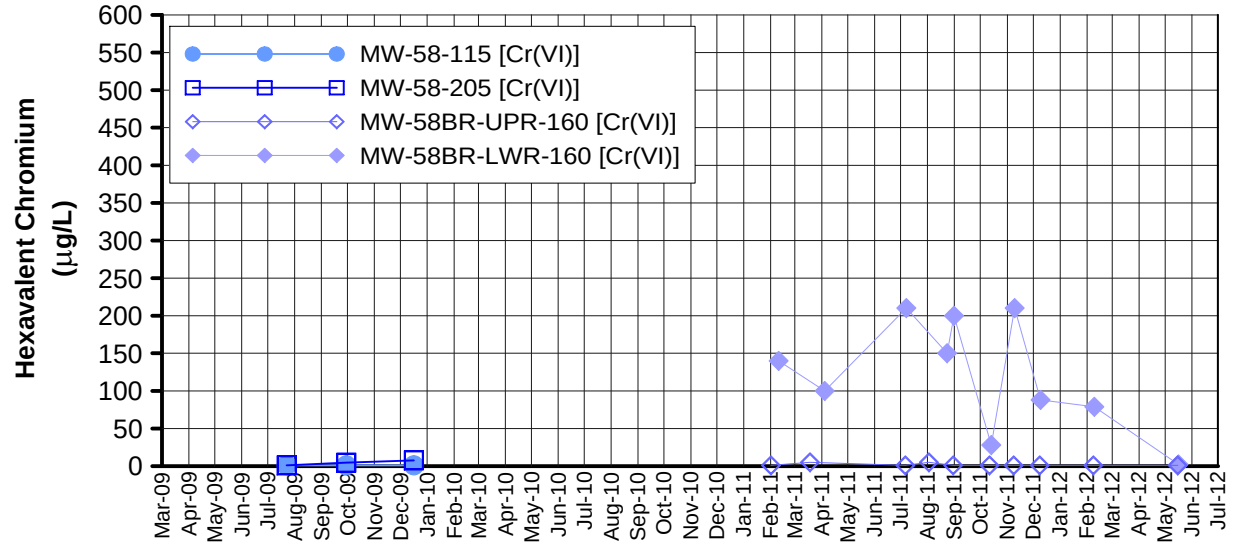


Notes:
1) Fourth Quarter 2010 data for MW-50-200 collected in February 2011 due to logistical issues.

FIGURE C-12
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL





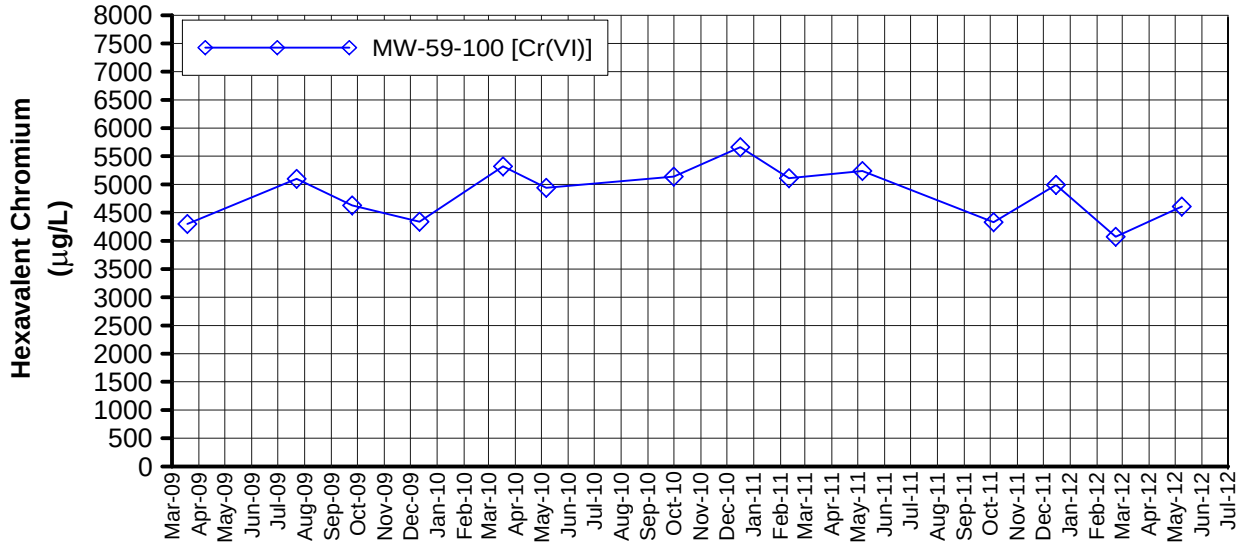


FIGURE C-13
HEXAVALENT CHROMIUM
IN MW-57, MW-58 and MW-59 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

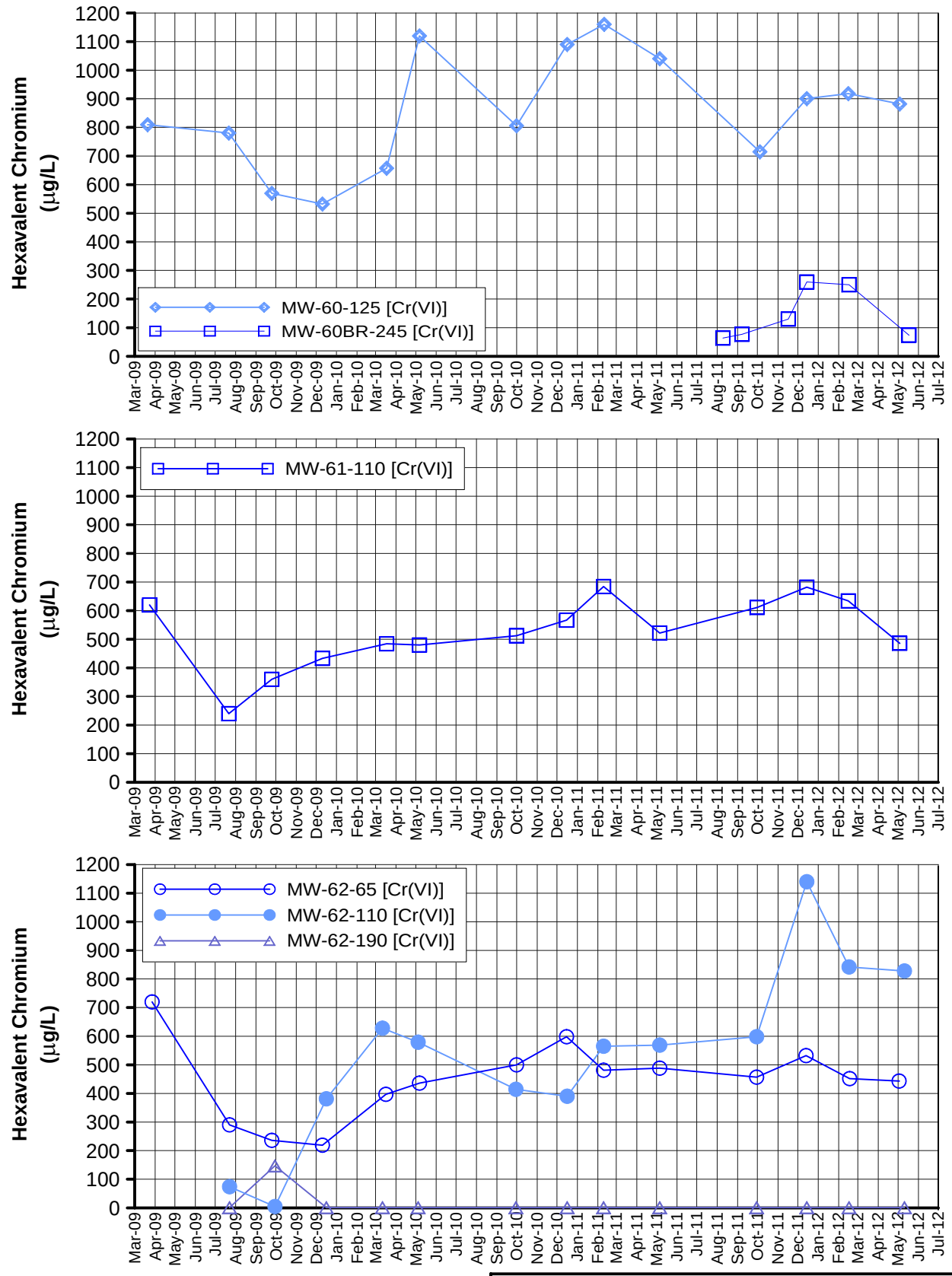


FIGURE C-14
HEXAVALENT CHROMIUM IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

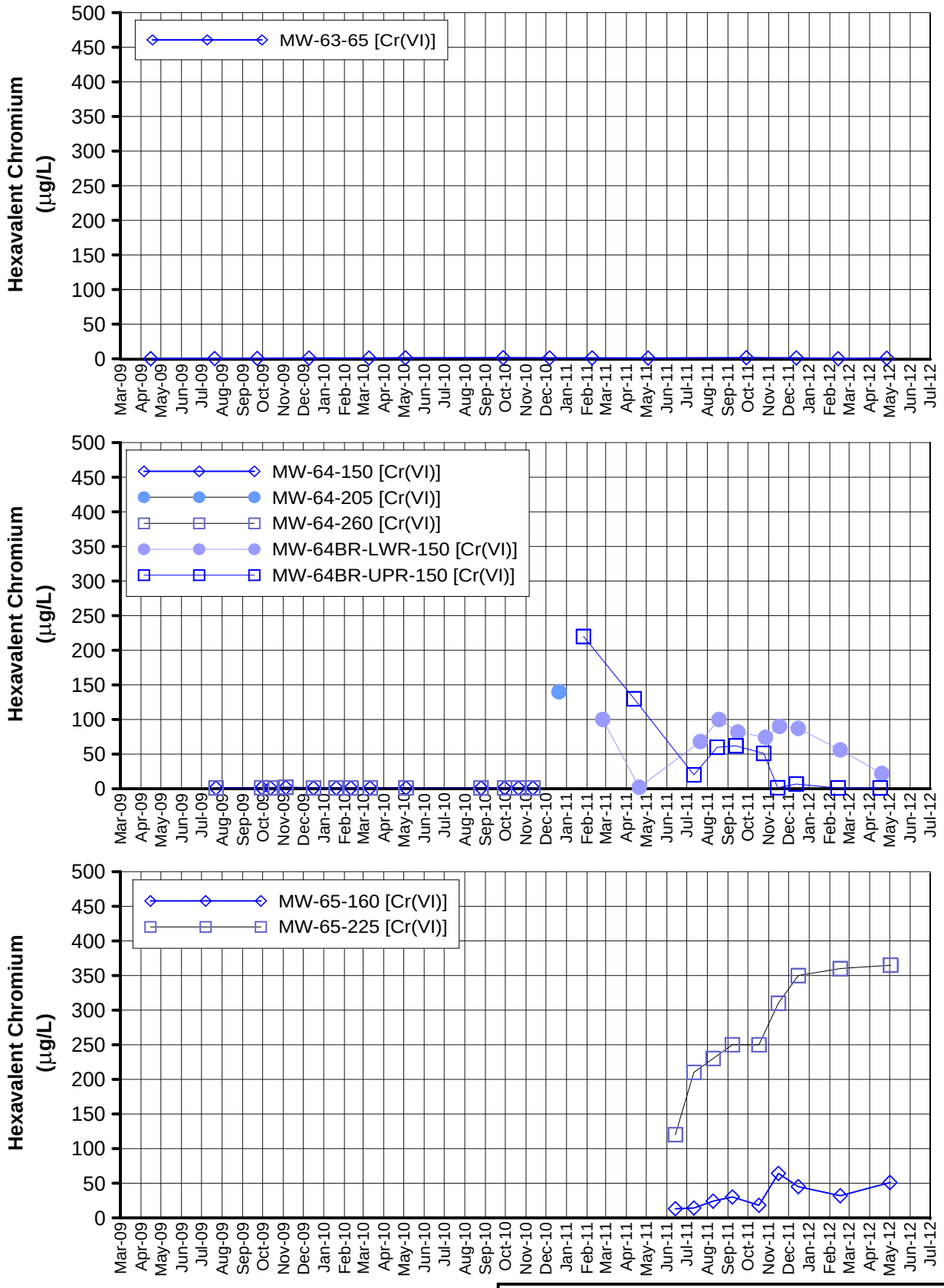


FIGURE C-15
HEXAVALENT CHROMIUM
IN MW-63-065, AND CLUSTERS MW-64 AND MW-65
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

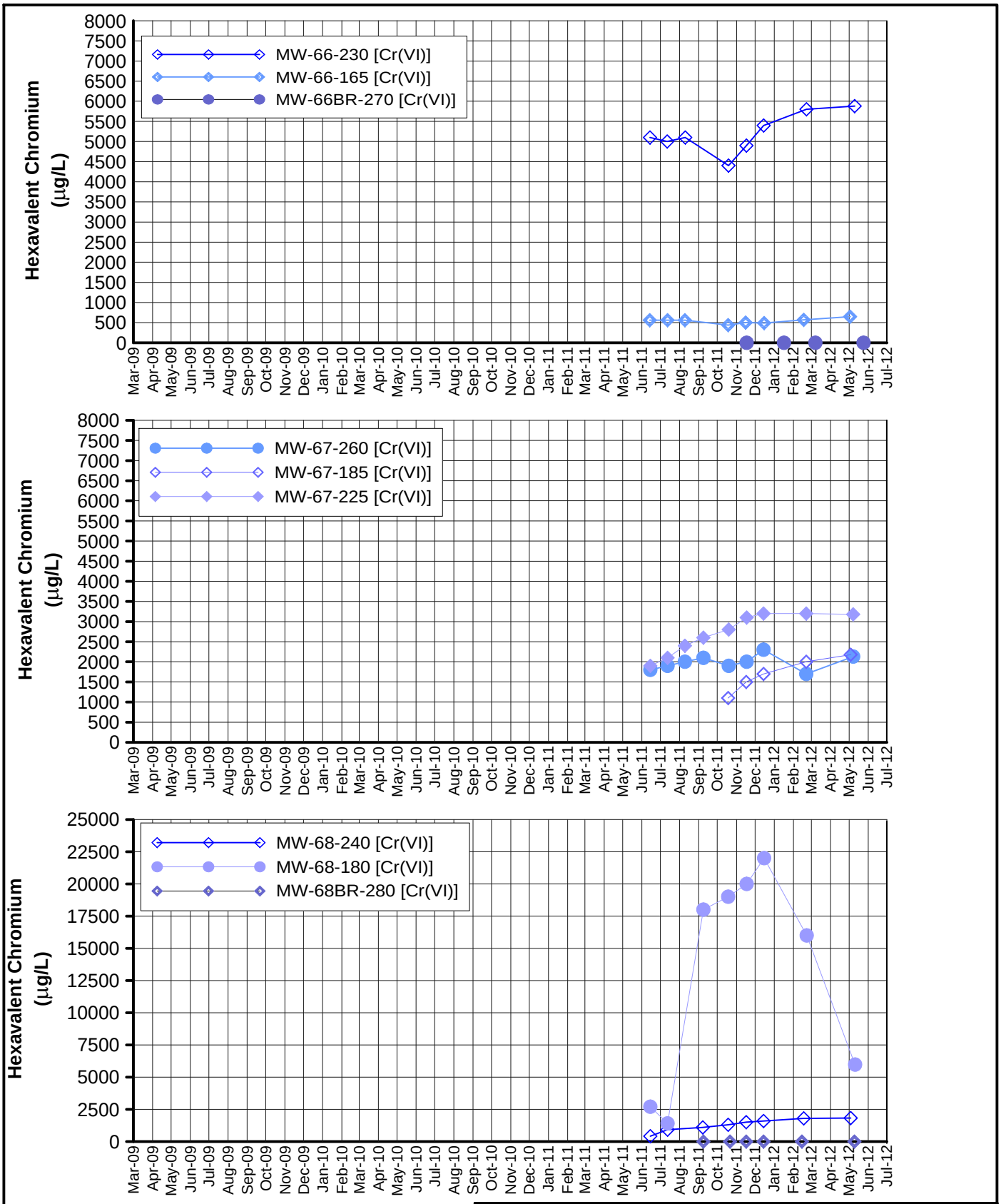


FIGURE C-16
HEXAVALENT CHROMIUM
IN MW-66, MW-67 AND MW-68 CLUSTERS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

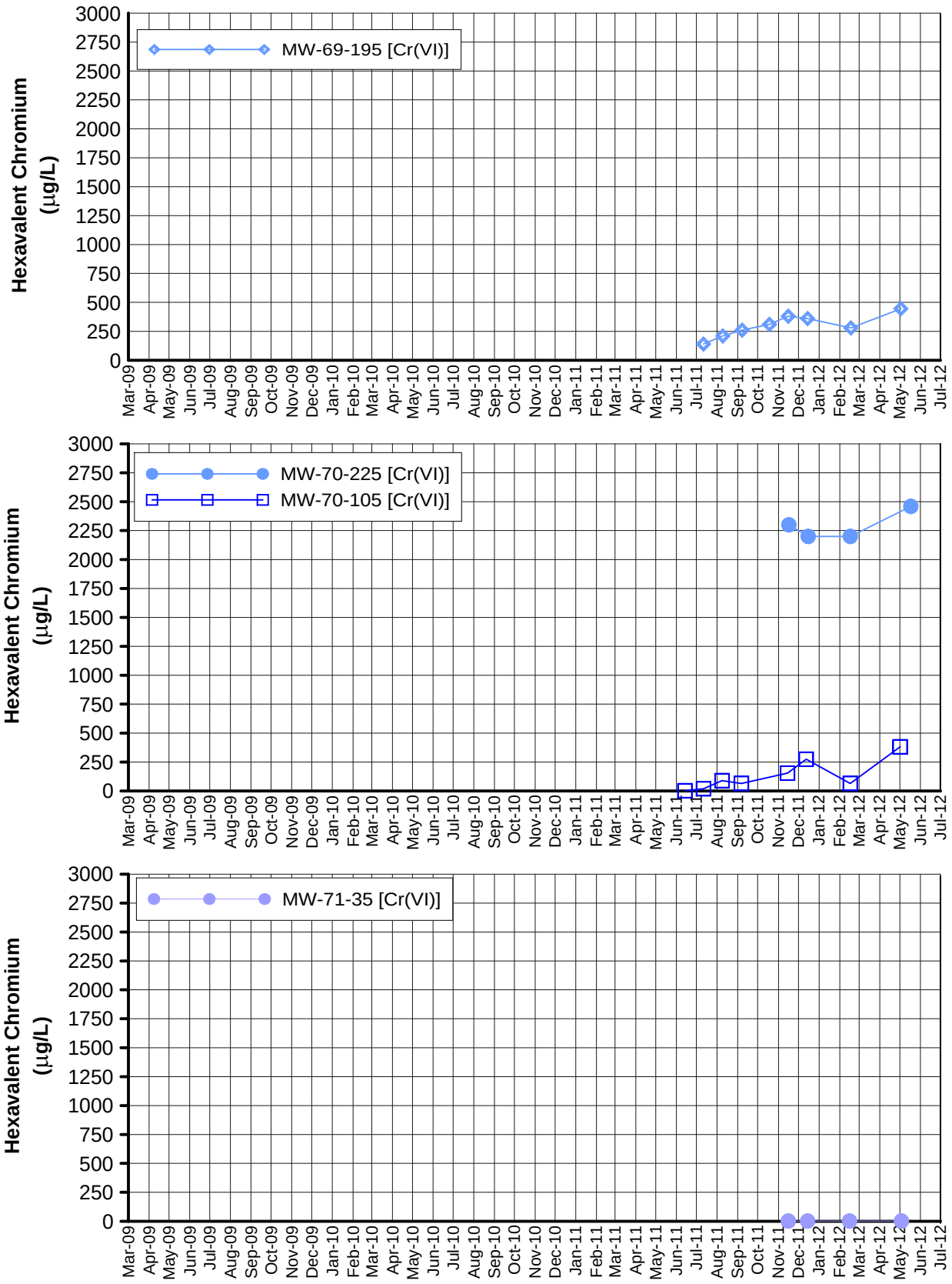


FIGURE C-17
HEXAVALENT CHROMIUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-35
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

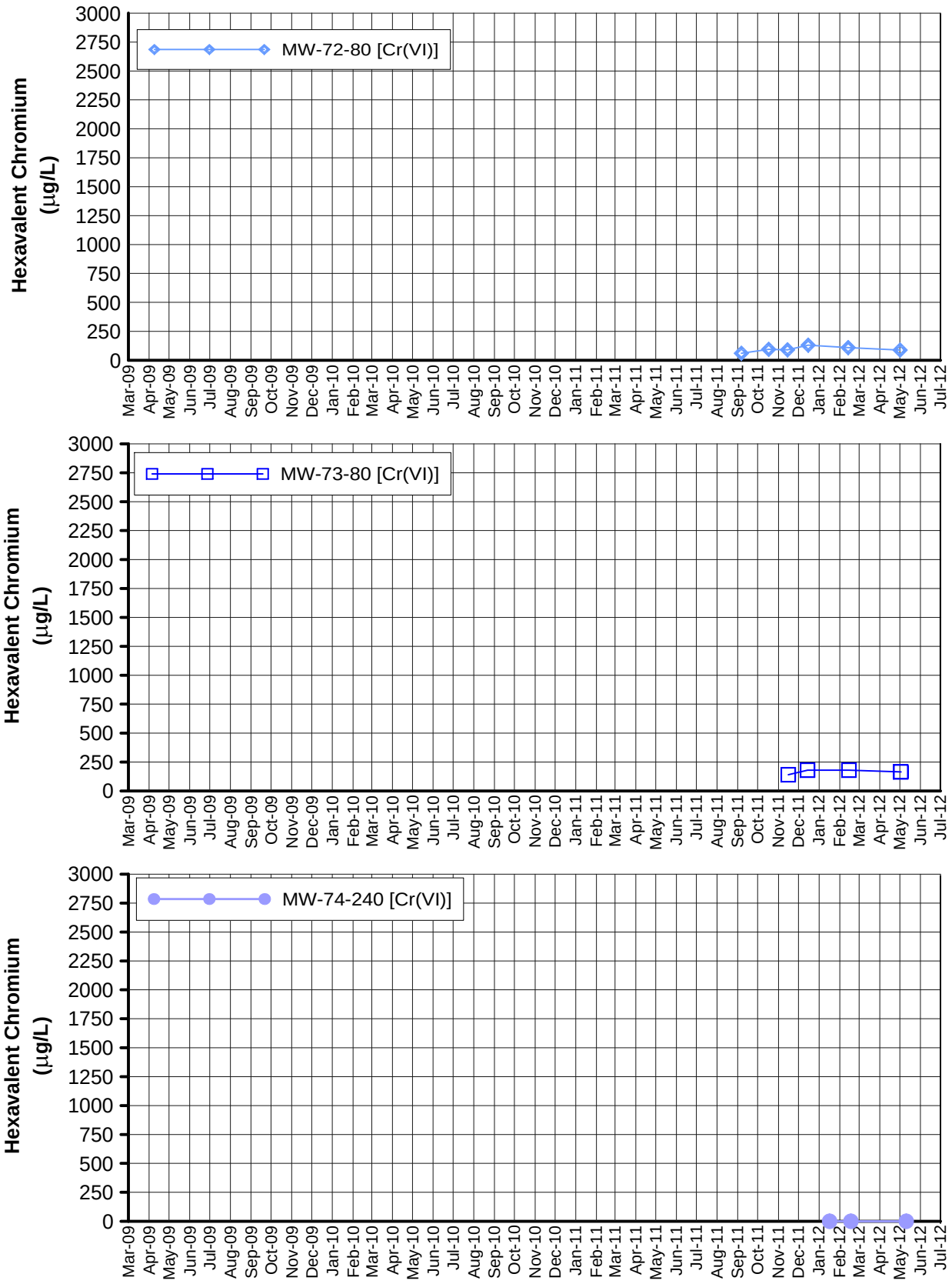


FIGURE C-18
HEXAVALENT CHROMIUM
IN MW-72-80, MW-73-80, AND MW-74-240
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

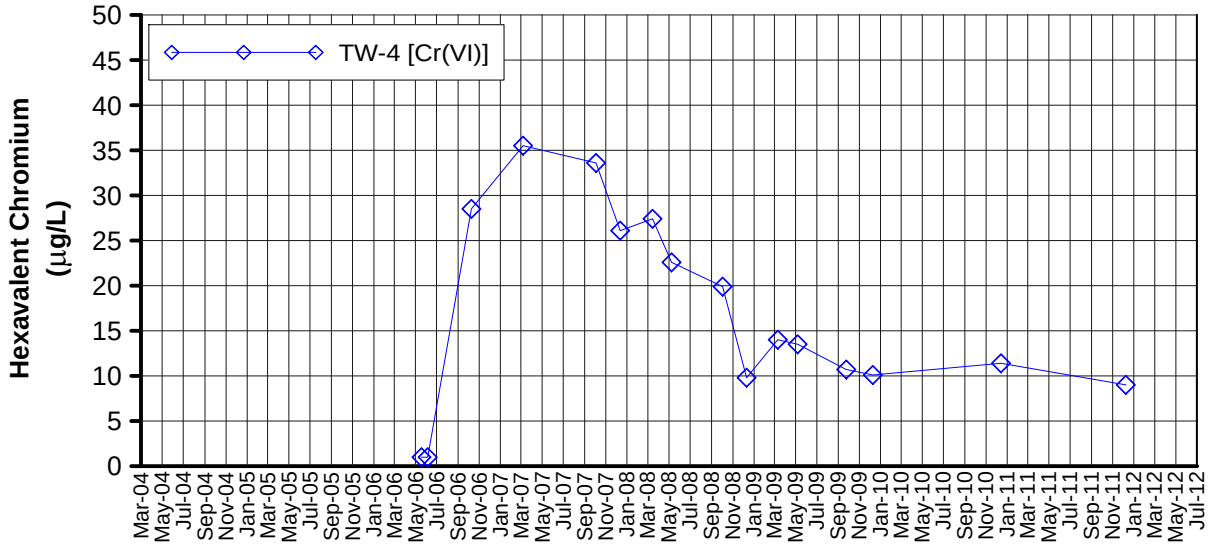


FIGURE C-19
HEXAVALENT CHROMIUM
IN TW-4
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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Appendix D
Interim Measure Extraction System Operations Log, Second Quarter 2012

APPENDIX D

Interim Measures Extraction System Operations Log, Second Quarter 2012, PG&E Topock Performance Monitoring Program

During Second Quarter 2012 (April through June), extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute, excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during Second Quarter 2012. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 94.9 percent during Second Quarter 2012.

The Interim Measure Number 3 (IM-3) facility treated approximately 16,670,880 gallons of extracted groundwater during Second Quarter 2012. The IM-3 facility also treated approximately 2,340 gallons of water generated from the groundwater monitoring program and 92,100 gallons of water from IM-3 injection well development and well backwashing. Six containers of solids from the IM-3 facility were transported offsite during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 5.1 percent of downtime during Second Quarter 2012) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (for example, water level data) at the site.

D.1 April 2012

- **April 2, 2012 (planned):** The extraction well system was offline from 8:44 a.m. to 9:22 a.m., 9:28 a.m. to 9:30 a.m., and 9:36 a.m. to 9:38 a.m. due to critical alarm and leak-detection system testing that shut down extraction wells. Extraction system downtime was 42 minutes.
- **April 16, 2012 to April 20, 2012 (planned):** The extraction well system was offline from 4:54 a.m. on April 16, 2012 to 5:30 a.m. on April 18, 2012; 5:32 a.m. on April 18, 2012 to 8:22 a.m. on April 19, 2012; 10:00 a.m. on April 19, 2012 to 12:20 p.m. on April 19, 2012; 2:08 p.m. on April 19, 2012 to 7:12 a.m. on April 20, 2012; 7:14 a.m. on April 20, 2012 to 8:40 a.m. on April 20; and 8:42 a.m. on April 20 to 10:18 a.m. on April 20 due to scheduled biannual plant maintenance. Extraction system downtime was 4 days, 1 hour, and 52 minutes.
- **April 27, 2012 (unplanned):** The extraction well system was offline from 8:10 p.m. to 8:26 p.m. and 9:12 p.m. to 10:44 p.m. due to high water level in the raw water storage tank to slight increase in flow from extraction wells. Extraction system downtime was 1 hour and 48 minutes.

D.2 May 2012

- **May 2, 2012 (planned):** The extraction well system was offline from 11:40 a.m. to 12:10 p.m., 12:16 p.m. to 12:24 p.m., and 12:26 p.m. to 12:28 p.m. due to permanent alarm and leak-detection system testing that shut down extraction wells. Extraction system downtime was 40 minutes.
- **May 3, 2012 (planned):** The extraction well system was offline from 12:46 p.m. to 1:00 p.m. due to maintenance on the sump water level alarm. Extraction system downtime was 14 minutes.
- **May 3, 2012 (unplanned):** The extraction well system was offline from 2:18 p.m. to 2:20 p.m. due to a signal loss to data Historian. Extraction system downtime was 2 minutes.
- **May 5, 2012 (unplanned):** The extraction well system was offline from 4:02 a.m. to 4:34 a.m. due to the chemical mixing loop low-flow alarm. Extraction system downtime was 32 minutes.

- **May 5, 2012 (planned):** The extraction well system was offline from 9:26 a.m. to 10:38 a.m. and 10:40 a.m. to 10:52 a.m. due to repair of chemical mixing loop flow switch, FSL 201. Extraction system downtime was 1 hour and 24 minutes.
- **May 7, 2012 (unplanned):** The extraction well system was offline from 12:06 p.m. to 1:38 p.m. due to malfunction of the chemical mixing loop flow switch, FSL 201. Extraction system downtime was 1 hour and 32 minutes.
- **May 17, 2012 (planned):** The extraction well system was offline from 4:38 p.m. to 4:48 p.m. to allow for acceptance of 24,500 gallons of backwash water from injection well, IW-03, rehabilitation. Extraction system downtime was 10 minutes.
- **May 18, 2012 (planned):** The extraction well system was offline from 3:40 a.m. to 4:38 a.m. and 9:06 a.m. to 11:44 a.m. to allow for acceptance of 28,000 gallons of backwash water from injection well, IW-02, rehabilitation. Extraction system downtime was 3 hours and 36 minutes.
- **May 26, 2012 (unplanned):** The extraction well system was offline from 6:36 a.m. to 7:10 a.m. due to high level alarm in the raw water storage tank. Extraction system downtime was 34 minutes.
- **May 29, 2012 (planned):** The extraction well system was offline from 8:38 a.m. to 10:06 a.m. and 10:08 a.m. to 10:18 a.m. due to monthly scheduled plant maintenance. Extraction system downtime was 1 hour and 38 minutes.

D.3 June 2012

- **June 1, 2012 (unplanned):** The extraction well system was offline from 1:18 p.m. to 1:32 p.m. due to a power outage caused by Needles Power transformer maintenance. Extraction system downtime was 14 minutes.
- **June 6, 2012 (planned):** The extraction well system was offline from 8:44 a.m. to 8:46 a.m., 8:54 a.m. to 8:56 a.m., 9:12 a.m. to 9:14 a.m., 9:20 a.m. to 9:22 a.m., and 9:30 a.m. to 9:32 a.m. due to permanent alarm and leak-detection system testing that shut down extraction wells. Extraction system downtime was 10 minutes.
- **June 27, 2012 (unplanned):** The extraction well system was offline from 1:00 a.m. to 1:06 a.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 6 minutes.
- **June 27, 2012 (unplanned):** The extraction well system was offline from 9:48 p.m. to 9:56 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 8 minutes.

Appendix E
Hydraulic Data for Interim Measures Reporting Period

Table E-1
Average Monthly and Quarterly Groundwater Elevations, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	April 2012	May 2012	June 2012	Quarter Average	Days in Quarter Average
I-3	River Station	457.33	456.63	456.59	456.85	91
MW-20-070	Shallow Zone	455.35	455.21	455.07	455.21	91
MW-20-100	Middle Zone	454.94	454.70	454.59	454.74	91
MW-20-130	Deep Zone	454.67	454.29	454.19	454.38	91
MW-22	Shallow Zone	456.33	455.99	455.75	456.02	91
MW-25	Shallow Zone	456.19	456.55	456.53	456.43	91
MW-26	Shallow Zone	455.91	456.21	456.13	456.09	91
MW-27-020	Shallow Zone	457.17	456.53	456.42	456.70	91
MW-27-060	Middle Zone	457.05	456.40	456.29	456.58	91
MW-27-085	Deep Zone	457.22	456.46	456.33	456.62	83
MW-28-025	Shallow Zone	457.15	456.56	456.45	456.72	91
MW-28-090	Deep Zone	457.05	456.50	456.49	456.68	91
MW-30-050	Middle Zone	456.64	456.14	456.02	456.26	91
MW-31-060	Shallow Zone	456.24	456.11	456.01	456.12	91
MW-31-135	Deep Zone	455.64	455.38	455.27	455.43	91
MW-32-035	Shallow Zone	456.71	456.23	456.07	456.33	91
MW-33-040	Shallow Zone	456.67	456.32	456.24	456.41	91
MW-33-090	Middle Zone	456.90	456.65	456.48	456.68	91
MW-33-150	Deep Zone	456.71	456.37	456.30	456.46	91
MW-34-055	Middle Zone	457.12	456.48	456.38	456.66	91
MW-34-080	Deep Zone	457.08	456.41	456.30	456.59	91
MW-34-100	Deep Zone	456.91	456.32	456.19	456.47	91
MW-35-060	Shallow Zone	457.37	456.95	456.79	457.04	91
MW-35-135	Deep Zone	457.22	457.10	457.00	457.11	91
MW-36-020	Shallow Zone	456.72	456.29	456.16	456.39	91
MW-36-040	Shallow Zone	456.80	456.24	456.12	456.39	91
MW-36-050	Middle Zone	456.73	456.17	456.06	456.32	91
MW-36-070	Middle Zone	456.73	456.16	456.05	456.31	91
MW-36-090	Deep Zone	455.86	455.27	455.15	455.43	91
MW-36-100	Deep Zone	456.09	455.57	455.49	455.71	91
MW-39-040	Shallow Zone	456.52	456.06	455.94	456.17	91
MW-39-050	Middle Zone	456.33	455.88	455.76	455.99	91
MW-39-060	Middle Zone	456.13	455.66	455.53	455.77	91
MW-39-070	Middle Zone	455.65	455.22	455.09	455.32	91
MW-39-080	Deep Zone	455.86	455.42	455.29	455.52	91
MW-39-100	Deep Zone	456.16	455.74	455.64	455.84	91
MW-42-030	Shallow Zone	456.51	456.04	455.89	456.15	91
MW-42-065	Middle Zone	456.73	456.25	456.11	456.36	91
MW-43-025	Shallow Zone	457.18	456.55	456.45	456.73	91
MW-43-090	Deep Zone	457.51	456.87	456.77	457.05	91
MW-44-070	Middle Zone	456.97	456.35	456.26	456.52	91
MW-44-115	Deep Zone	456.37	455.88	455.79	456.01	91
MW-44-125	Deep Zone	456.72	456.41	INC	INC	51
MW-45-095a	Deep Zone	456.33	455.32	455.19	455.61	91
MW-46-175	Deep Zone	456.59	456.20	456.12	456.30	91
MW-47-055	Shallow Zone	456.96	456.74	456.60	456.77	91
MW-47-115	Deep Zone	456.79	456.66	456.56	456.67	91
MW-49-135	Deep Zone	457.13	456.78	456.68	456.87	91

Table E-1
Average Monthly and Quarterly Groundwater Elevations, Second Quarter 2012
Second Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

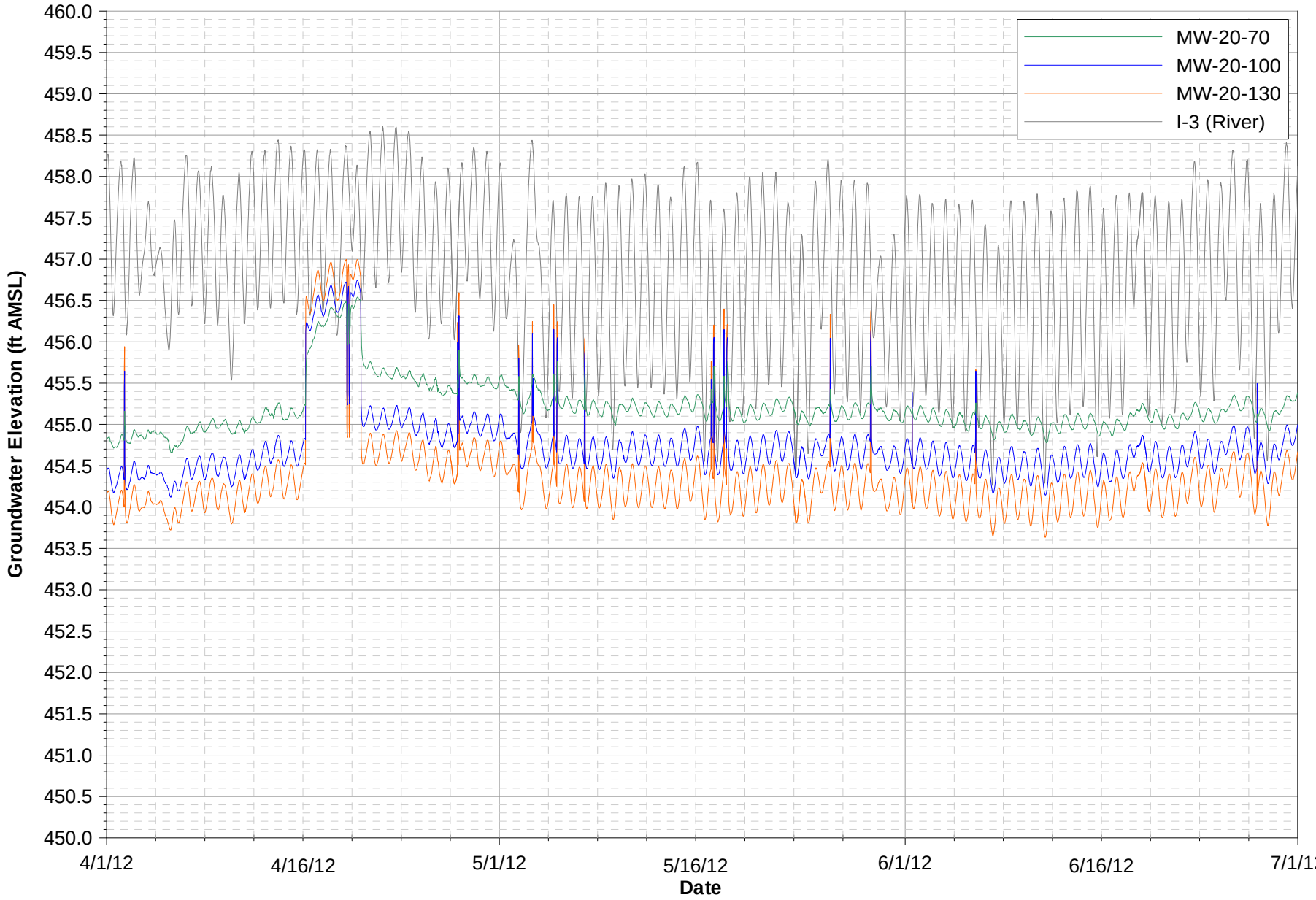
Well ID	Aquifer Zone	April 2012	May 2012	June 2012	Quarter Average	Days in Quarter Average
MW-50-095	Middle Zone	456.29	456.28	456.18	456.25	91
MW-51	Middle Zone	455.91	456.15	456.12	456.06	91
MW-54-085	Deep Zone	457.48	456.80	456.70	456.99	91
MW-54-140	Deep Zone	457.44	456.93	456.80	457.05	91
MW-54-195	Deep Zone	457.52	457.10	456.95	457.19	91
MW-55-045	Middle Zone	457.54	457.27	457.12	457.31	91
MW-55-120	Deep Zone	457.49	457.34	457.19	457.36	79
PT2D	Deep Zone	455.40	454.94	454.83	455.06	91
PT5D	Deep Zone	455.50	INC	455.37	INC	40
PT6D	Deep Zone	456.01	455.54	455.42	455.65	91
RRB	River Station	457.72	456.99	456.93	457.21	91

NOTES:

Averages reported in ft AMSL (feet above mean sea level).

Quarterly Average = average of daily averages over reporting period.

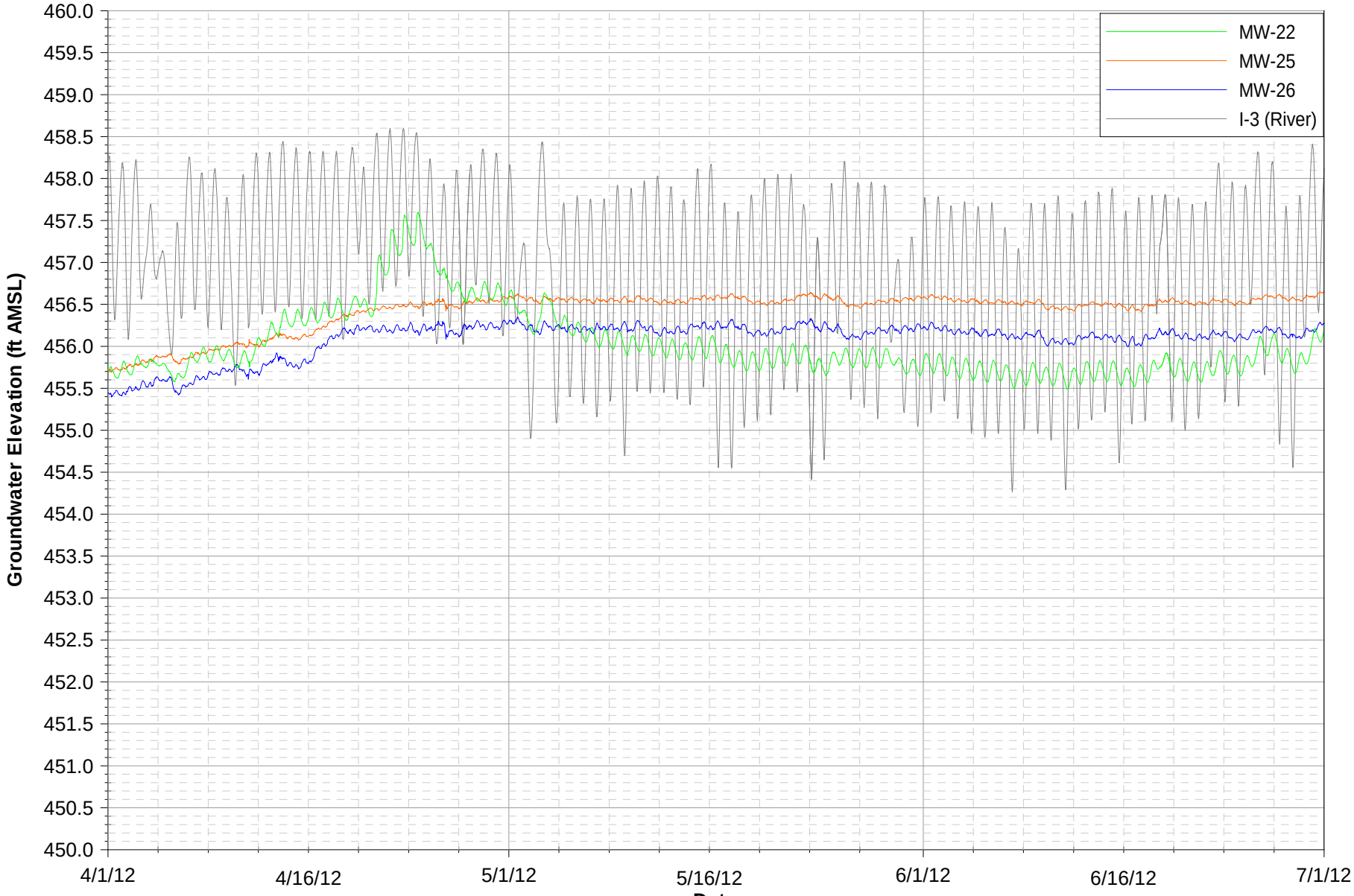
INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction.



Notes:
Data subject to review.

FIGURE E-1A
MW-20 CLUSTER HYDROGRAPHS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



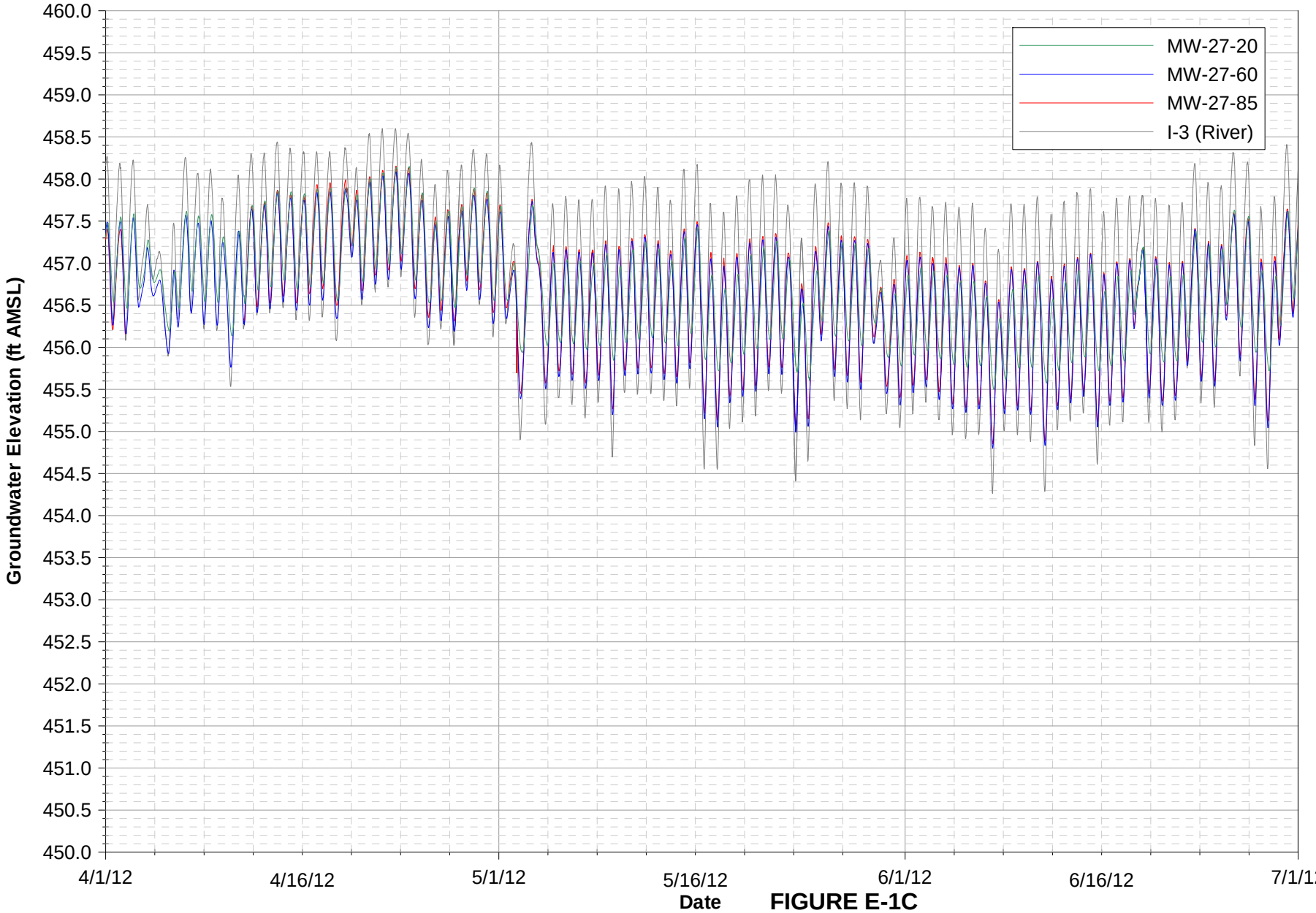
Notes:
Data subject to review..

FIGURE E-1B

MW-22, MW-25, AND MW-26 HYDROGRAPHS

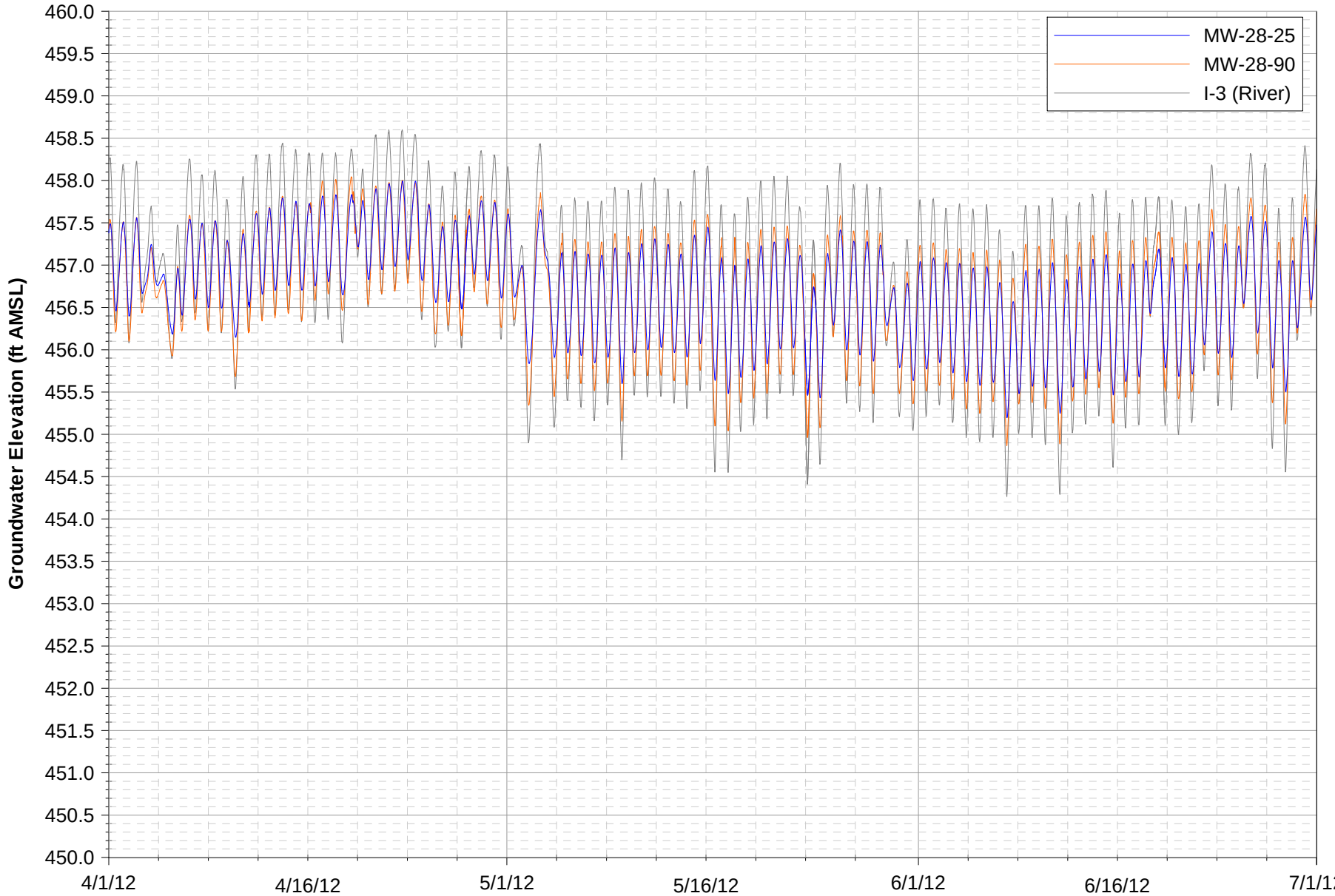
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:
Data for MW-27-085 unavailable from April 2, 2012 through April 11, 2012 due to equipment malfunction.

FIGURE E-1C
MW-27 CLUSTER HYDROGRAPHS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



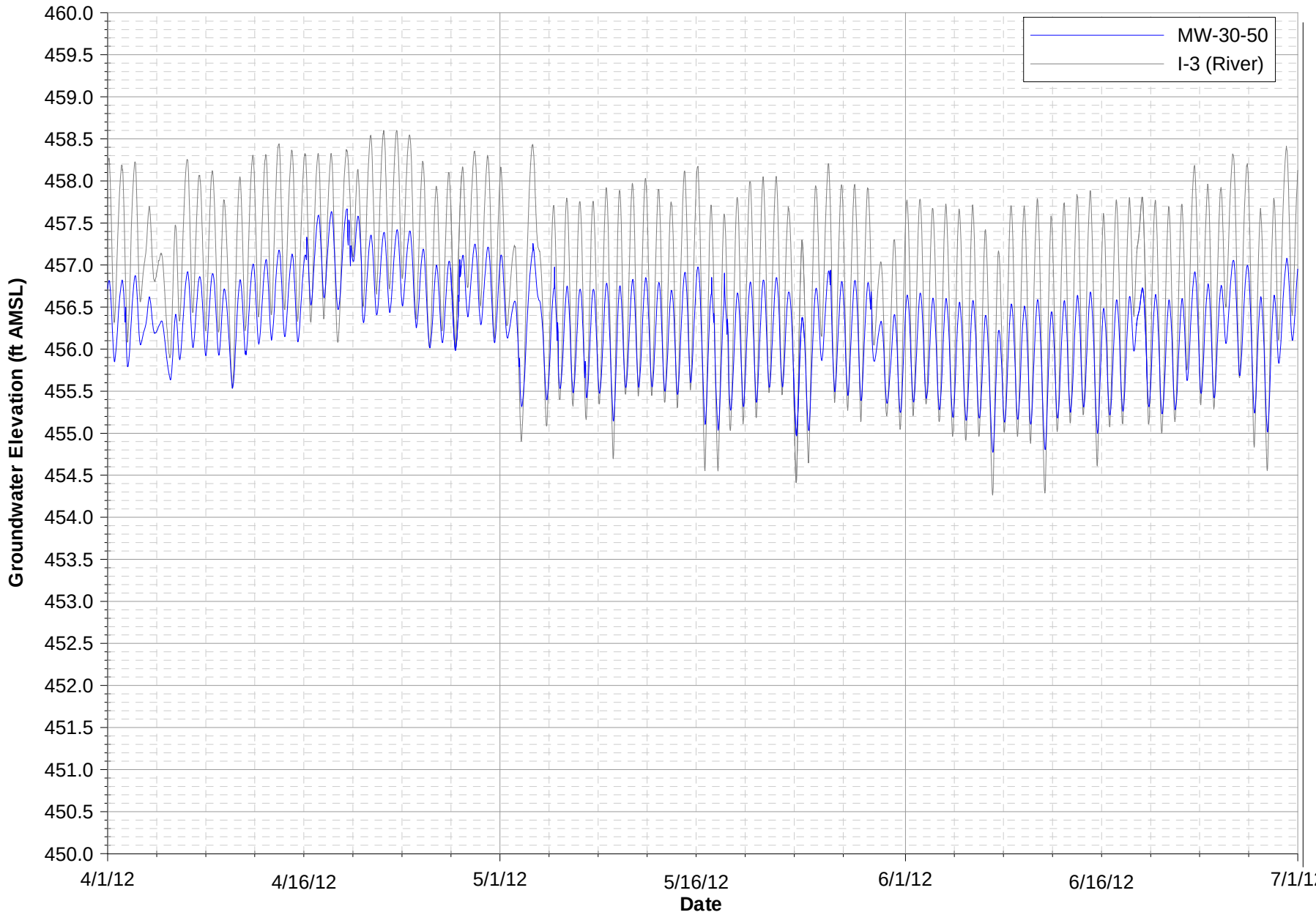
Notes:
Data subject to review.

FIGURE E-1D

MW-28 CLUSTER HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

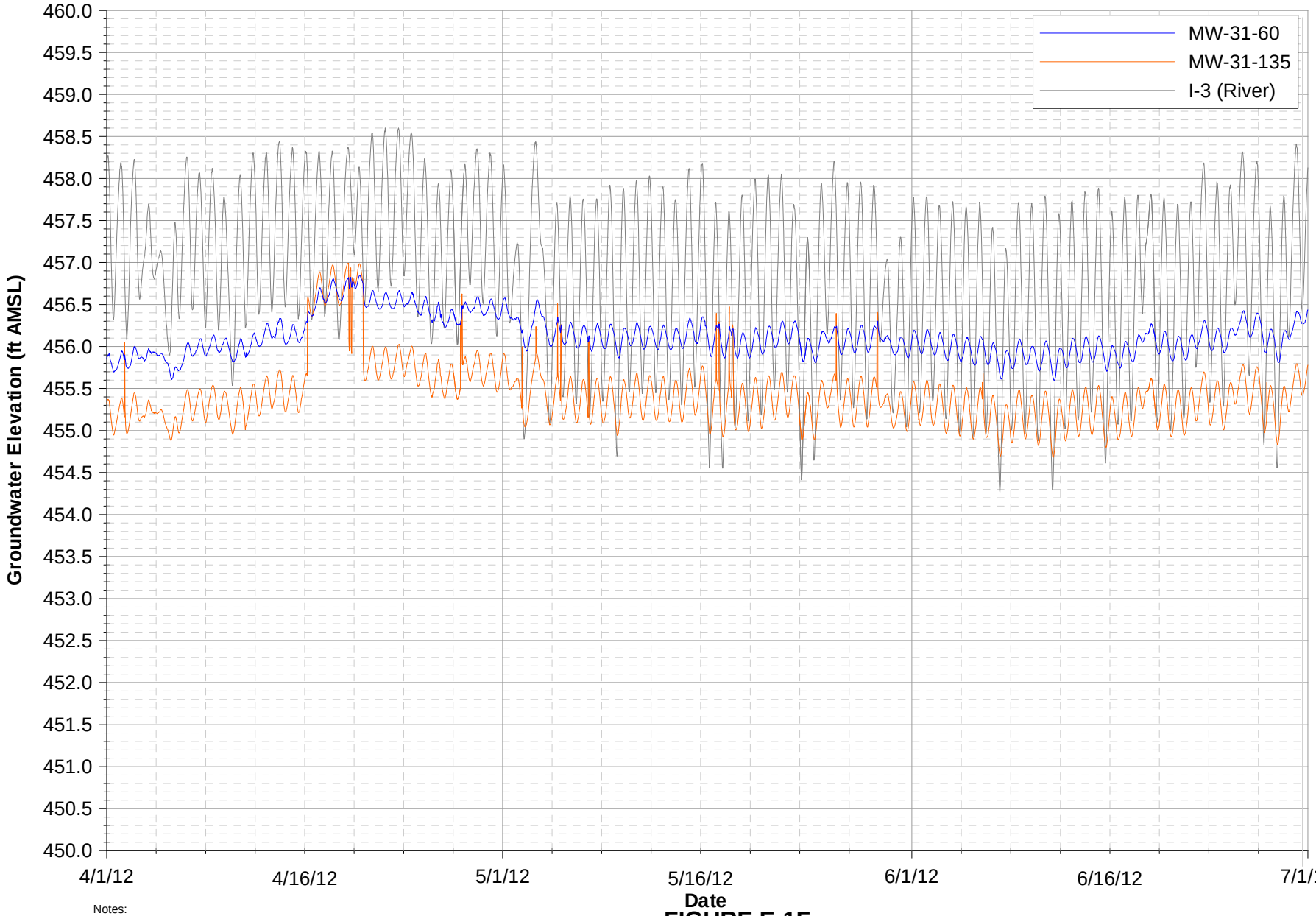
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1E
MW-30-50 HYDROGRAPH
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



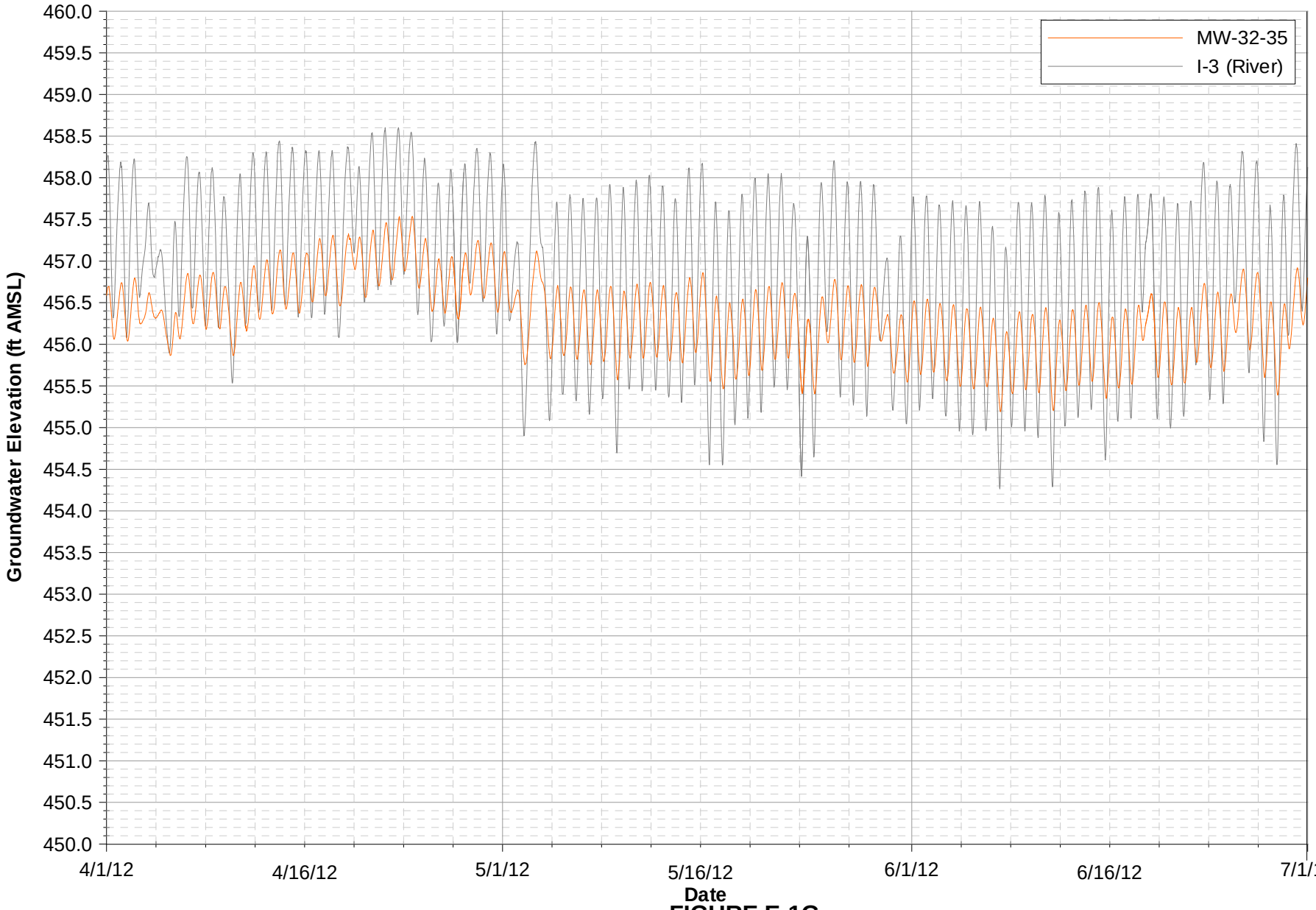
Notes:
Data subject to review.

FIGURE E-1F

MW-31 CLUSTER HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

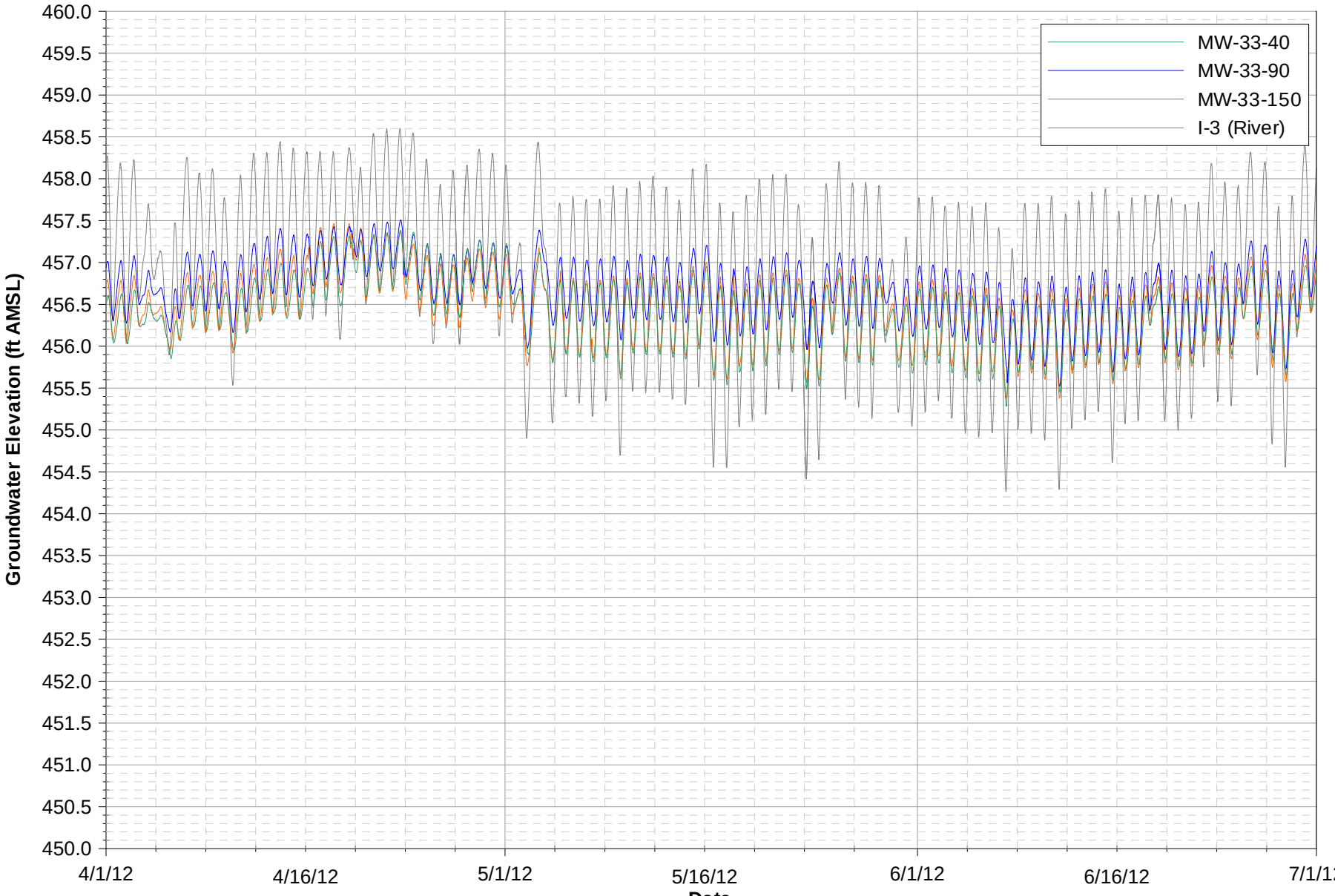
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1G
MW-32 HYDROGRAPH
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



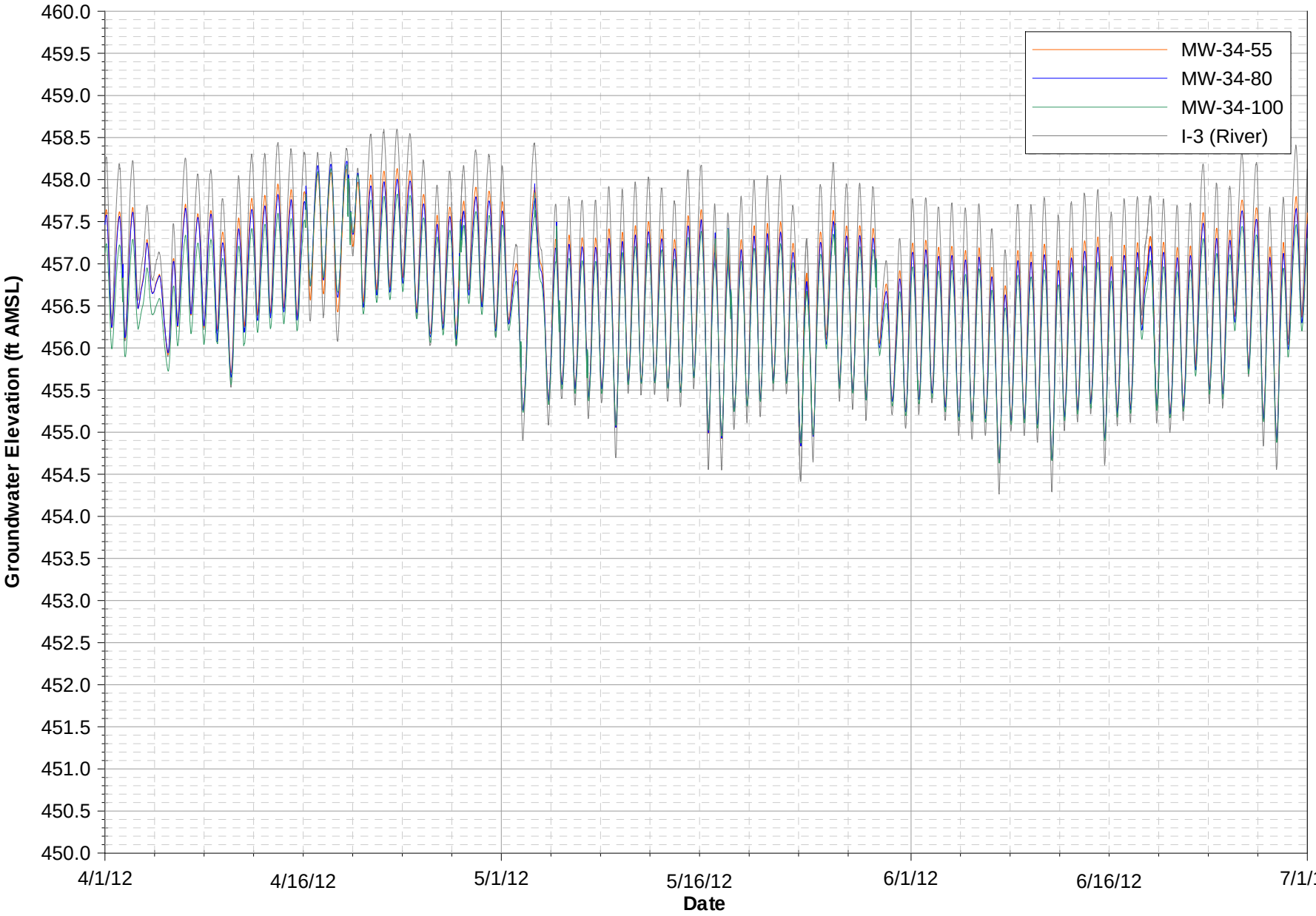
Notes:
Data subject to review.

FIGURE E-1H

MW-33 CLUSTER HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



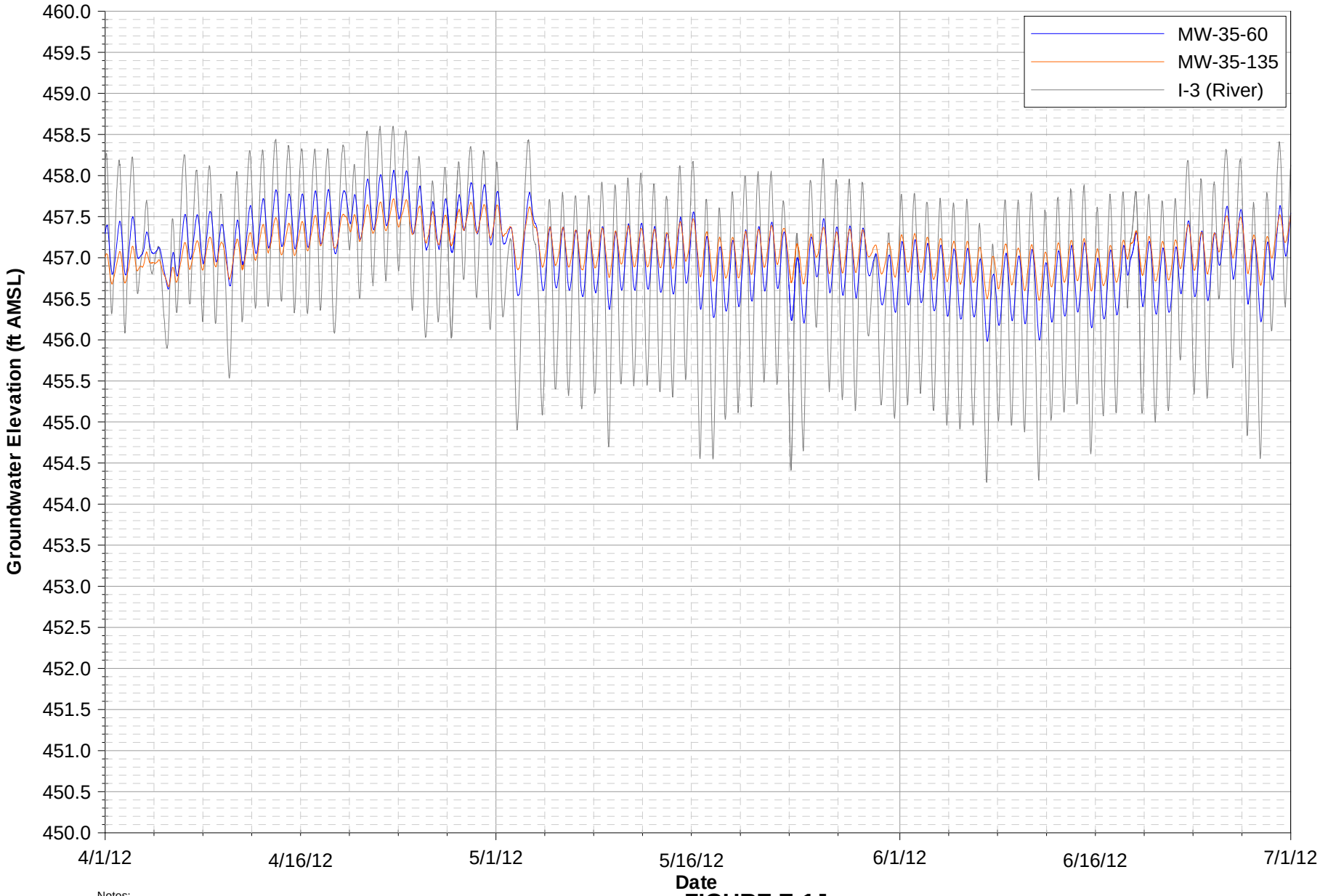
Notes:
Data subject to review.

FIGURE E-1I

MW-34 CLUSTER HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

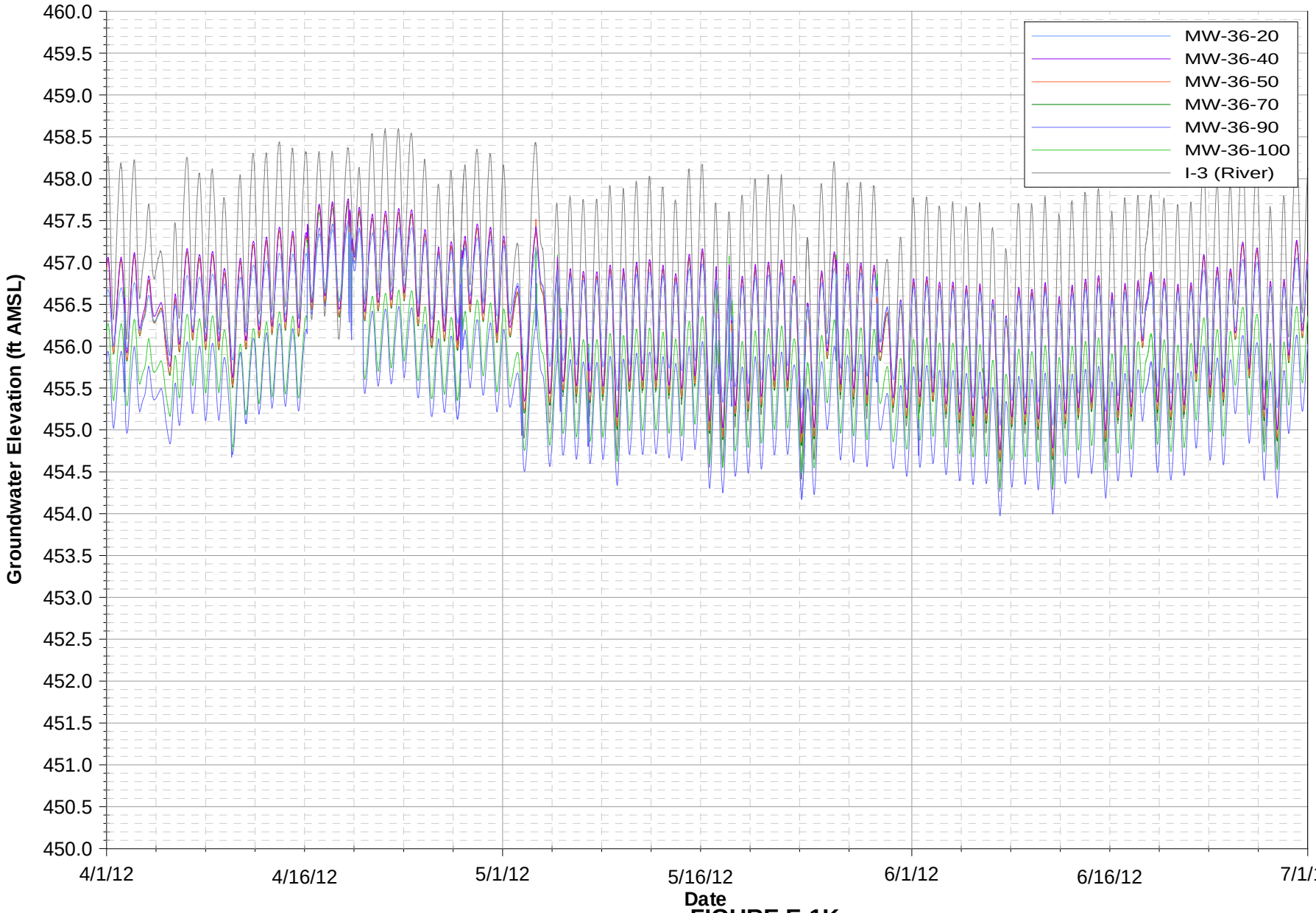
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1J
MW-35 CLUSTER HYDROGRAPHS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



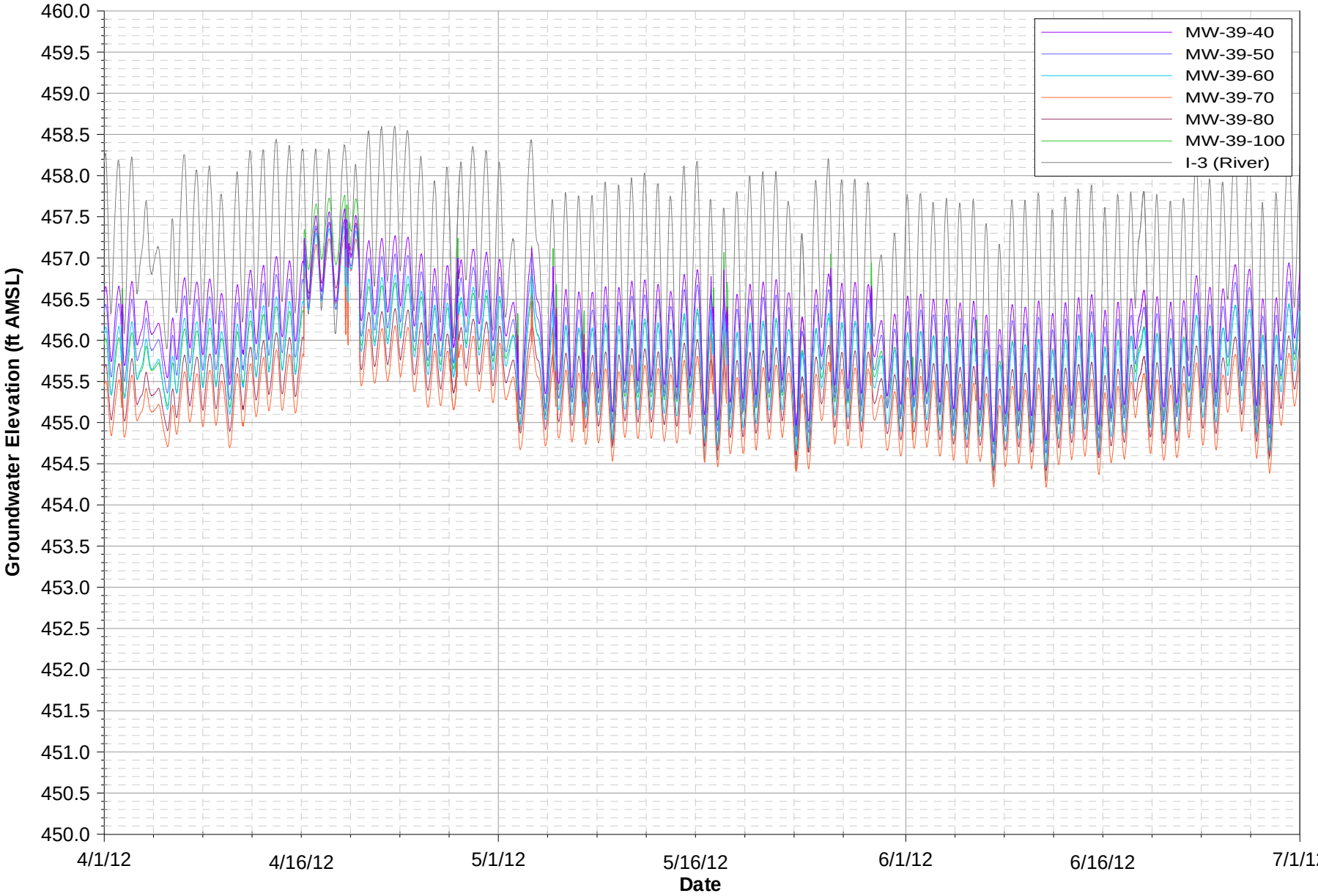
Notes:
Data subject to review.

FIGURE E-1K

MW-36 CLUSTER HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



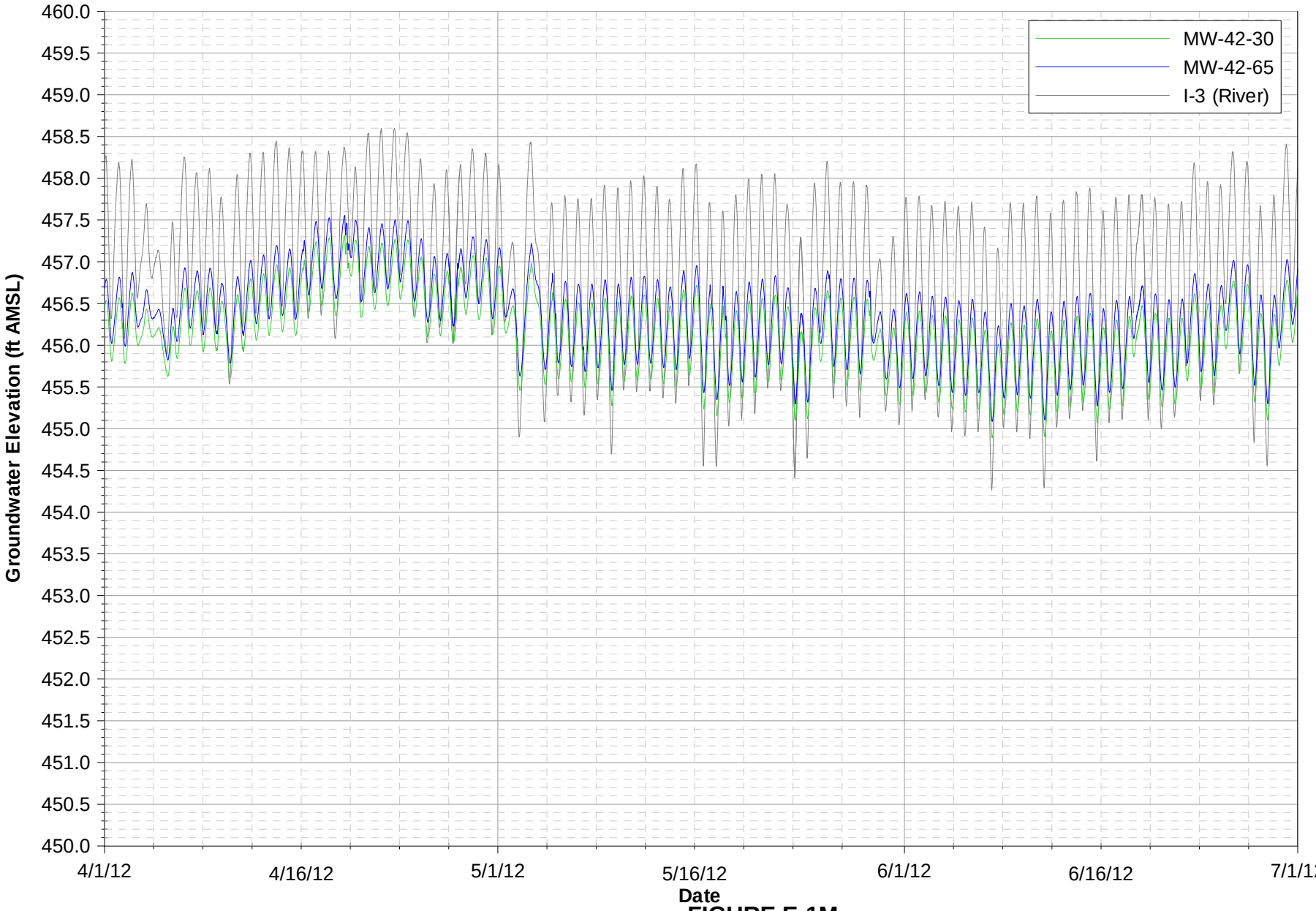
Notes:
Data subject to review.

FIGURE E-1L

MW-39 CLUSTER HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

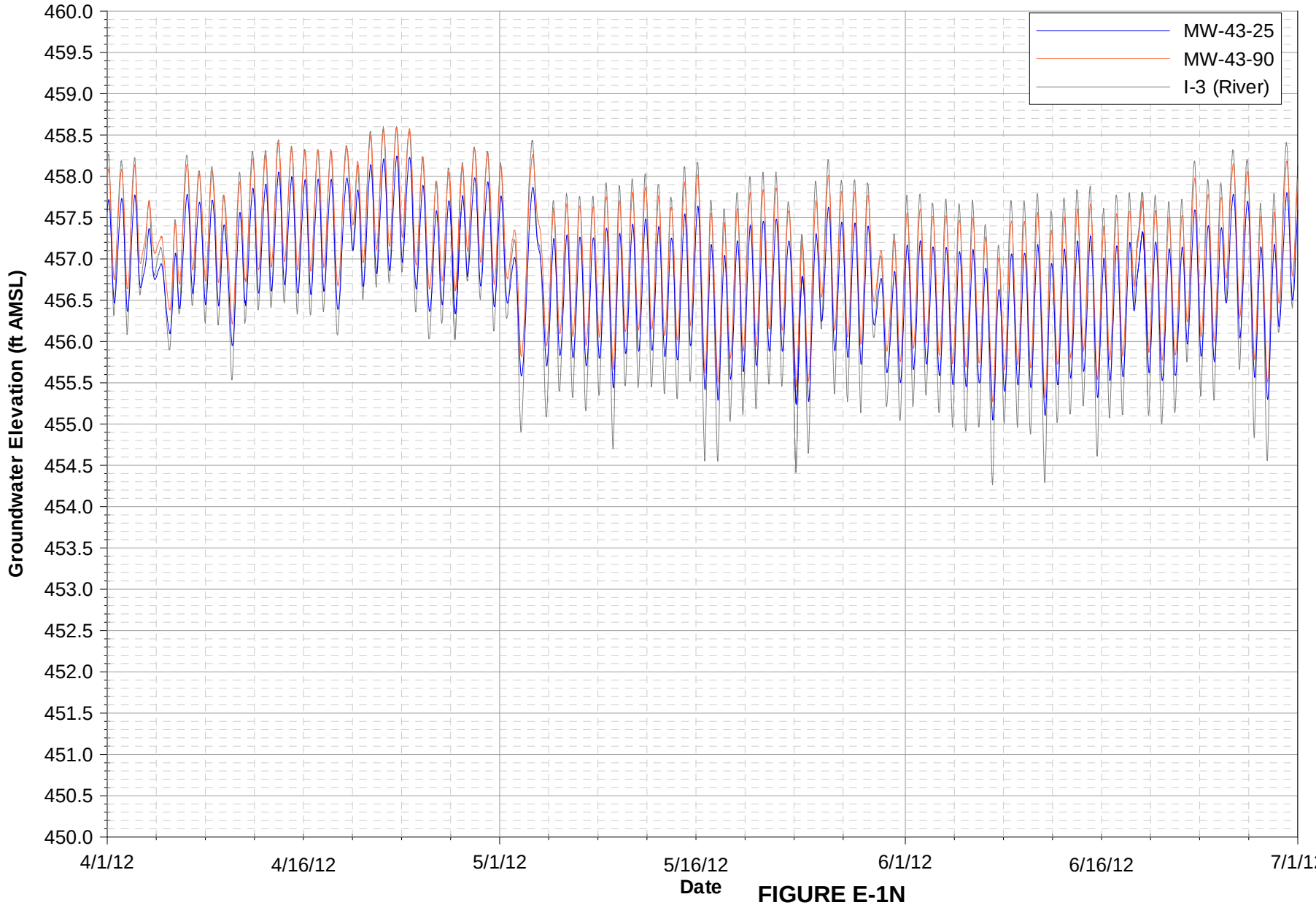
CH2MHILL



Notes:
Data subject to review.

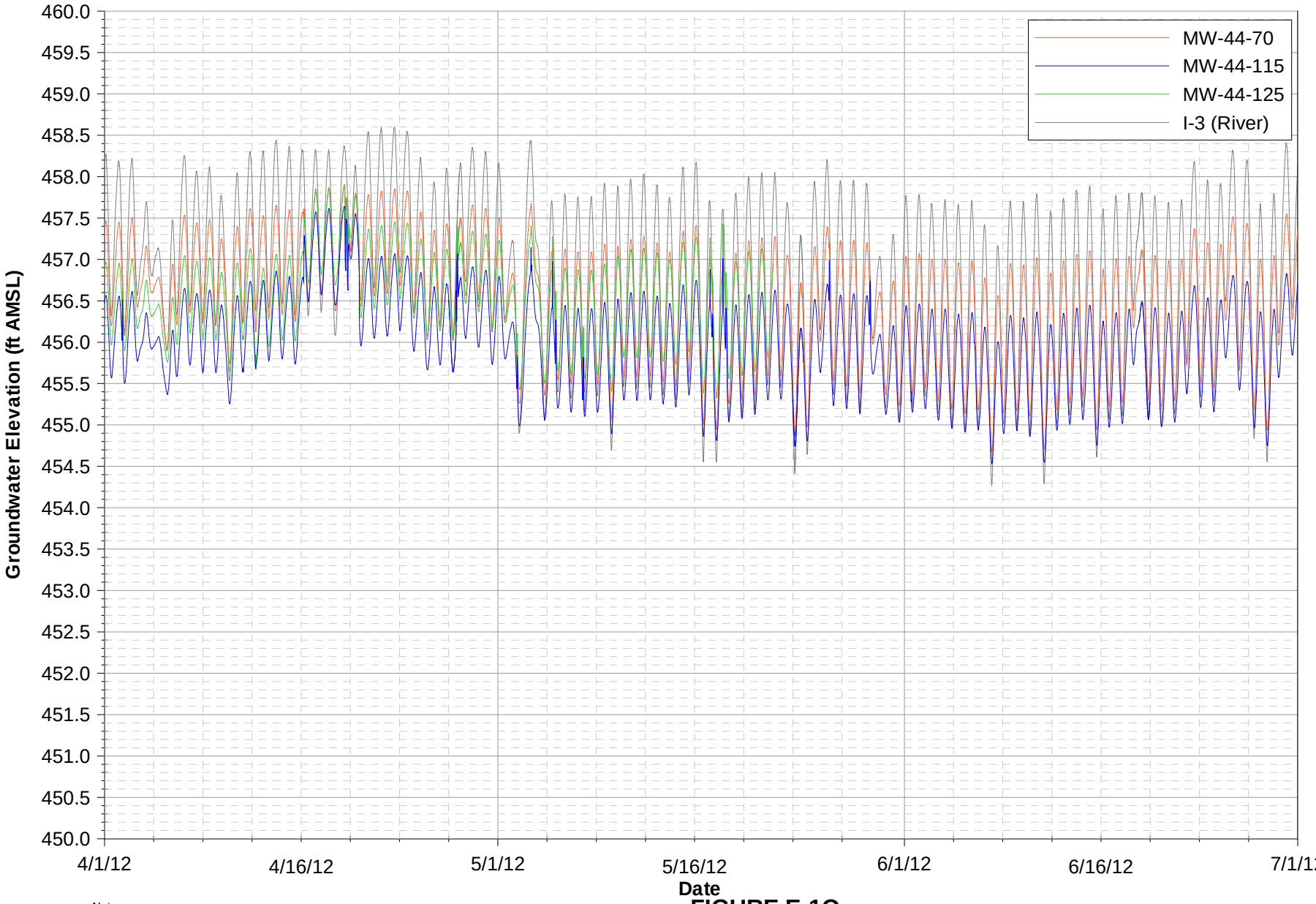
FIGURE E-1M
MW-42 CLUSTER HYDROGRAPHS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:
Data subject to review.

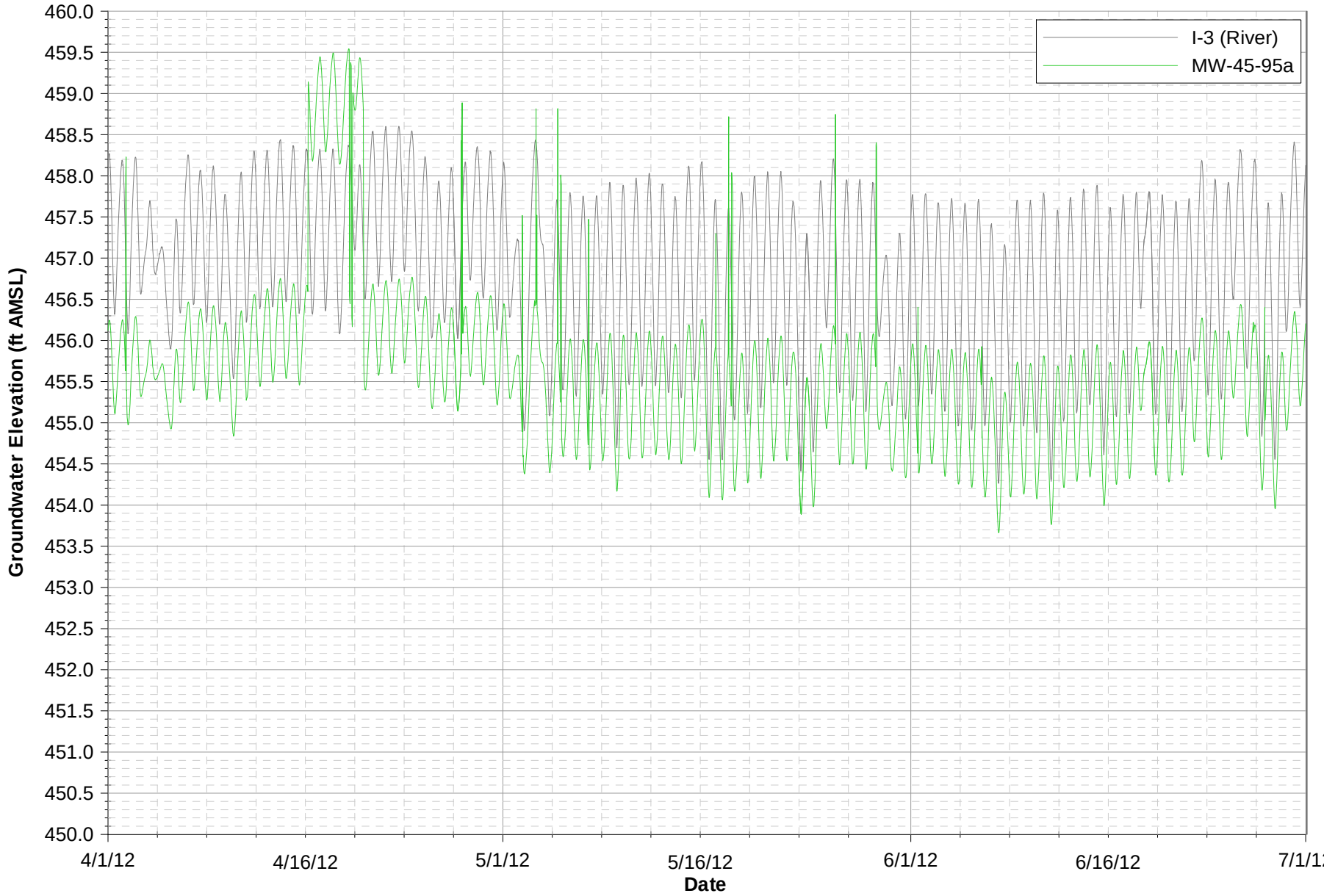
FIGURE E-1N
MW-43 CLUSTER HYDROGRAPHS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:
Data subject to review.
MW-44-125 data unavailable from May 22, 2012 through July 1, 2012 due to transducer malfunction.

FIGURE E-1O
MW-44 CLUSTER HYDROGRAPHS
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

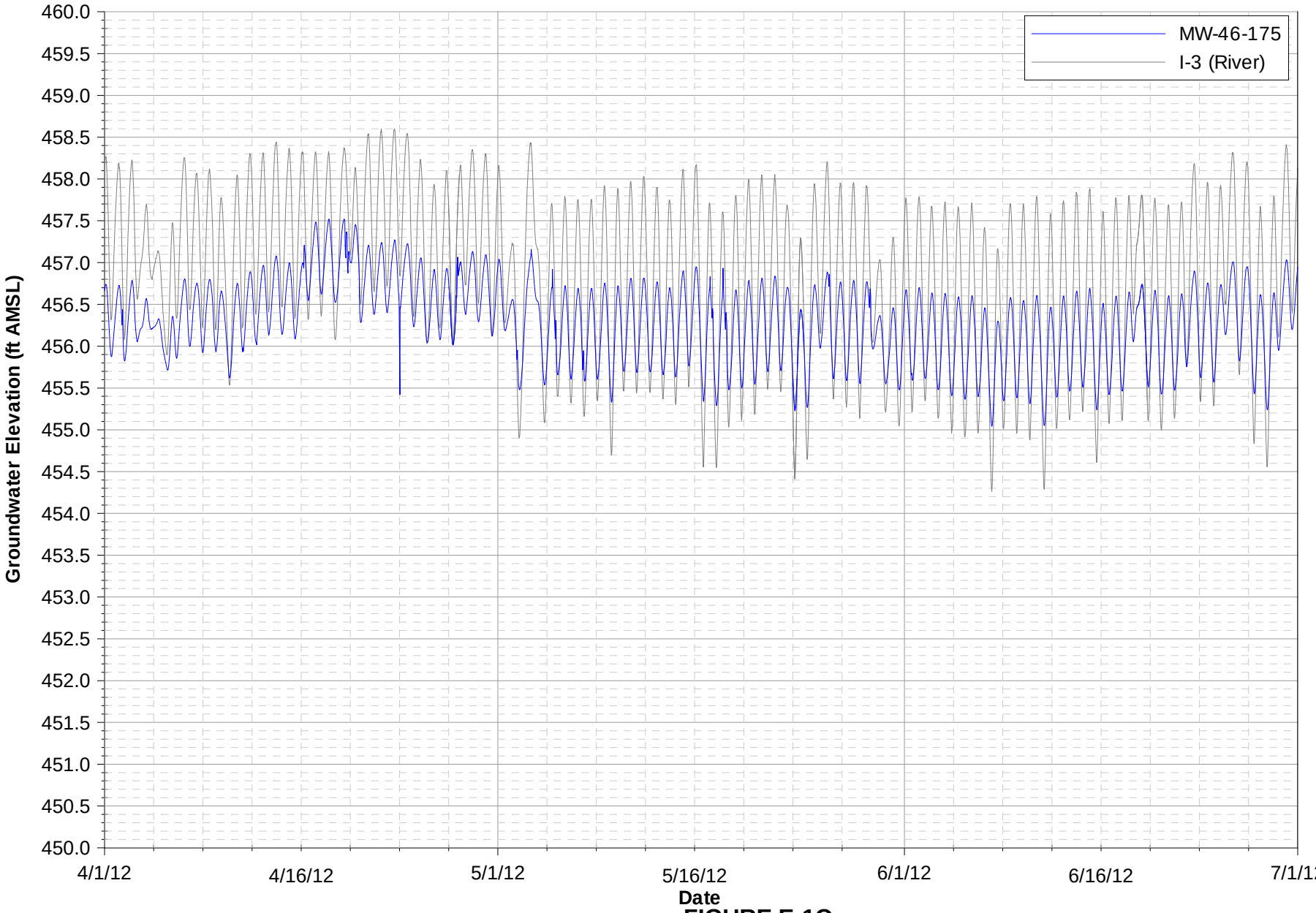
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1P
MW-45-95a HYDROGRAPH
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

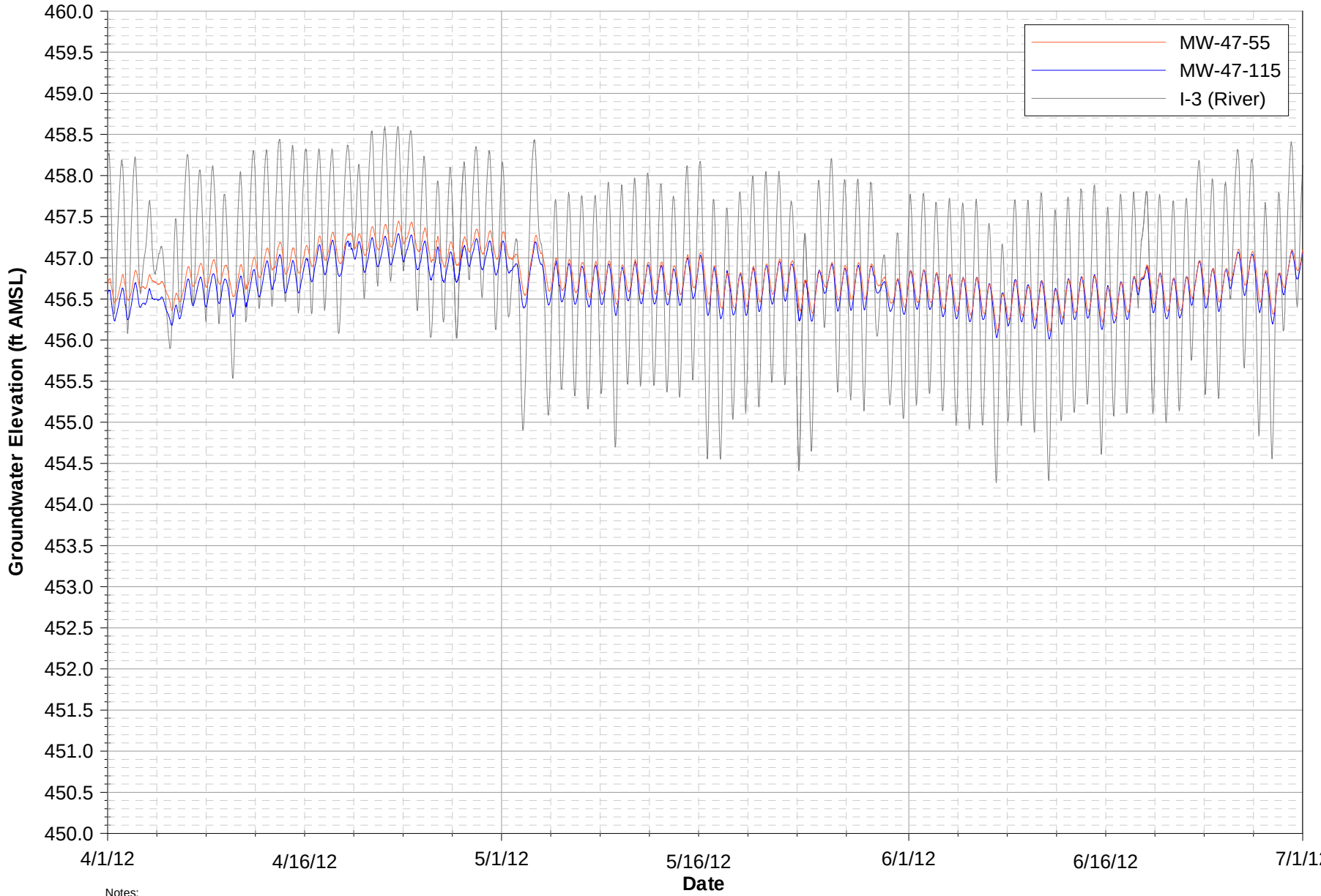
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1Q
MW-46 HYDROGRAPH
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:
Data subject to review.

FIGURE E-1R

MW-47 CLUSTER HYDROGRAPHS

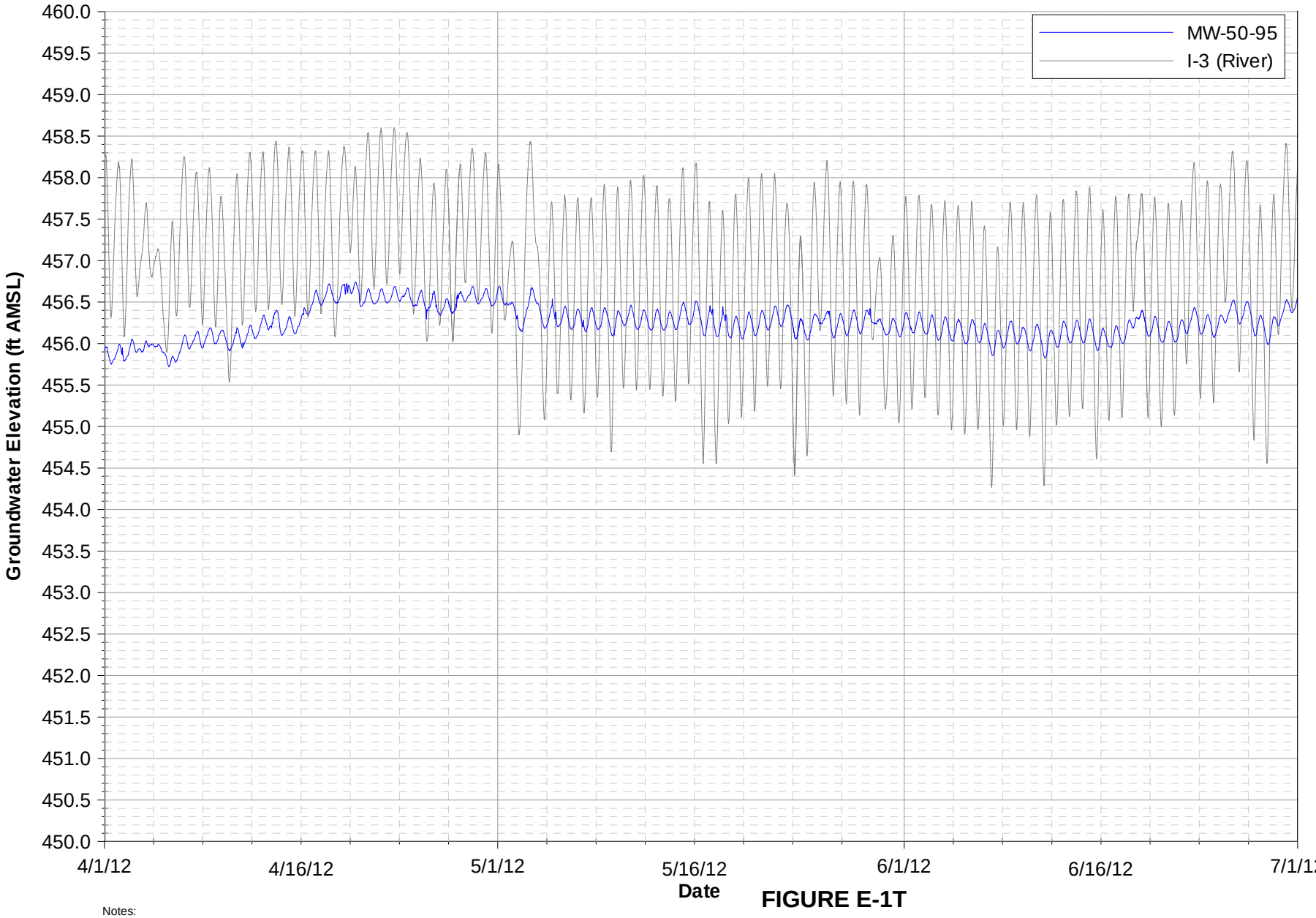
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:
Data subject to review.

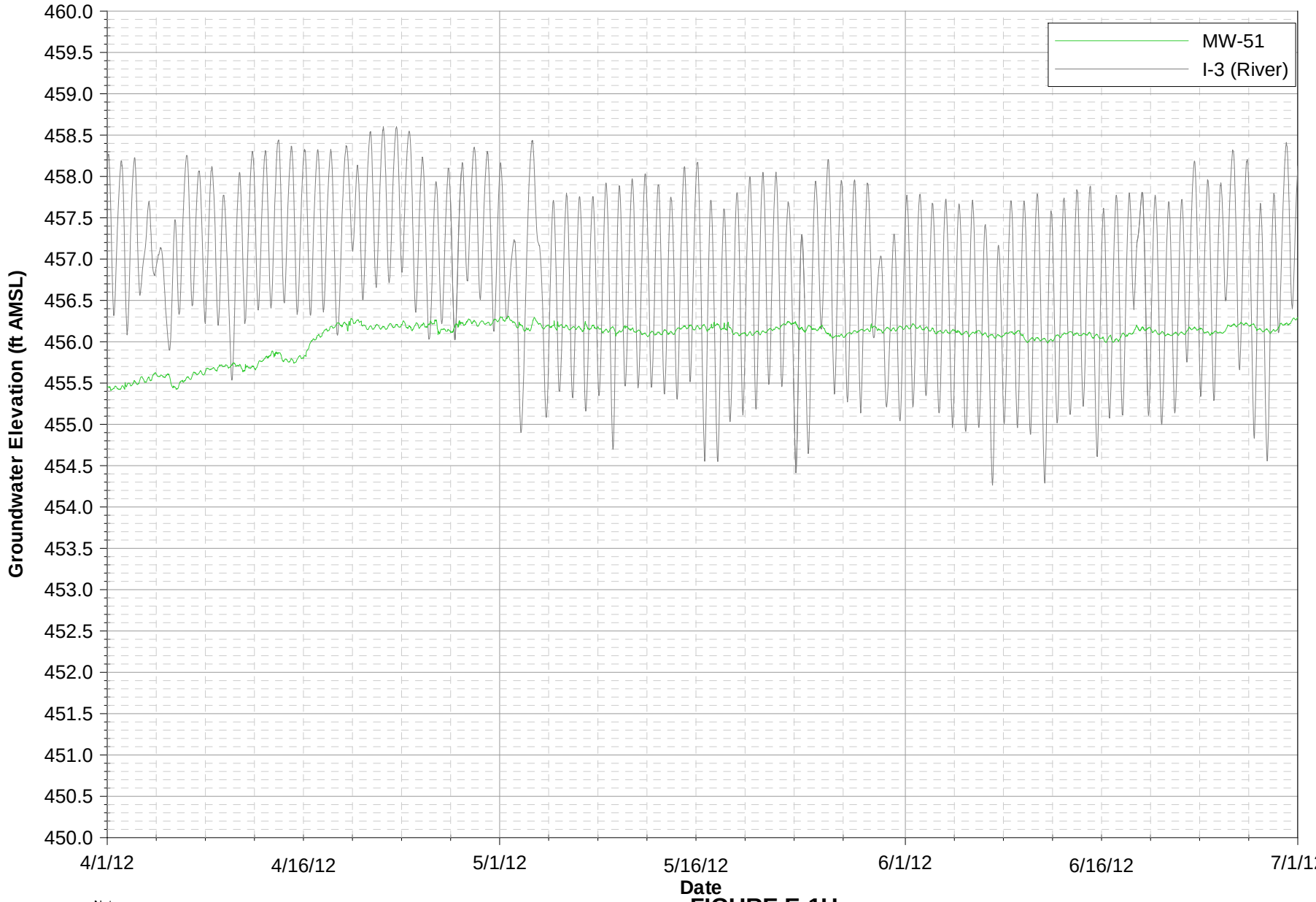
FIGURE E-1S
MW-49 HYDROGRAPH
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:
Data subject to review.

FIGURE E-1T
MW-50 HYDROGRAPH
SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



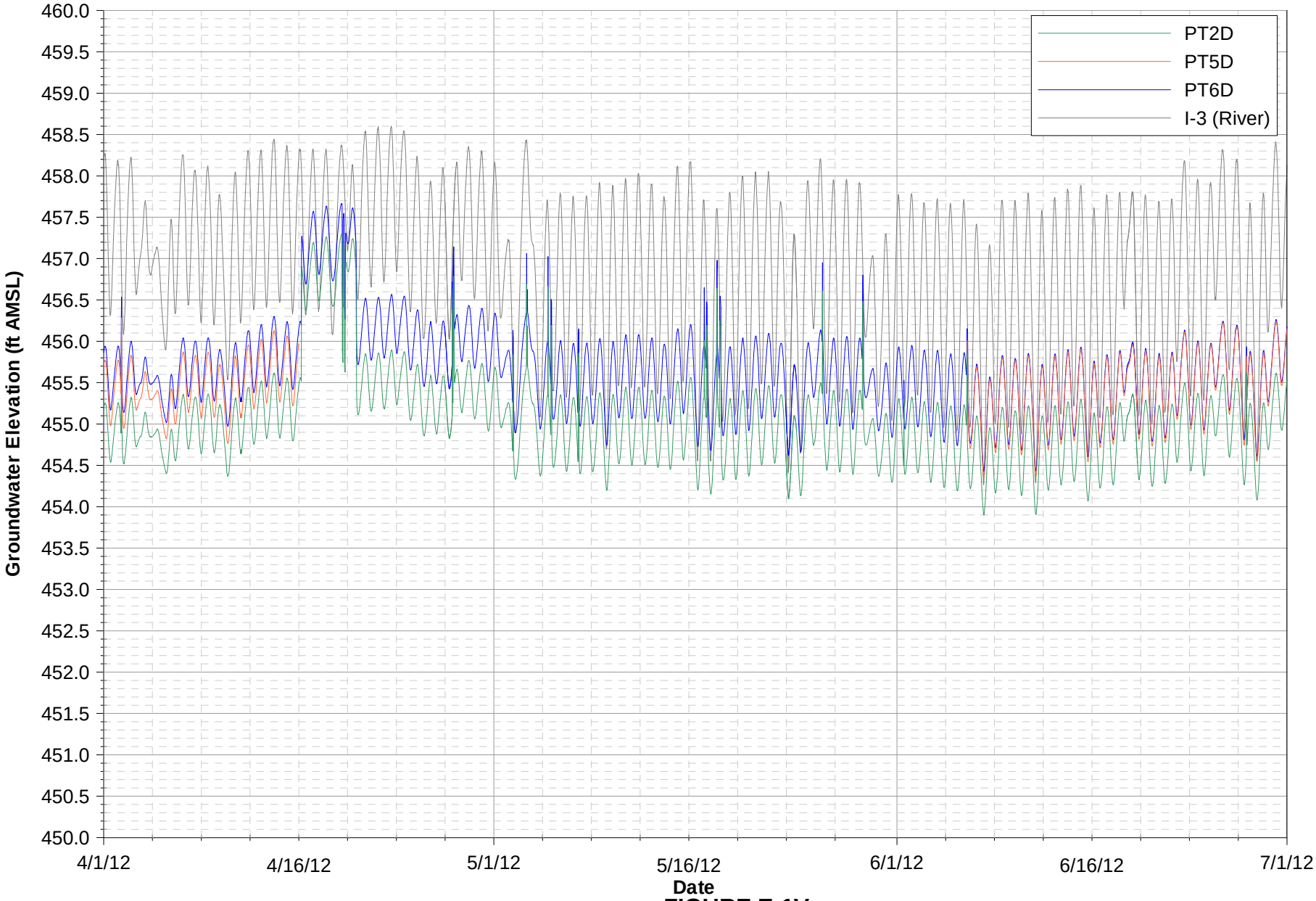
Notes:
Data subject to review.

FIGURE E-1U

MW-26 & MW-51 HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Note:
Data subject to review.
PT5D data unavailable from April 16, 2012 through June 6, 2012 due to transducer malfunction.

FIGURE E-1V

INSITU PILOT STUDY WELL HYDROGRAPHS

SECOND QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

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