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October 15, 2012

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Robert Perdue
Executive Officer
California Regional Water Quality Control Board
Colorado River Basin Region
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Palm Desert, CA 92260

Subject: Topock IM-3 Third Quarter 2012 Monitoring Report

PG&E Topock Compressor Station, Needles, California Interim Measure No. 3 Groundwater Treatment System

(Document ID: PGE20121015A)

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Third Quarter 2012 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure No. 3 (IM-3) Groundwater Treatment System.

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

PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Regional Water Board to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board. Quarterly monitoring reports are required to be submitted by the fifteenth day of the month following the end of the quarter.

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 507,969,897 gallons of water and removed approximately 5,507 pounds of total chromium through September 30, 2012.

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The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

If you have any questions regarding this report, please call me at (760) 326-5582.

Sincerely,

Curt Russell

Topock Site Manager

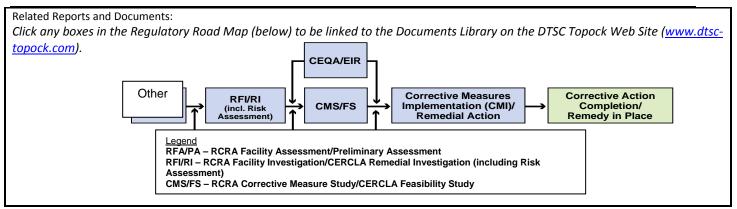
Enclosures:

Topock IM-3 Third Quarter 2012 Monitoring Report

cc: Jose Cortez, Colorado River Basin Regional Water Board

Thomas Vandenberg, Colorado River Basin Regional Water Board Aaron Yue, California Department of Toxic Substances Control

Topock Project Executive Abstract				
Document Title:	Date of Document: October 15, 2012			
Topock IM-3 Third Quarter 2012 Monitoring Report	Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other)			
Submitting Agency/Authored by: U.S. Department of the Interior and Regional Water Quality Control Board	PG&E			
Final Document? X Yes No	Document ID Number: PGE20121015A			
Priority Status: HIGH MED LOW Is this time critical? Yes No Type of Document: Draft Report Letter Memo Other / Explain:	Action Required: Information Only Review & Comment Return to: By Date: Other / Explain:			
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) Interim Measures Other / Explain:	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?	Other Justification/s: Permit Other / Explain:			
Submittal of this report is a compliance requirement of the ARARs for waste discharge as documented in Attachment A to the Letter Agreement issued July 26, 2011.				
Brief Summary of attached document:				
This report covers the Interim Measures No. 3 (IM-3) groundwa 2012 period. The groundwater monitoring results for wells OW-CW-3M/D, and CW-4M/D will be submitted under separate cov Written by: PG&E				
Recommendations:				
This report is for your information only. How is this information related to the Final Remedy or Regulatory Req	uirements?			
The Topock IM-3 Third Quarter 2012 Monitoring Report is relating groundwater treatment system as authorized by the U.S. Depart and Appropriate Requirements (ARARs) as documented in Attac Colorado River Basin Regional Water Quality Control Board (Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Regional Value of Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI to the Concurrence issued August 18, 2011 from DOI t	ed to the Interim Measure. PG&E is currently operating the IM-3 tment of the Interior (DOI) Waste Discharge Applicable or Relevant chment A to the Letter Agreement issued July 26, 2011 from the gional Water Board) to DOI, and the subsequent Letter of			
Other requirements of this information? None.				



Version 9

Third Quarter 2012 Monitoring Report

Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20121015A

PG&E Topock Compressor Station Needles, California

Prepared for

Colorado River Basin Regional Water Quality Control Board and United States Department of the Interior

on behalf of

Pacific Gas and Electric Company

October 15, 2012

155 Grand Avenue, Suite 800 Oakland, CA 94612

Third Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

PG&E Topock Compressor Station Needles, California

Prepared for

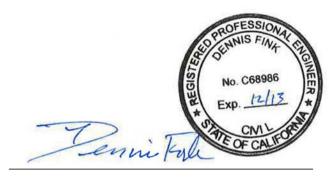
United States Department of the Interior and Colorado River Basin Regional Water Quality Control Board

on behalf of

Pacific Gas and Electric Company

October 15, 2012

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



Dennis Fink, P.E. Project Engineer

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Appendix

A Third Quarter 2012 Laboratory Analytical Reports

Acronyms and Abbreviations

ARARs Applicable or Relevant and Appropriate Requirements

DOI United States Department of the Interior

gpm gallons per minute

IM Interim Measure

IW injection well

MRP Monitoring and Reporting Program

PG&E Pacific Gas and Electric Company

PST Pacific Standard Time

Regional Water Board Colorado River Basin Regional Water Quality Control Board

RO reverse osmosis

Truesdail Laboratories, Inc.

WDR Waste Discharge Requirements

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The IM consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain, treatment of extracted groundwater, and treated groundwater injection into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. The groundwater extraction, treatment, and injection systems collectively are referred to as Interim Measure No. 3 (IM-3). Figure 1 provides a map of the project area. All figures are located at the end of this report.

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

PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Regional Water Board to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board. Quarterly monitoring reports are required to be submitted by the fifteenth day of the month following the end of the quarter.

This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the Third Quarter 2012. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

2.0 Sampling Station Locations

Table 1 lists the locations of sampling stations. (All tables are located at the end of this report.) Sampling station locations are shown on the process and instrumentation diagrams (Figures TP-PR-10-10-04, PR-10-03, PR-10-04 and TP-PR-10-10-06) provided at the end of this report.

3.0 Description of Activities

The treatment system was initially operated between July 25 and July 28, 2005 for the Waste Discharge Requirement (WDR)-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order No. R7-2004-0103. Full-time operation of the treatment system commenced in August 2005. Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 507,969,897 gallons of water and removed approximately 5,507 pounds of total chromium through September 30, 2012.

Influent to the treatment facility, as listed in Attachment A, Waste Discharge ARARs, to the Letter Agreement issued July 26, 2011, includes:

- Groundwater from extraction wells TW-2S, TW-2D, TW-3D, and PE-1.
- Purged groundwater and water generated from rinsing field equipment during monitoring events.
- Groundwater generated during well installation, well development, and aquifer testing.

During the Third Quarter 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during Third Quarter 2012. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 99.0 percent during July 2012
- 85.7 percent during August 2012
- 98.2 percent during September 2012

Operation of the groundwater treatment system results in the following three out-flow components:

- Treated effluent: Treated water that is discharged to the injection well(s).
- **Reverse osmosis (RO) concentrate (brine)**: Treatment byproduct that is transported and disposed of offsite at a permitted facility.
- **Sludge:** Treatment byproduct that is transported offsite for disposal at a permitted facility. Disposal occurs each time a sludge waste storage bin reaches capacity or within 90 days of the start date for accumulation in the storage container.

Activities during the Third Quarter 2012 are detailed in Section 4.

4.0 Groundwater Treatment System Flow Rates

The Third Quarter 2012 treatment system monthly average flow rates (influent, effluent, and reverse osmosis concentrate) are presented in Table 2.

The system influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-PR-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11). The RO concentrate flow rate was measured by a flow meter at the piping carrying water from RO concentrate tank T-701 to the truck load-out station (Figure PR-10-04).

The IM-3 facility treated approximately 16,729,412 gallons of extracted groundwater during the Third Quarter 2012. The IM-3 facility also treated approximately 4,300 gallons of water generated from the groundwater monitoring program and 25,200 gallons of injection well backwashing/re-development water.

Seven containers of solids (sludge) were transported offsite from the IM-3 facility during Third Quarter 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 5.7 percent downtime during Third Quarter 2012) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

4.1 July 2012

During July 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during July 2012. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.0 percent during the July 2012 reporting period.

The IM No. 3 facility treated approximately 5,955,686 gallons of extracted groundwater during July 2012. The IM-3 facility treated 460 gallons of water generated from the groundwater monitoring program and 9,000 gallons of injection well backwashing water. Four containers of solids from the IM-3 facility were transported offsite during July 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.0 percent downtime during July 2012) are summarized below.

• **July 2, 2012 (planned):** The extraction well system was offline from 2:10 p.m. to 2:56 p.m. due to permanent alarm and leak detection system testing that shut down extraction wells. Extraction system downtime was 46 minutes.

- **July 5, 2012 (unplanned):** The extraction well system was offline from 9:40 p.m. to 10:06 p.m. due to a loss of power from Needles Power. Extraction system downtime was 26 minutes.
- **July 8, 2012 (unplanned):** The extraction well system was offline from 9:00 p.m. to 9:06 p.m. due to loss of power from Needles Power. Extraction system downtime was 6 minutes.
- **July 9, 2012 (unplanned):** The extraction well system was offline from 5:42 a.m. to 6:12 a.m. due to loss of power from Needles Power. Extraction system downtime was 30 minutes.
- July 11, 2012 (planned): The extraction well system was offline from 6:50 a.m. to 12:08 p.m. due to planned maintenance to clear a blockage between the 301 tanks. Extraction system downtime was 5 hours, 18 minutes.
- **July 14, 2012 (unplanned):** The extraction well system was offline from 4:00 p.m. to 4:04 p.m. and from 6:34 p.m. to 6:38 p.m. due to loss of power from Needles Power. Extraction system downtime was 8 minutes.
- **July 21, 2012 (unplanned):** The extraction well system was offline from 1:54 a.m. to 2:08 a.m. due to loss of power from Needles Power. Extraction system downtime was 14 minutes.

4.2 August 2012

During August 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during August 2012. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 85.7 percent during the August 2012 reporting period.

The IM No. 3 facility treated approximately 5,095,995 gallons of extracted groundwater during August 2012. The IM-3 facility treated 1,300 gallons of water generated from the groundwater monitoring program and 11,700 gallons of injection well backwashing/redevelopment water. No containers of solids from the IM-3 facility were transported offsite during August 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 14.3 percent downtime during August 2012) are summarized below.

- August 2, 2012 (planned): The extraction well system was offline from 10:54 a.m. to 10:56 a.m., 11:04 a.m. to 11:06 a.m., 11:08 a.m. to 11:10 a.m., and 11:16 a.m. to 11:18 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 8 minutes.
- August 9, 2012 (unplanned): The extraction well system was offline from 5:58 p.m. to 6:00 p.m. due to a loss of power from Needles Power. Extraction system downtime was 2 minutes.

- August 13-17, 2012 (planned): The extraction well system was offline from 4:26 a.m. on August 13th to 2:16 p.m. on August 16th, from 2:58 p.m. on August 16th to 6:46 a.m. on August 17th, and from 9:40 a.m. to 10:38 a.m. on August 17th for semiannual scheduled maintenance. Extraction system downtime was 4 days, 2 hours and 36 minutes.
- August 21, 2012 (unplanned): The extraction well system was offline from 6:56 p.m. to 7:02 p.m. due to a loss of power from Needles Power. Extraction system downtime was 6 minutes.
- August 23, 2012 (unplanned): The extraction well system was offline from 4:00 a.m. to 4:10 a.m. and 9:14 a.m. to 9:18 a.m. due to a loss of power from Needles Power. Extraction system downtime was 14 minutes.
- August 30, 2012 (unplanned): The extraction well system was offline from 4:06 p.m. to 4:20 p.m. and 4:36 p.m. to 11:48 p.m. due to a ferrous feed pump malfunction. Plant was in recirculation mode until pump was repaired and all parameters were within specifications. Extraction system downtime was 7 hours, 26 minutes.

4.3 September 2012

During September 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during September 2012. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 98.2 percent during the September 2012 reporting period.

The IM-3 facility treated approximately 5,678,133 gallons of extracted groundwater during September 2012. The IM-3 facility treated 2,540 gallons of water generated from the groundwater monitoring program and 4,500 gallons of injection well backwashing/redevelopment water. Three containers of solids from the IM-3 facility were transported offsite during September 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.8 percent downtime during September 2012) are summarized below.

- **September 4, 2012 (planned):** The extraction well system was offline from 12:46 p.m. to 12:48 p.m., from 1:06 p.m. to 1:08 p.m., from 1:16 p.m. to 1:18 p.m., and from 1:34 p.m. to 1:44 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 16 minutes.
- **September 4, 2012 (unplanned):** The extraction well system was offline from 4:42 p.m. to 5:02 p.m. due to a loss of power from Needles Power. Extraction system downtime was 20 minutes.
- **September 5, 2012 (unplanned):** The extraction well system was offline from 12:08 a.m. to 12:12 a.m. due to a loss of power from Needles Power. Extraction system downtime was 4 minutes.

- **September 5, 2012 (unplanned):** The extraction well system was offline from 7:54 a.m. to 9:48 a.m. for maintenance of electrical bucket for extraction well pump (PE-1) motor. Extraction system downtime was 1 hour and 54 minutes.
- September 5, 2012 (unplanned): The extraction well system was offline from 10:08 a.m. to 2:08 p.m., from 2:10 p.m. to 2:12 p.m., 2:14 p.m. to 2:18 p.m., from 2:20 p.m. to 2:22 p.m., from 2:28 p.m. to 2:34 p.m., from 2:40 p.m. to 3:00 p.m., from 3:06 p.m. to 3:14 p.m., from 3:16 p.m. to 3:26 p.m., from 3:28 p.m. to 3:32 p.m., from 3:34 p.m. to 4:00 p.m., from 4:46 p.m. to 4:50 p.m., from 5:08 p.m. to 5:12 p.m., and from 5:14 p.m. to 5:16 p.m. for maintenance of the variable frequency drive on the primary reverse osmosis pump (P-2501). Extraction system downtime was 5 hours and 32 minutes.
- **September 6, 2012 (unplanned):** The extraction well system was offline from 2:12 p.m. to 2:18 p.m. and from 2:42 p.m. to 2:46 p.m. due to a loss of power from Needles Power. Extraction system downtime was 10 minutes.
- **September 8, 2012 (unplanned):** The extraction well system was offline from 1:08 p.m. to 1:14 p.m. and 2:36 p.m. to 2:40 p.m. due to a loss of power from Needles Power. Extraction system downtime was 10 minutes.
- **September 11, 2012 (planned):** The extraction well system was offline from 3:54 a.m.to 4:16 a.m., from 7:04 a.m.to 7:06 a.m., and from 7:08 a.m.to 7:10 a.m. due to a planned loss of power from Needles Power. Extraction system downtime was 26 minutes.
- **September 12, 2012 (unplanned):** The extraction well system was offline from 12:14 p.m. to 12:56 p.m. for maintenance of the blower. Extraction system downtime was 42 minutes.
- September 14, 2012 (unplanned): The extraction well system was offline from 2:10 a.m.to 2:16 a.m. and 4:04 a.m.to 4:10 a.m. due to a loss of power from Needles Power. Extraction system downtime was 12 minutes.
- **September 21, 2012 (unplanned):** The extraction well system was offline from 11:14 a.m. to 1:08 p.m. and from 1:12 p.m. to 2:00 p.m. for replacement of the microfilter feed pump (P-500). Extraction system downtime was 2 hours and 42 minutes.
- **September 23, 2012 (unplanned):** The extraction well system was offline from 9:46 p.m. to 9:48 p.m. due to a loss of power from Needles Power. Extraction system downtime was 2 minutes.
- September 26, 2012 (unplanned): The extraction well system was offline from 2:24 a.m.to 2:26 a.m. and 2:28 a.m.to 2:30 a.m. because the incoming power to the plant from the City of Needles was too high, so plant power supply needed to be switched to generator power. Extraction system downtime was 4 minutes.
- September 23, 2012 (unplanned): The extraction well system was offline from 6:16 a.m.to 6:28 a.m. and 10:30 a.m.to 10:52 a.m. when Needles Power adjusted power feed to plant. Extraction system downtime was 34 minutes.

5.0 Sampling and Analytical Procedures

With the exception of pH, all samples were collected at the designated sampling locations and placed directly into containers provided by Truesdail Laboratories, Inc. (Truesdail). Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a sealed container chilled with ice and transported to Truesdail via courier under chain-of-custody documentation. The laboratories confirmed the samples were received in chilled condition upon arrival.

Truesdail is certified by the California Department of Health Services (Certification No. 1237) under the State of California's Environmental Laboratory Accreditation Program. California-certified laboratory analyses were performed in accordance with the latest edition of the *Guidelines Establishing Test Procedures for Analysis of Pollutants* (40 Code of Federal Regulations Part 136), promulgated by the U.S. Environmental Protection Agency.

During the Third Quarter 2012, analysis of pH was conducted by field method pursuant to the Regional Water Board letter dated October 16, 2007 (subject: Clarification of Monitoring and Reporting Program Requirements), authorizing pH measurements to be conducted in the field. The field method pH samples were collected at the designated sampling locations and field tested within 15 minutes of sampling.

As required by the MRP, the analytical method selected for total chromium has a method detection limit of 1 part per billion, and the analytical method selected for hexavalent chromium has a method detection limit of 0.2 part per billion.

Influent, effluent, RO concentrate, and sludge sampling frequency were in accordance with the MRP.

Groundwater quality is being monitored in observation and compliance wells according to Attachment A, Waste Discharge ARARs, to the Letter Agreement issued July 26, 2011, and the procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* submitted to the Regional Water Board on June 17, 2005. Quarterly groundwater monitoring analytical results for the injection area (wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D) are reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

6.0 Analytical Results

Laboratory reports for samples collected in the Third Quarter 2012 were prepared by certified analytical laboratories, and are presented in Appendix A.

Samples were collected in accordance with the ARARs sampling frequency requirements. See Table 3 for sample collection dates.

The influent sampling analytical results are presented in Table 4. The effluent sampling analytical results are presented in Table 5. The RO concentrate sampling analytical results are presented in Table 6. The sludge sampling analytical results are presented in Table 7.

Table 8 identifies the laboratory that performed each analysis and lists the following required information:

- Sample location
- Sample identification number
- Sampler name
- Sample date
- Sample time
- Laboratory performing analysis
- Analysis method
- Analysis date
- Laboratory technician

7.0 Conclusions

There were no exceedances of effluent limitations during the reporting period.

In addition, no incidents of non-compliance were identified during the reporting period. No events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified during the reporting period.

8.0 Certification

Certification Statement:

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

Signature:	behume
Name:	Curt Russell
Company: _	Pacific Gas and Electric Company
Title:	Topock Site Manager
Date:	October 15, 2012



TABLE 1
Sampling Station Descriptions
Third Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Sample Station	Sample ID ^a	Location
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-RP-10-10-04).
Sampling Station B: Groundwater Treatment System Effluent	SC-700B-WDR-###	Sample collected from tap on pipe downstream from T-700 (see Figure TP-RP-10-10-04).
Sampling Station D: Groundwater Treatment System Reverse Osmosis Concentrate	SC-701-WDR-###	Sample collected from tap on pipe into T-701 (see Figure PR-10-03 and PR-10-04).
Sampling Station E: Groundwater Treatment System Sludge	SC-SLUDGE-WDR-###	Sample collected from sludge accumulated in the phase separator used this quarter (see Figure TP-RP-10-10-06).

Note:

= Sequential sample identification number at each sample station.

^a The sample event number is included at the end of the sample ID (e.g., SC-100B-WDR-015).

TABLE 2
Flow Monitoring Results
Third Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	System Influent ^{a,b} (gpm)	System Effluent ^b (gpm)	Reverse Osmosis Concentrate ^b (gpm)
July 2012 Average Monthly Flowrate	133.4	133.4	3.1
August 2012 Average Monthly Flowrate	114.2	114.0	0.9
September 2012 Average Monthly Flowrate	131.4	130.9	1.4

Notes:

gpm: gallons per minute

^a Extraction wells TW-3D and PE-1 were operated during the Third Quarter 2012. Extraction wells TW-2D and TW-2S were not operated during the Third Quarter 2012.

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Third Quarter 2012 is approximately 1.2 percent.

TABLE 3
Sample Collection Dates
Third Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	Sample Collection Dates	Results
Influent	July 2, 2012	See Table 4
	August 7, 2012	
	September 4, 2012	
Effluent	July 2, 2012	See Table 5
	July 10, 2012	
	July 17, 2012	
	July 24, 2012	
	July 31, 2012	
	August 7, 2012	
	August 13, 2012	
	August 17, 2012	
	August 21, 2012	
	August 28, 2012	
	September 4, 2012	
	September 11, 2012	
	September 18, 2012	
	September 25, 2012	
Reverse Osmosis Concentrate	August 21, 2012	See Table 6
Sludge ^a	July 2, 2012	See Table 7

Notes:

^a Sludge samples analysis is required quarterly by composite.

TABLE 4 Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Influent Monitoring Results ^a Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency	,									Мо	onthly												
Analytes Units ^b	TDS mg/L	Turbidity NTU	Specific Conductance µmhos/cm	Field ^c pH pH units	Chromium µg/L	Hexavalent Chromium µg/L	Aluminium μg/L	Ammonia (as N) mg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Boron mg/L	Copper µg/L	Fluorid mg/L	le Lead μg/L	Manganese µg/L	Molybdenum μg/L	Nickel µg/L	Nitrate (as N) mg/L	Nitrite (as N) mg/L	Sulfate mg/L	Iron μg/L	Zinc µg/L
Sample ID Date	0.757	0.0140	0.116		0.200	1.20	2.00	0.0098	0.0840	0.0530	0.200	0.0017	0.240	0.155	0.0530	0.270	0.130	0.350	0.135	0.00054	2.85	0.900	0.300
SC-100B-WDR-368 7/2/2012	4530	ND (0.100)	7640	7.5	748	797	ND (50.0)	ND (0.500)	ND (2.00)	3.30	26.3	1.07 I	ND (5.00)	2.48	ND (1.00)	4.30	23.3	ND (2.00)	2.99	ND (0.0050) 522 h	ND (20.0)	ND (10.0)
RL	250	0.100	2.00		1.00	10.0	50.0	0.500	2.00	1.00	5.00	0.200	5.00	0.500	1.00	0.500	2.00	2.00	1.00	0.0050	12.5	20.0	10.0
SC-100B-WDR-373 8/7/2012	4660	0.198	7650	7.4	773	727	ND (10.0)	ND (0.500)	ND (2.00)	3.10	26.8	0.939	ND (5.00)	2.59	ND (1.00)	3.70	20.2	ND (2.00)	3.13	ND (0.0050) 526 h	ND (20.0)	ND (10.0)
RL	250	0.100	2.00		1.00	10.0	10.0	0.500	2.00	0.500	5.00	0.200	5.00	0.500	1.00	0.500	5.00	2.00	1.00	0.0050	25.0	20.0	10.0
SC-100B-WDR-377 9/4/2012	4360	0.153	7600	7.3	773	764	ND (10.0)	ND (0.500)	ND (2.00)	3.40	25.6	0.989	ND (5.00)	2.51	ND (1.00)	6.20	20.9	7.20	3.13	ND (0.0050)) 522 ľ	ND (20.0)	ND (10.0)
RL	250	0.100	2.00		5.00	10.0	10.0	0.500	2.00	0.500	5.00	0.200	5.00	0.500	1.00	0.500	5.00	2.00	1.00	0.0050	25.0	20.0	10.0

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program

MDL = method detection limit mg/L = milligrams per liter

N = nitrogen

ND = parameter not detected at the listed value

NTU = nephelometric turbidity units

RL = project reporting limit

μg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

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^a Sampling Location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

b Units reported in this table are those units required in the ARARs.

c Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

TABLE 5
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Effluent Monitoring Results ^a
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent Limits ^b	Ave. Monthly	NA	NA		.5-8.4 6.5-8		8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Max Daily	NA	NA		.5-8.4 6.5-8	3.4 50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Samplin	ng Frequency			Weekly												Monthly	y							
	Analytes	TDS	Turbidity	Specific Conductanc	Field ^e e pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
	Units ^c	mg/L	NTU	µmhos/cm	pH units	μg/L	μg/L	μg/L	mg/L	μg/L	μg/L	μg/L	mg/L	μg/L	mg/L	μg/L	μg/L	μg/L	μg/L	mg/L	mg/L	mg/L	μg/L	μg/L
	MDLd	0.757	0.0140	0.116		0.200	0.0092	2.00	0.0098	0.0840	0.0530	0.200	0.0017	0.240	0.155	0.0530	0.0540	0.130	0.350	0.135	0.00054	2.85	0.900	0.300
Sample ID	Date																							
SC-700B-WDR-368	3 7/2/2012	4020	ND (0.100)	7210	7.10	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	2.70	ND (1.00)	12.1	1.03	ND (5.00)	2.10	ND (1.00)) 1.30	22.7	ND (2.00)	2.92	ND (0.0050)	496	ND (20.0	0) ND (10.0)
RL		250	0.100	2.00		1.00	0.200	50.0	0.500	2.00	1.00	5.00	0.200	5.00	0.500	1.00	0.500	2.00	2.00	1.00	0.0050	12.5	20.0	10.0
SC-700B-WDR-369	7/10/2012	4160	ND (0.100)	7290	7.10	ND (1.00)	ND (0.200)										1.60							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-370	7/17/2012	3990	ND (0.100)	7260	7.10	ND (1.00)	ND (0.200)										1.50							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-371	7/24/2012	4670	ND (0.100)	7720	7.10	ND (1.00)	0.230										2.00							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-372	2 7/31/2012	4110	ND (0.100)	7400	7.20	ND (1.00)	ND (0.200)										0.710							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-373	8 8/7/2012	4420	ND (0.100)	7160	7.10	ND (1.00)	ND (0.200)	ND (10.0)	ND (0.500)	ND (2.00)	ND (0.500)	10.6	0.929	ND (5.00)	2.15	ND (1.00)	0.660	18.3	ND (2.00)	2.96	ND (0.0050)	500	ND (20.0	0) ND (10.0)
RL		250	0.100	2.00		1.00	0.200	10.0	0.500	2.00	0.500	5.00	0.200	5.00	0.500	1.00	0.500	5.00	2.00	1.00	0.0050	25.0	20.0	10.0
SC-700B-WDR-374	a 8/13/2012	4280	ND (0.100)	7400	7.20	ND (1.00)	ND (0.200)										1.20							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-374I	b 8/17/2012	4650	0.105	7700	7.40	1.20	1.20										1.40							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-375	8/21/2012	4790	ND (0.100)	7410	7.50	ND (1.00)	0.270										2.20							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-376	8/28/2012	4160	ND (0.100)	7300	7.10	ND (1.00)	0.240										1.30							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-377	9/4/2012	4070	ND (0.100)	7250	7.10	ND (1.00)	ND (0.200)	ND (10.0)	ND (0.500)	ND (2.00)	ND (0.500)	9.50	0.948	ND (5.00)	2.06	ND (1.00)	0.800	19.7	2.30	2.98	ND (0.0050)	490	ND (20.0	0) ND (10.0)
RL		250	0.100	2.00		1.00	0.200	10.0	0.500	2.00	0.500	5.00	0.200	5.00	0.500	1.00	0.500	5.00	2.00	1.00	0.0050	25.0	20.0	10.0
SC-700B-WDR-378	3 9/11/2012	4120	ND (0.100)	7260	7.20	ND (1.00)	0.350										1.90							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-379	9/18/2012	4000	ND (0.100)	7070	7.40	ND (1.00)	0.240										1.40							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-380	9/25/2012	3950	ND (0.100)	7130	7.20	ND (1.00)	ND (0.200)										1.40							
RL		250	0.100	2.00		1.00	0.200										0.500							

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TABLE 5

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)

Effluent Monitoring Results a

Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program J = concentration or reporting limits estimated by laboratory or validation MDL = method detection limit mg/L = milligrams per liter

N = nitrogen

NA = not applicable

ND = parameter not detected at the listed value

NTU = nephelometric turbidity units

RL = project reporting limit

μg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

- ^a Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection wells (see attached P&ID TP-PR-10-10-04).
- b In addition to the listed effluent limits, the ARARs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health.
- ^c Units reported in this table are those units required in the ARARs.
- d MDL listed is the target MDL by analysis method; however, the MDL may change for each sample analysis due to the dilution required by the matrix to meet the method QC requirements. The target MDL for each method/analyte combination is calculated annually.
- e Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

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TABLE 6

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)

Reverse Osmosis Concentrate Monitoring Results ^a

Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Fre	equency											Quarter	·ly										
	nalytes	TDS	Specific Conductance	Field ^{c} pH	Chromium	Hexavalent Chromium		Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenun	n Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
\ \	Jnits ^b	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample ID Dat	MDL	0.757	0.116		0.00020	0.00025	0.00042	0.00026	0.00020	0.00028	0.00014	0.00054	0.00024	0.155	0.00026	0.00015	0.00012	0.00036	0.00071	0.00012	0.00026	0.00065	0.0016
SC-701-WDR-375 8/	21/2012	35100	43800	7.7	0.00430	0.00300	ND (0.0050)	0.000740	0.0856	ND (0.0010)	ND (0.0010)	ND (0.0100) ND (0.0050) 15.5	ND (0.001	0) 0.148	ND (0.0010)	0.00700	0.0270	ND (0.0050	0.00110	J ND (0.0100) ND (0.0100
RL		1250	2.00		0.0010	0.0020	0.0050	0.00050	0.0050	0.0010	0.0010	0.0100	0.0050	0.500	0.0010	0.0050	0.0010	0.0020	0.0100	0.0050	0.0010	0.0100	0.0100

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program

MDL = method detection limit

mg/L = milligrams per liter

ND = parameter not detected at the listed value

RL = project reporting limit

μg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

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^a Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

b Units reported in this table are those units required in the ARARs.

c Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

TABLE 7 Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Sludge Monitoring Results^a Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling F	requency										Qua	arterly									
Sample ID	Analytes Units ^b MDL Date	Chromium mg/kg 0.0210	Hexavalent Chromium mg/kg 0.310	Antimony mg/kg 0.0116	Arsenic mg/kg 0.0108	Barium mg/kg 0.0048	Beryllium mg/kg 0.00014	Cadmium mg/kg 0.00092	Cobalt mg/kg 0.0044	Copper mg/kg 0.0100	Fluoride mg/kg 0.0310	Lead mg/kg 0.0050	Molybdenum mg/kg 0.0018	Mercury mg/kg 0.00012	Nickel mg/kg 0.0058	Selenium mg/kg 0.0076	Silver mg/kg 0.0080	Thallium mg/kg 0.0082	Vanadium mg/kg 0.0050	Zinc mg/kg 0.0092	Bioassay % Survival at 750 mg/L ^c
SC-Sludge-WDR-368	7/2/2012	3410 9.51	24.2 J 8.29	50.7 2.00	ND (1.97) 1.97	55.0 1.97	ND (1.00) 1.00	7.93 1.97	3.34 1.97	ND (1.97) 1.97	23.1 4.11	6.12 1.97	5.52 1.97	0.123 0.100	9.21 1.97	ND (1.97) 1.97	ND (4.75) 4.75	ND (2.00) 2.00	39.4 1.97	56.5 2.00	100 100

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program mg/kg = milligrams per killogram mg/L = milligrams per liter MDL = method detection limit

ND = parameter not detected at the listed reporting limit

RL = project reporting limit

^a Sampling location for all sludge samples is the sludge collection bin (see attached P&ID TP-PR-10-10-06).

 $^{^{\}boldsymbol{b}}\,$ Units reported in this table are those units required in the ARARs.

^c Sludge sample is developed as a composite of samples collected from each sludge bin shipped offsite during previous quarter.

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-368	Ron Phelps	7/2/2012	1:05:00 PM	TLI	EPA 120.1	SC	7/3/2012	Gautam Savani
					TLI	EPA 200.7	AL	7/11/2012	Ethel Suico
					TLI	EPA 200.7	В	7/11/2012	Ethel Suico
					TLI	EPA 200.7	FE	7/11/2012	Ethel Suico
					TLI	EPA 200.7	ZN	7/11/2012	Ethel Suico
					TLI	EPA 200.8	AS	7/13/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BA	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CR	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CU	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MO	8/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	NI	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	РВ	8/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SB	8/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 218.6	CR6	7/3/2012	Maksin Gorbunov/Himani Vaishnav
					TLI	EPA 300.0	FL	7/3/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	7/3/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	7/3/2012	Giawad Ghenniwa
					FIELD	HACH	PH	7/2/2012	Ron Phelps
					TLI	SM2130B	TRB	7/3/2012	Gautam Savani
					TLI	SM2540C	TDS	7/3/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	7/9/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	7/3/2012	Jenny Tankunakorn
SC-100B	SC-100B-WDR-373	Ron Phelps	8/7/2012	10:00:00 AM	TLI	EPA 120.1	SC	8/10/2012	Gautam Savani
					TLI	EPA 200.7	AL	8/16/2012	Ethel Suico
					TLI	EPA 200.7	В	8/16/2012	Ethel Suico
					TLI	EPA 200.7	FE	8/16/2012	Ethel Suico
					TLI	EPA 200.7	FETD	8/16/2012	Ethel Suico
					TLI	EPA 200.7	ZN	8/16/2012	Ethel Suico
					TLI	EPA 200.8	AS	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BA	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CR	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CU	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	8/22/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MND	8/21/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MO	8/23/2012	Katia Kiarashpoor/Bita Emami

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

ocation	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-373	Ron Phelps	8/7/2012	10:00:00 AM	TLI	EPA 200.8	NI	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	PB	8/23/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SB	8/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 218.6	CR6	8/10/2012	George Wahba/Maksim Gorbuno
					TLI	EPA 300.0	FL	8/9/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	8/8/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	8/8/2012	Giawad Ghenniwa
					FIELD	HACH	PH	8/7/2012	Ron Phelps
					TLI	SM 2320B	ALKB	8/8/2012	Melissa Scharfe
					TLI	SM 2320B	ALKC	8/8/2012	Melissa Scharfe
					TLI	SM2130B	TRB	8/8/2012	Gautam Savani
					TLI	SM2540C	TDS	8/8/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	8/15/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	8/8/2012	Jenny Tankunakorn
SC-100B	SC-100B-WDR-377	C.Knight	9/4/2012	2:55:00 PM	TLI	EPA 120.1	SC	9/7/2012	Gautam Savani
					TLI	EPA 200.7	AL	9/10/2012	Ethel Suico
					TLI	EPA 200.7	В	9/10/2012	Ethel Suico
					TLI	EPA 200.7	FE	9/10/2012	Ethel Suico
					TLI	EPA 200.7	FETD	9/10/2012	Ethel Suico
					TLI	EPA 200.7	ZN	9/10/2012	Ethel Suico
					TLI	EPA 200.8	AS	9/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	9/14/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	9/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	9/27/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	9/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	9/21/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/2/2012	Katia Kiarashpoor
					TLI	EPA 200.8	РВ	9/21/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/1/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	9/7/2012	Himani Vaishnav
					TLI	EPA 300.0	FL	9/5/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	9/5/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	9/5/2012	Giawad Ghenniwa
					FIELD	HACH	PH	9/4/2012	C.Knight
					TLI	SM 2320B	ALKB	9/5/2012	Melissa Scharfe

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-377	C.Knight	9/4/2012	2:55:00 PM	TLI	SM 2320B	ALKC	9/5/2012	Melissa Scharfe
					TLI	SM2130B	TRB	9/5/2012	Gautam Savani
					TLI	SM2540C	TDS	9/6/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	9/10/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	9/5/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-368	Ron Phelps	7/2/2012	1:00:00 PM	TLI	EPA 120.1	SC	7/3/2012	Gautam Savani
					TLI	EPA 200.7	AL	7/11/2012	Ethel Suico
					TLI	EPA 200.7	В	7/11/2012	Ethel Suico
					TLI	EPA 200.7	FE	7/11/2012	Ethel Suico
					TLI	EPA 200.7	ZN	7/11/2012	Ethel Suico
					TLI	EPA 200.8	AS	7/13/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BA	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CR	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CU	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MO	8/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	NI	7/3/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	PB	8/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SB	8/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 218.6	CR6	7/3/2012	Maksin Gorbunov/Himani Vaishnav
					TLI	EPA 300.0	FL	7/3/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	7/3/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	7/3/2012	Giawad Ghenniwa
					FIELD	HACH	PH	7/2/2012	Ron Phelps
					TLI	SM2130B	TRB	7/3/2012	Gautam Savani
					TLI	SM2540C	TDS	7/3/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	7/9/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	7/3/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-369	Ron Phelps	7/10/2012	10:00:00 AM	TLI	EPA 120.1	SC	7/13/2012	Gautam Savani
					TLI	EPA 200.8	CR	7/12/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/12/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/14/2012	Maksim Gorbunov/Himani Vaishnav
					FIELD	HACH	PH	7/10/2012	Ron Phelps
					TLI	SM2130B	TRB	7/11/2012	Gautam Savani
					TLI	SM2540C	TDS	7/13/2012	Jenny Tankunakorn

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

_ocation	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-370	Ron Phelps	7/17/2012	10:00:00 AM	TLI	EPA 120.1	SC	7/20/2012	Gautam Savani
					TLI	EPA 200.8	CR	7/26/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/26/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/18/2012	Himani Vaishnav
					FIELD	HACH	PH	7/17/2012	Ron Phelps
					TLI	SM2130B	TRB	7/18/2012	Gautam Savani
					TLI	SM2540C	TDS	7/20/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-371	Chris Lentz	7/24/2012	2:00:00 PM	TLI	EPA 120.1	SC	7/27/2012	Gautam Savani
					TLI	EPA 200.8	CR	8/6/2012	Katia Kiarashpoor\ Bita Emami
					TLI	EPA 200.8	MN	8/7/2012	Katia Kiarashpoor\ Bita Emami
					TLI	EPA 218.6	CR6	7/27/2012	George Wahba
					FIELD	HACH	PH	7/24/2012	Chris Lentz
					TLI	SM2130B	TRB	7/25/2012	Gautam Savani
					TLI	SM2540C	TDS	7/26/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-372	Ron Phelps	7/31/2012	10:30:00 AM	TLI	EPA 120.1	SC	8/3/2012	Gautam Savani
					TLI	EPA 200.8	CR	8/7/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/7/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/2/2012	GeorgeWahba/Himani Vaishnav
					FIELD	HACH	PH	7/31/2012	Ron Phelps
					TLI	SM2130B	TRB	8/1/2012	Gautam Savani
					TLI	SM2540C	TDS	8/3/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-373	Ron Phelps	8/7/2012	10:00:00 AM	TLI	EPA 120.1	SC	8/10/2012	Gautam Savani
					TLI	EPA 200.7	AL	8/16/2012	Ethel Suico
					TLI	EPA 200.7	В	8/16/2012	Ethel Suico
					TLI	EPA 200.7	FE	8/16/2012	Ethel Suico
					TLI	EPA 200.7	ZN	8/16/2012	Ethel Suico
					TLI	EPA 200.8	AS	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BA	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CR	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CU	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	8/22/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MO	8/23/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	NI	8/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	PB	8/23/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SB	8/27/2012	Katia Kiarashpoor/Bita Emami

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-373	Ron Phelps	8/7/2012	10:00:00 AM	TLI	EPA 218.6	CR6	8/10/2012	George Wahba/Maksim Gorbunov
					TLI	EPA 300.0	FL	8/9/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	8/8/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	8/8/2012	Giawad Ghenniwa
					FIELD	HACH	PH	8/7/2012	Ron Phelps
					TLI	SM2130B	TRB	8/8/2012	Gautam Savani
					TLI	SM2540C	TDS	8/8/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	8/15/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	8/8/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-374a	Ron Phelps	8/13/2012	7:00:00 AM	TLI	EPA 120.1	SC	8/15/2012	Gautam Savani
					TLI	EPA 200.8	CR	8/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/22/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/14/2012	Himani Vaishnav
					FIELD	HACH	PH	8/13/2012	Ron Phelps
					TLI	SM2130B	TRB	8/14/2012	Gautam Savani
					TLI	SM2540C	TDS	8/14/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-374b	C.Knight	8/17/2012	2:11:00 PM	TLI	EPA 120.1	SC	8/20/2012	Gautam Savani
					TLI	EPA 200.8	CR	8/30/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/30/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/23/2012	Himani Vaishnav
					FIELD	HACH	PH	8/17/2012	C.Knight
					TLI	SM2130B	TRB	8/18/2012	Kim Luck
					TLI	SM2540C	TDS	8/20/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-375	Chris Lentz	8/21/2012	1:00:00 PM	TLI	EPA 120.1	SC	8/24/2012	Gautam Savani
					TLI	EPA 200.8	CR	8/30/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	8/30/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 218.6	CR6	8/29/2012	Himani Vaishnav
					FIELD	HACH	PH	8/21/2012	Chris Lentz
					TLI	SM2130B	TRB	8/22/2012	Gautam Savani
					TLI	SM2540C	TDS	8/23/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-376	Ron Phelps	8/28/2012	1:30:00 PM	TLI	EPA 120.1	SC	8/30/2012	Gautam Savani
					TLI	EPA 200.8	CR	9/11/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/29/2012	Himani Vaishnav
					FIELD	HACH	PH	8/28/2012	Ron Phelps

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-376	Ron Phelps	8/28/2012	1:30:00 PM	TLI	SM2130B	TRB	8/29/2012	Gautam Savani
					TLI	SM2540C	TDS	8/29/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-377	C.Knight	9/4/2012	1:19:00 PM	TLI	EPA 120.1	SC	9/7/2012	Gautam Savani
					TLI	EPA 200.7	AL	9/10/2012	Ethel Suico
					TLI	EPA 200.7	В	9/10/2012	Ethel Suico
					TLI	EPA 200.7	FE	9/10/2012	Ethel Suico
					TLI	EPA 200.7	ZN	9/10/2012	Ethel Suico
					TLI	EPA 200.8	AS	9/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	9/14/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	9/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	9/27/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/27/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	9/21/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/2/2012	Katia Kiarashpoor
					TLI	EPA 200.8	РВ	9/21/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/1/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	9/7/2012	Himani Vaishnav
					TLI	EPA 300.0	FL	9/5/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	9/5/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	9/5/2012	Giawad Ghenniwa
					FIELD	HACH	PH	9/4/2012	C.Knight
					TLI	SM2130B	TRB	9/5/2012	Gautam Savani
					TLI	SM2540C	TDS	9/6/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	9/10/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	9/5/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-378	C.Knight	9/11/2012	2:00:00 PM	TLI	EPA 120.1	SC	9/14/2012	Gautam Savani
					TLI	EPA 200.8	CR	9/26/2012	Bita Emami
					TLI	EPA 200.8	MN	9/26/2012	Bita Emami
					TLI	EPA 218.6	CR6	9/12/2012	Himani Vaishnav
					FIELD	HACH	PH	9/11/2012	C.Knight
					TLI	SM2130B	TRB	9/13/2012	Gautam Savani
					TLI	SM2540C	TDS	9/13/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-379	Josh Rosenberg	9/18/2012	3:30:00 PM	TLI	EPA 120.1	SC	9/19/2012	Gautam Savani
					TLI	EPA 200.8	CR	9/26/2012	Bita Emami
					TLI	EPA 200.8	MN	9/26/2012	Bita Emami

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-379	Josh Rosenberg	9/18/2012	3:30:00 PM	TLI	EPA 218.6	CR6	9/19/2012	Himani Vaishnav
					FIELD	HACH	PH	9/18/2012	C.Knight
					TLI	SM2130B	TRB	9/19/2012	Gautam Savani
					TLI	SM2540C	TDS	9/19/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-380	Chris Knight	9/25/2012	1:10:00 PM	TLI	EPA 120.1	SC	9/26/2012	Gautam Savani
					TLI	EPA 200.8	CR	9/26/2012	Bita Emami
					TLI	EPA 200.8	MN	9/26/2012	Bita Emami
					TLI	EPA 218.6	CR6	10/3/2012	Himani Vaishnav
					FIELD	HACH	PH	9/25/2012	C.Knight
					TLI	SM2130B	TRB	9/26/2012	Gautam Savani
					TLI	SM2540C	TDS	9/26/2012	Jenny Tankunakorn
SC-701	SC-701-WDR-375	Chris Lentz	8/21/2012	1:00:00 PM	TLI	EPA 120.1	SC	8/24/2012	Gautam Savani
					TLI	EPA 200.7	ZN	8/28/2012	Ethel Suico
					TLI	EPA 200.8	AG	10/2/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	AS	9/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BA	8/30/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BE	9/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CD	9/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CO	9/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CR	8/30/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CU	9/6/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	HG	8/24/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	8/30/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MO	9/21/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	NI	9/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	PB	8/30/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SB	9/20/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SE	9/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	TL	9/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	V	9/27/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 218.6	CR6	8/29/2012	Himani Vaishnav
					TLI	EPA 300.0	FL	8/22/2012	Giawad Ghenniwa
					FIELD	HACH	PH	8/21/2012	Chris Lentz
					TLI	SM2540C	TDS	8/23/2012	Jenny Tankunakorn
ase Separator	SC-Sludge-WDR-368	J.Aide	7/2/2012	1:15:00 PM	TLI	EPA 300.0	FL	7/3/2012	Giawad Ghenniwa

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
Phase Separator	SC-Sludge-WDR-368	J.Aide	7/2/2012	1:15:00 PM	TLI	EPA 300.0	NO3N	7/3/2012	Giawad Ghenniwa
					TLI	EPA 6010B	AG	7/12/2012	Ethel Suico
					TLI	EPA 6010B	AS	7/9/2012	Ethel Suico
					TLI	EPA 6010B	BA	7/9/2012	Ethel Suico
					TLI	EPA 6010B	CD	7/9/2012	Ethel Suico
					TLI	EPA 6010B	CO	7/9/2012	Ethel Suico
					TLI	EPA 6010B	CR	7/27/2012	Ethel Suico
					TLI	EPA 6010B	CU	7/9/2012	Ethel Suico
					TLI	EPA 6010B	MN	7/9/2012	Ethel Suico
					TLI	EPA 6010B	MO	7/9/2012	Ethel Suico
					TLI	EPA 6010B	NI	7/9/2012	Ethel Suico
					TLI	EPA 6010B	PB	7/9/2012	Ethel Suico
					TLI	EPA 6010B	SB	7/9/2012	Ethel Suico
					TLI	EPA 6010B	SE	7/9/2012	Ethel Suico
					TLI	EPA 6010B	TL	7/9/2012	Ethel Suico
					TLI	EPA 6010B	V	7/9/2012	Ethel Suico
					TLI	EPA 6010B	ZN	7/9/2012	Ethel Suico
					TLI	SM2540B	MOIST	7/5/2012	Gautam Savani
					TLI	SW 6020A	BE	7/13/2012	Katia Kiarashpoor
					TLI	SW 6020A	HG	7/13/2012	Katia Kiarashpoor
					TLI	SW 7199	CR6	7/18/2012	George Wahba

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information

Third Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
Phase Separator	SC-Sludge-WDR-368	J. Aide	07/2/2012	1:15:00 PM	ATL	96-Hour Acute Aquatic Toxicity Screening Test	BIO	7/6/2012 - 07/10/2012	Joseph A. LeMay

NOTES:

SC-700B = Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection well IW-2 (see attached P&ID TP-PR-10-10-04).

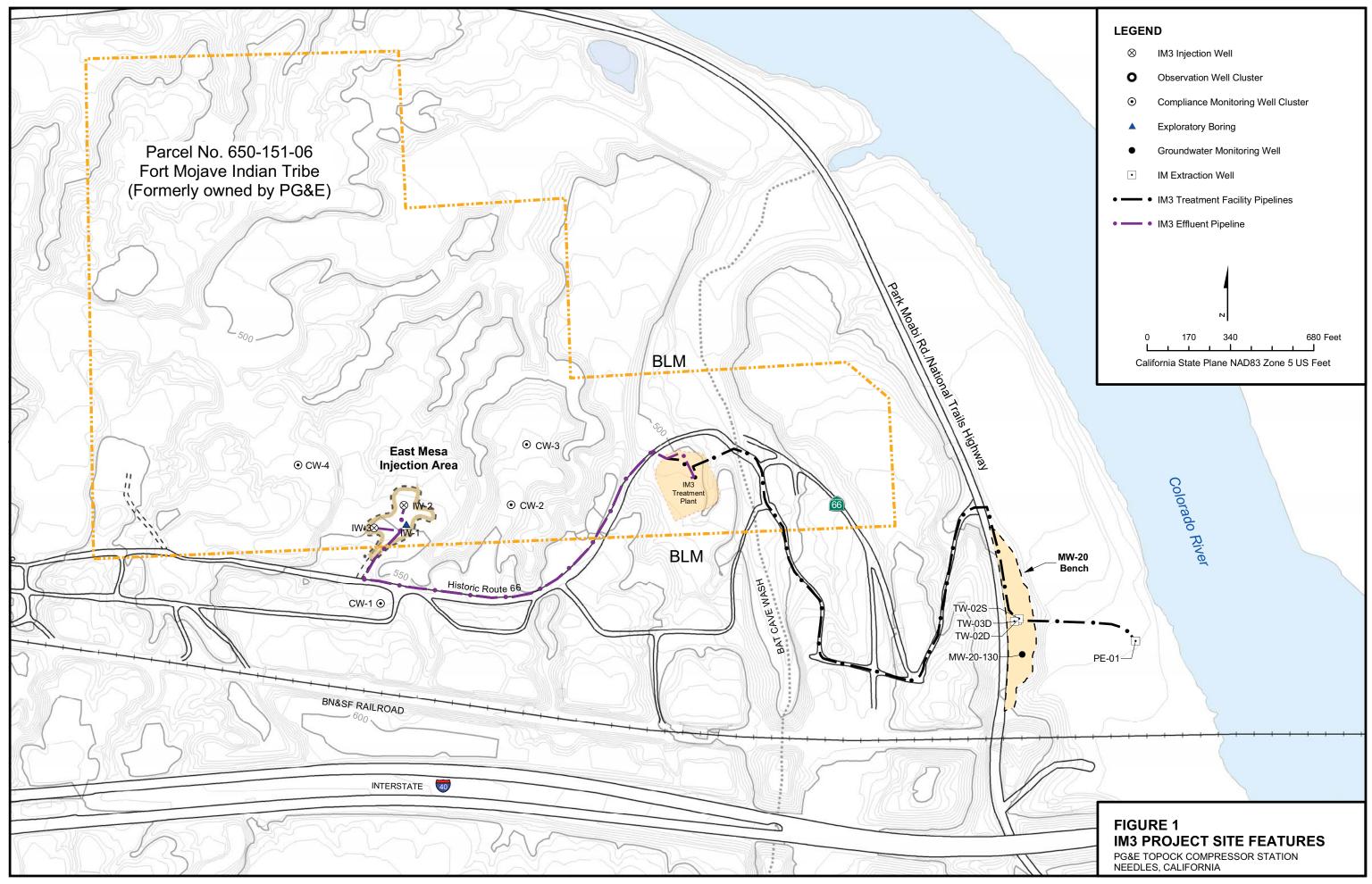
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

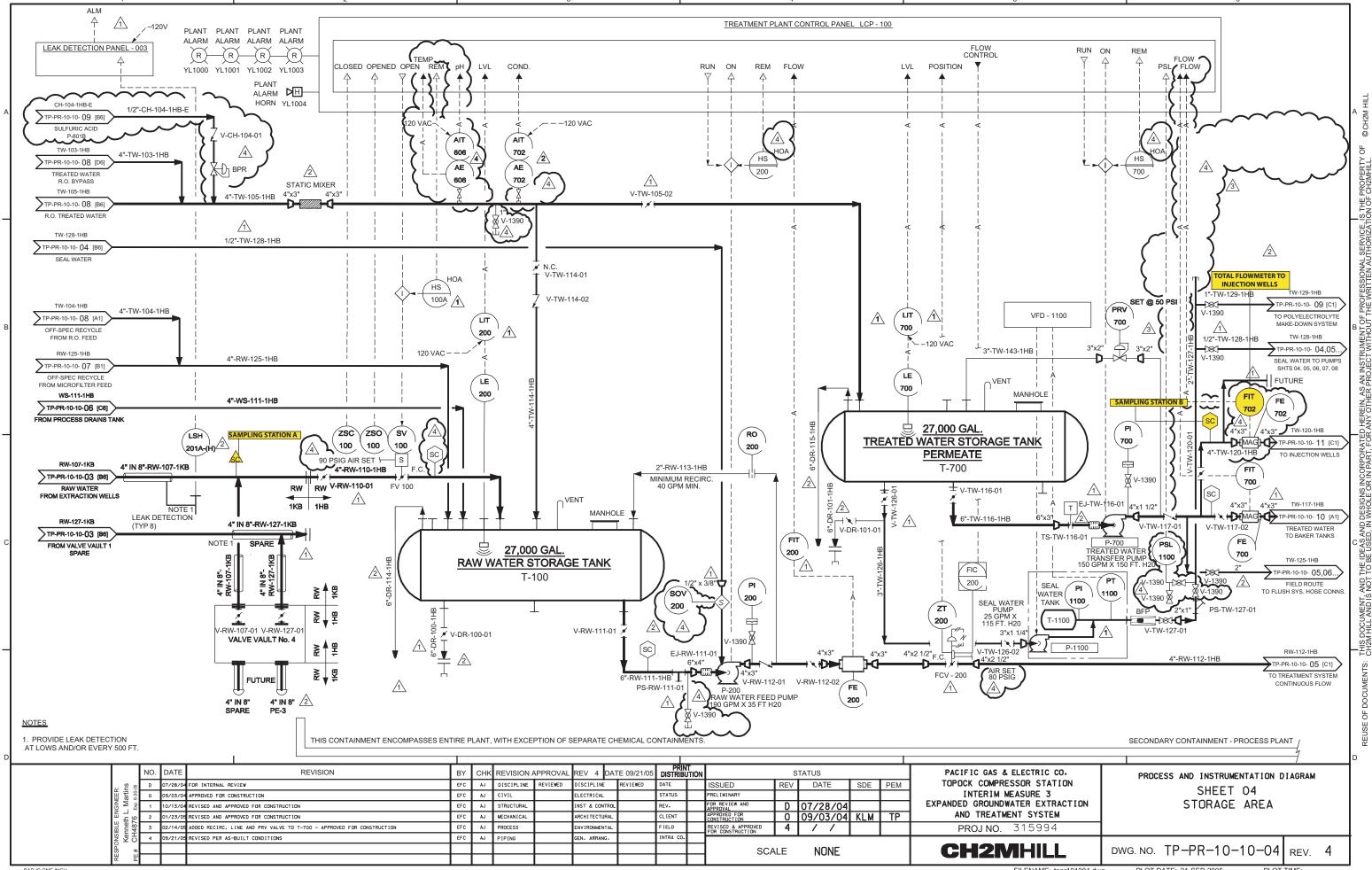
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

Prior to April 11, 2007 the analytical methods listed in the 40 CFR Part 136 for pH and TDS were E150.1 and E160.1, respectively. Per EPA and Department of Health Services guidelines, the analytical methods listed in the current 40 CFR Part 136 have changed to SM4500-H B and SM2540C as shown on the table.

ALKB =	alkalinity, bicarb as CaCO3	MO =	molybdenum
ALKC =	alkalinity, carb as CaCO3	MOIST =	moisture
AL =	aluminum	NH3N =	ammonia (as N)
Ag =	silver	NI =	nickel
AS =	arsenic	NO2N =	nitrite (as N)
B =	boron	NO3N =	nitrate (as N)
BA =	barium	PB =	lead
BE =	beryllium	PH =	рН
CD =	cadmium	SB =	antimony
CO =	cobalt	SC =	specific conductance
CR =	chromium	SE =	selenium
CR6 =	hexavalent chromium	SO4 =	sulfate
CU =	copper	TDS =	total dissolved solids
FE =	iron	TL =	thallium
FETD =	iron, dissolved	TLI =	Truesdail Laboratories, Inc.
FL =	fluoride	TRB =	turbidity
HG =	mercury	V =	vanadium
MN =	manganese	ZN =	zinc
MND =	manganese, dissolved		







FILENAME: PR-10-03.dgn

PLOT DATE: 11/19/2009

PLOT TIME: 10:27:54 AM

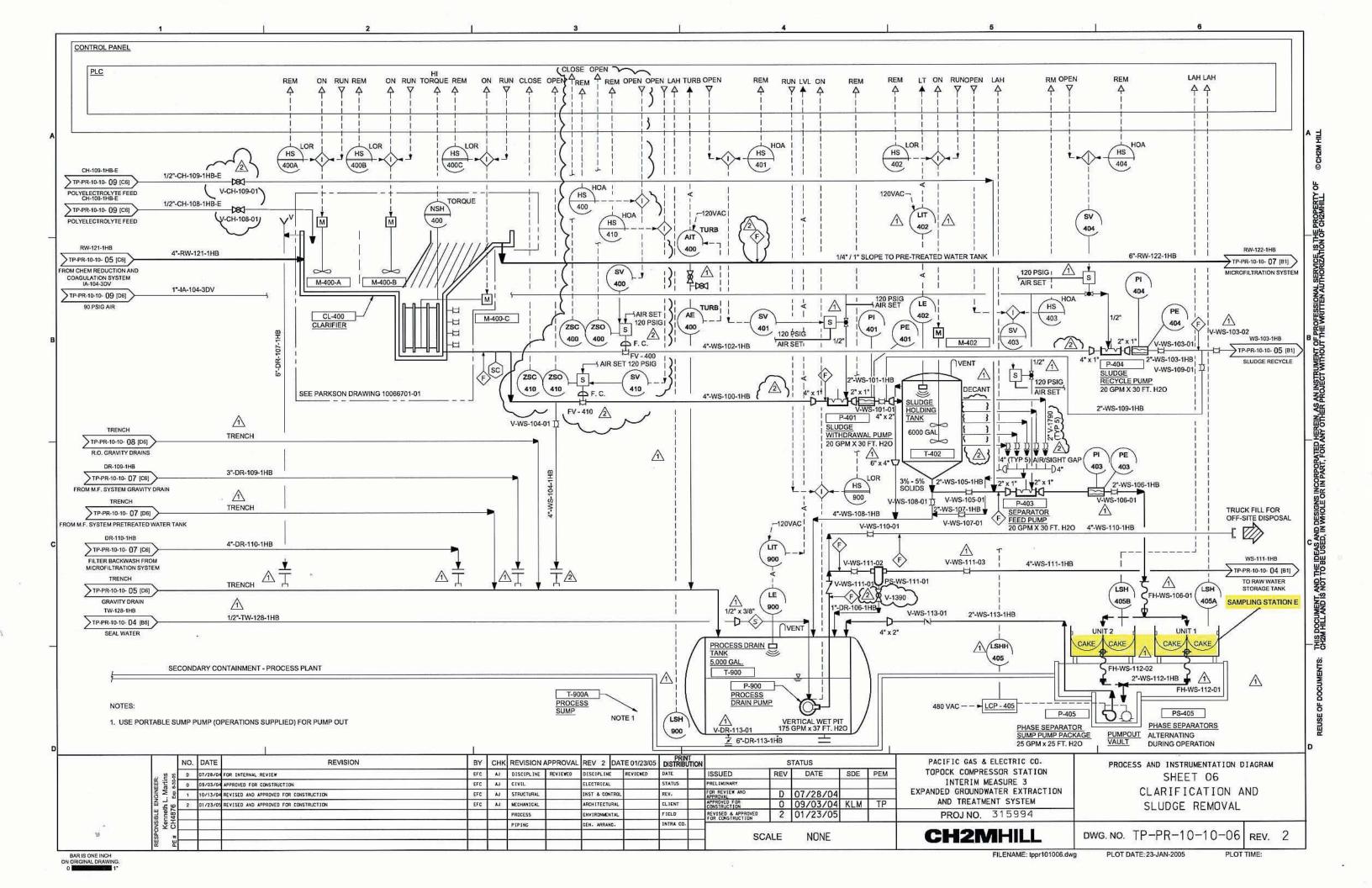
BAR IS ONE INCH ON ORIGINAL DRAWING.

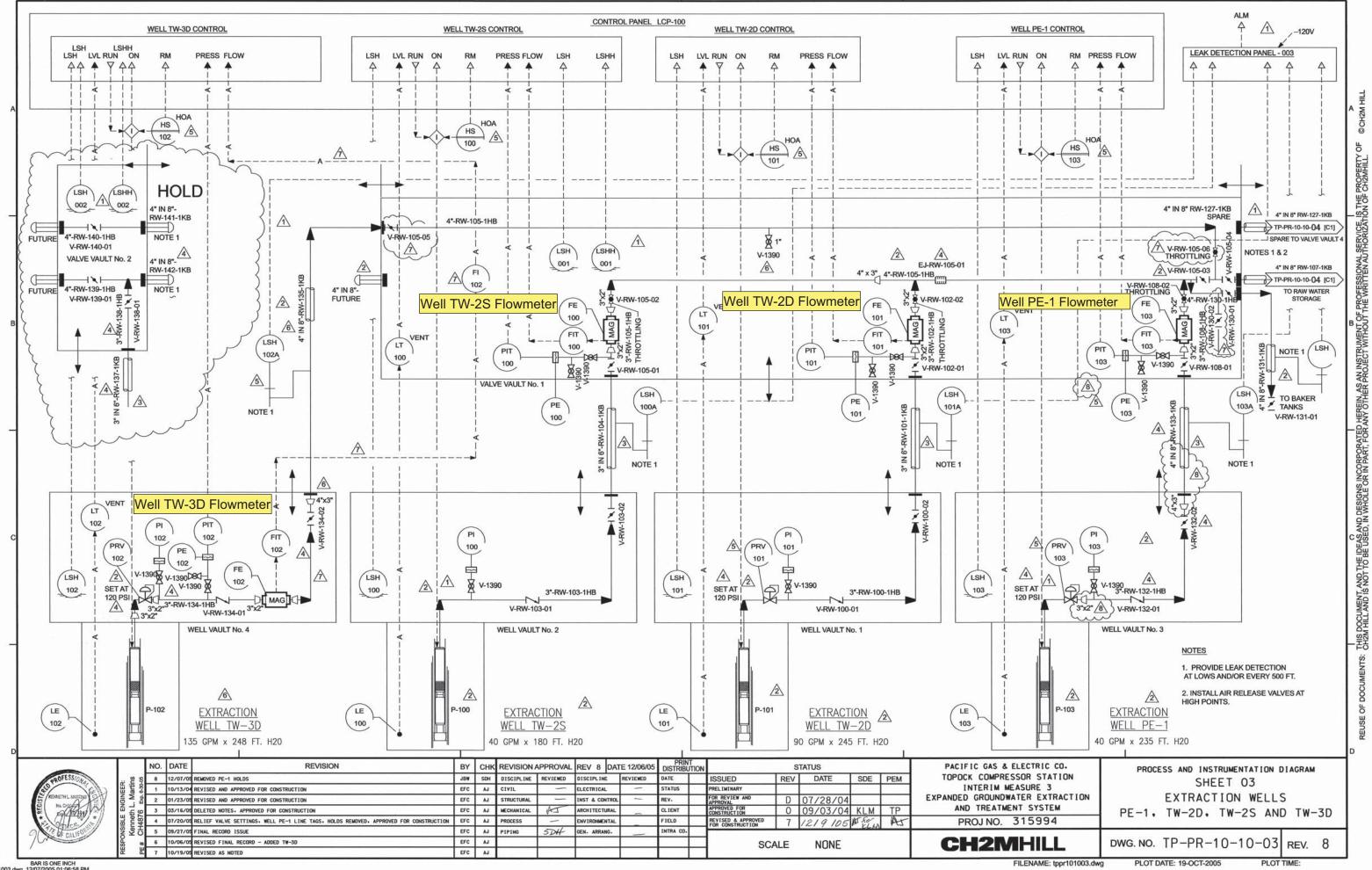
TO SEAL WATER TRUNK LINE PR-10-03 (HS 701 1 1/2" TW-154-1HB LOCATED IN CHEMICAL STORAGE AREA LOCATED NEAR EXISTING RO PR-10-03 -1/2" CH-112-1HB TO PRIMARY RO FROM P-2301 HCI ACID PUMP /-1/2" CH-114-1HB HYDRO-CHLORIC ACID (HCI) ☐ HCI ACID TOTE ☐ PUMP SKID SEE CROWN ANTISCALANT FEED PUMP SKID SEE CROWN SECONDARY RO PRIMARY RO ANTI-SCALANT CHEMICAL DRUM ANTI-SCALANT CHEMICAL DRUM 1A-102-3DV 1"-1A-108-3DV TP-PR-10-10-09(06) 90 PSIG AIR 1/4" CH-115-1HB FROM P-2402 120VAC 1 1/2" TW-152-1HB TO PRIMARY RO FROM P-2401 ANTI-SCALANT FEED PUMP RECYCLE COND COND 701 701 ST STAGE RO CONCENTATE V-1390 1 1/2"-TW-148-1HB PR-10-03 2"x1 1/2" NO SECONDARY REVERSE OSMOSIS SKID SEE CROWN SOLUTION DWG: PS-0689-08 1 1/2" TW-149-1HB T-2601 SECONDARY 1" TW-146-1HB SECONDAR RO FEED TANK SEE CROWN RO FEED PUMP SEE _x 701 (NOTE 3) TO T-603 TANK (LE) CROWN DWG PS-0689-07 V-1390 1 1/2" TW-151-1HB SAMPI ING 701 <u></u> ∩ VENT STATION D PR-10-03 O CONCENTRATE 701 CLOSE FROM PRIMARY RO FLOWMETER Oběv 5 T-701 FE 8000 GAL. 701 SEAL WATER TS-TW-111-01 ፵፫ T 6"x1 1/2" ▼ 3"x1" 3"x1" V-TW-112-01 V-TW-112-03 **RECORD DRAWINGS** SOV V-TW-112-03 701 J PORCELLA 6"-TW-111-1HB P-107 THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS, THEY ARE △ 1/2"x3/8" SEAL WATER RO CONCENTRATE TP-PR-10-10-08 [B6] NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TRANSFER PUMP 80 GPM X 85 FT H20 TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR 1" TW-147-1HB OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS. TW-112-1RB TP-PR-10-10 [C1] TO TRENCH DRAIN RO CONCENTRATE REVISION BY CHK PRINT DISTRIBUTION DATE REVISION APPROVAL REV 0 DATE 10/02/09 STATUS PACIFIC GAS & ELECTRIC CO. PROCESS AND INSTRUMENTATION DIAGRAM REV DATE TOPOCK COMPRESSOR STATION A 2/12/09 INTERNAL REVIEW DISCIPLINE REVIEWED DISCIPLINE REVIEWED ISSUED SDE PEM REVERSE OSMOSIS SYSTEM 2/12/09 JP INTERIM MEASURE 3 ORIGINALLY STAMPED /12/09 CLIENT REVIEW ELECTRICAL STATUS PREL [M] NARY R REVIEW AND SHEET TWO OF TWO 4/01/09 FOR REVIEW AND APPROVA PLANT PERFORMANCE IMPROVEMENTS 4/01/09 AND SIGNED BY: PPROVED FOR ONSTRUCTION JOHN PORCELLA 1/17/09 FINAL RECORD ISSUE JR MECHAN1CAL ARCH | TECTURAL LIENT CALIFORNIA PE NO. C70145 PROCESS FIELD **PROJ NO.** 362032 0 10/02/09 ON 04-01-2009 INTRA CO PIPING SJ GEN. ARRANG. **CH2M**HILL DWG. NO. PR-10-04 SCALE NONE REV. 0 BAR IS ONE INCH ON ORIGINAL DRAWING. FILENAME: PR-10-04.dgn PLOT DATE: 11/19/2009 PLOT TIME: 10:28:26 AM

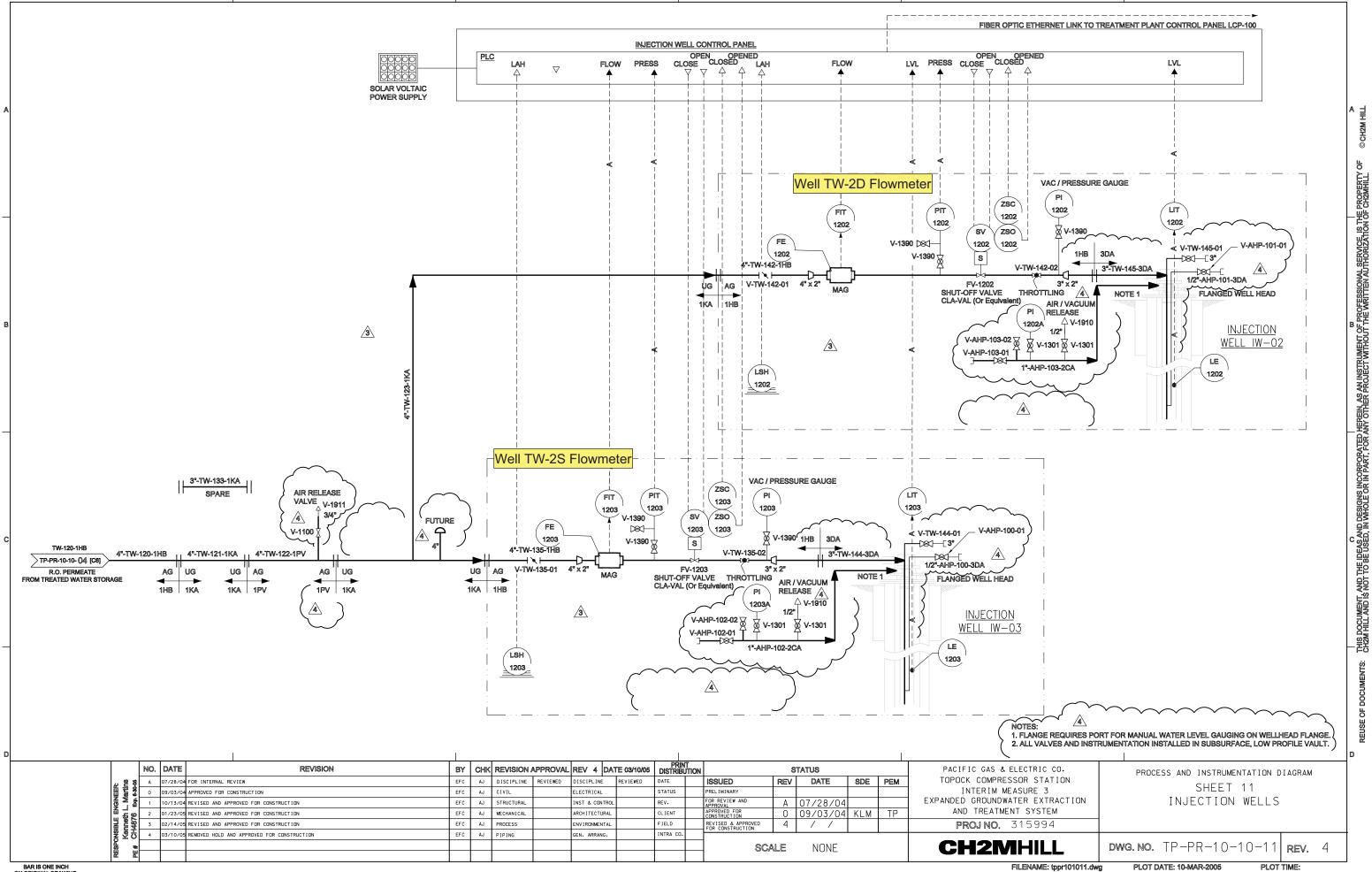
COND

RUN ON FLOW

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN AS AN INSTRUMENT OF PROFESSIONAL SERVICE. IS THE PROPERTY CHZM HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CHZMHILL.







BAR IS ONE INCH ON ORIGINAL DRAWING





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Revision 1

August 6, 2012

E2 Consulting Engineers, Inc.

Mr. Shawn Duffy 155 Grand Ave., Suite 1000 Oakland, California 94612

Project: PG&E Topock Project

Date Sampled: 7/2/12 Truesdail ID: 802393

Subject: Cross-reference Table for Subcontracted Analyses

Dear Mr. Duffy:

Bioassay 96hr Acute Toxicity requested for the referenced project were subcontracted to Aquatic Testing Laboratories. Please refer to the cross-reference table below for sample identifications.

Client ID	Truesdail ID	Aquatic Testing Labs
SC-Sludge-WDR-368	802393	A-12070501-001

The original subcontracted report is attached.

Please feel free to contact me at 714-730-6239 extension 200 should you have any questions.

Sincerely,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager Analytical Services

LABORATORY REPORT

Date:

July 10, 2012

Client:

Truesdail Laboratories, Inc.

14201 Franklin Avenue Tustin, CA 92780 Attn: Sean Condon Aquatic Testing Laboratories

Adedicated to providing quality aquatic toxicity testing@

4350 Transport Street, Unit 107 Ventura, CA 93003

(805) 650-0546 FAX (805) 650-0756

CA DOHS ELAP Cert. No.: 1775

Laboratory No.:

A-12070501-001

Sample ID.:

802393

Sample Control:

The sample was received by ATL chilled and with the chain of custody record

attached.

Date Sampled:

07/02/12

Date Received:

07/05/12

Date Tested:

07/06/12 to 07/10/12

Sample Analysis:

The following analyses were performed on your sample:

CCR Title 22 Fathead Minnow Hazardous Waste Screen Bioassay (Polisini & Miller 1988).

Attached are the test data generated from the analysis of your sample. All testing was

conducted under the direct supervision of Joseph A. LeMay.

Result Summary:

Sample ID.

<u>Results</u>

802393

PASS (LC50 > 750 mg/l)

Quality Control:

Reviewed and approved by:

Joseph A. LeMay

Laboratory Director

FATHEAD MINNOW HAZARDOUS WASTE **SCREEN BIOASSAY**

Aquatic Testing Laboratories

Lab No.: <u>A /2070501-201</u>
Client/ID: <u>Truchda:// 802393</u>

TEST SUMMARY

Species: Pimephales promelas.

Fish weight (gm): av: 0.26; min: 0.21; max: 0.30.

Reference Toxicant: SDS conducted monthly.

Test chamber volume: 10 liters.

Temperature: 20 +/- 2°C.

Aeration: none, unless D.O. drops below 5.0 mg/l.

Number of replicates: 2.

Dilution water: Soft reconstituted water (40-48 mg/l CaCO₃).

Source: In-Lab Culture. Regulations: CCR Title 22.

Test Protocol: California F&G/DHS 1988.

Endpoints: Survival at 96 hrs.

Test type: Static. Feeding: None.

Number of fish per chamber: 10. Photoperiod: 16/8 hrs light/dark.

TEST DATA

	IN	ITIA	L	24 Hr			48 Hr		72 Hr				96 Hr						
Date/Time:	7-6	-12 1170 7-7-12 (130		7-8	-12	לוו	б	7-9-	7-9-12 1000			7-10-12 1100							
Analyst:			2			7		7		L. 4.				L.∀.					
Allaiyst.	°C	DO	pН	°C	DO	рН	# D	°C	DO	pН	# D	°C	DO	pН	# D	۰C	DO	pН	# D
Control A	22.0	8.7	81	که, بی	6.3	8.1	0	Zo. 6	5.7	27	0	20,4	8.6	7.6	0	20.6	8.8	7.8	0
Control B	<i>≥0.0</i>	8.7	8,2	<u>که</u> . لا	7.0	8.1	0	2n 6	6.7	27	0	20.4	8.3	7.6	0	20.7	8.3	7.8	0
400 mg/l A	20.0	l	1		75	8.0	1	ъ. 7	6.6	26	0	20.4	8.3	7.6	0	20.7	8.2	7.7	0
400 mg/l B	22.0	8.9	۶. ي	3. 5	7.5	8.0	0	8.7	6.3	26	0	20.4	8.6	7.7	0	20.8	8.6	7.7	0
750 mg/l A	کيه	8.4	-	1	7.5	8.1	0	ъ. 7	6.5	7.7	0	20.4	8.8	7.9	0	20.8	8.7	7.8	0
750 mg/l B	20.0	8.9	8,2	ઢ. દુ	8.0	8.1	0	के ह	6.7	7.8	0	20.4	8.3	7.9	0	20.6	8.4	7.8	0

Comments:

Extraction method: Mechanical shaking _____.

None (aqueous solution)

Dissolved Oxygen (DO) readings in mg/l O2. Test Aerated: Yes / No

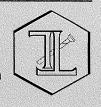
		CONT	ROL	·	HIGH CONCENTRATION					
	Alk	alinity	Н	ardness	All	kalinity	Hardness			
Initial	32	mg/l CaCO ₃	46	mg/l CaCO ₃	31	mg/l CaCO ₃	47	mg/l CaCO3		
Final	32	mg/l CaCO ₃	46	mg/l CaCO ₃	36	mg/l CaCO ₃	72	mg/l CaCO ₃		

Total Number Dead									
Control	0	/20							
400 mg/l	1	/20							
750 mg/l	0	/20							

	RESULTS (the checked result applies based on fish survival rates)							
	PASSED	LC50 > 750 mg/l (<40% dead in 750 mg/l conc.)						
NA	FAILED	≥40% dead in 750 mg/l (close to passing - definitive test recommended)						
MA	FAILED	LC50 < 400 mg/l (>60% dead in 400 mg/l conc.)						

Твиезры LAвораторие, Inc.

14201 FRANKLIN AVENUE, TUSTIN, CALIFORNIA 92780



Laboratory Transmittal Form

Please sign, date & <u>return this form with the results</u>, to:

Attn: Sean Condon

14201 Franklin Avenue, Tustin, California 92780 Please include Truesdail Sample ID on your invoice

ALERT!!

Date: 07/03/121 Page: 1 of 1

Laboratory: Aquatic Testing Laboratories

Attention: Joe LeMay

Address: 4350 Transport St. #107, Ph#:805-650- 0546

City: Ventura State: CA Zip: 93003

Sealed? Yes/No		ON Secrived on Ice? (Yes A) HEUSH (5 day TAT)						\[\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\text{\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\te\tint{\text{\text{\text{\text{\text{\text{\text{\tintet{\text{\ticl{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\				
Containers Total	I I					The state of the s						
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əmiT	Date	Company	Printed Name	Signature	
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14201 FRANKLIN AVENUE TUSTIN, CALIFORNIA 92780-7008 (714) 730-6239 · FAX (714) 730-6462 www.truesdail.com

August 5, 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-WDR-368 PROJECT, SLUDGE

MONITORING,

TLI NO.: 802393

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-368 project sludge monitoring. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on July 2, 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.

All final results and associated dilution factors are reported on a dry weight basis.

The recovery for the digested matrix spike (MS) for Hexavalent Chromium by SW 7199 (batch 07CrH12H) was just below the acceptance limits, possibly due to matrix interference. Both the insoluble matrix spike (IMS) and post digestion matrix spike (PDMS) were within acceptable limits, therefore, the data was accepted.

No other violations or nonconformance 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

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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 802393

Date: August 5, 2012 Collected: July 2, 2012

Received: July 2, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Anions	Giawad Ghenniwa
SM 2540 B	% Moisture	Gautam Savani
SW 6010B	Metals by ICP	Ethel Suico
SW 6020A	Metals by ICP/MS	Katia Kiarashpoor
SW 7199	Hexavalent Chromium	George Wahba

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14201 FRANKL (714) 730-62

Laboratory No.: 802393 Date Received: July 2, 2012 Client: E2 Consulting Engineers, Inc. 155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

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

MQ.10.879424 :.ou .O.9

Analytical Results Summary

				:		
₽.13	5.31	r	2.4.2	31:61 896-1	SC-Sludge-WDR	802393
%	бү/бш	ыд/ка	ыд/қа			
			тиітол _і О			
% Moisture	Witrate as M	Fluoride	Hexavalent			
2M 2540 B	EPA 300.0	EPA 300.0	6617 WS	Sample Time	Sample I.D.	Lab I.D.

ND: Non Detected (below reporting limit) mg/L: Milligrams pet liter.

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

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Laboratory No.: 802393 Date Received: July 2, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy Project Name: PG&E Topock Project

Project No.: 424973.01.DM P.O. No.: 424973.01.DM

METALS ANALYSIS: Total Metal Analyses as Requested

	8.98	7 6E	ΔN	ND	ND	12.6	5.52	0.123	346	31:21	SC-Sludge-WDR-368	802393
	Zinc SW 6010B SW 6010B	Vanadium SW 6010B 07/09/12 mg/kg	Thallium SW 6010B 07/09/12 mg/kg	Silver SW 6010B Mg/kg	Selenium SW 6010B Mg/kg	Nickel SW 6010B 07/09/12 mg/kg	Molybdenum SW 6010B SW 6010B	Mercury SW 6020A 07/13/12 mg/kg	mð\kð 01\09\15 2M 6010B Wsuðsuese	e of Analysis: Time Coll.	Date Gi əlqms2	Lab I.D.
21.9	ND	3.34	3410	۲.93	ND	0.53	ΔN	7.03		8 13:15	SC-Sludge-WDR-368	802393
Pad 07/09/12 SW 6010B Lead	Copper 07/09/12 Copper	Cobalt SW 6010B 07/09/12 mg/kg	Chromium SW 6010B 07\27\12 mg\kg	Cadmium SW 6010B 07/09/12 mg/kg	Beryllium SW 6020A 07/13/12 mg/kg	Barium 67/09/12 mg/kg	Arsenic SW 6010B SY\09\12 @Y\gm	Antimony SW 6010B 07/09/12 mg/kg	4	e of Analysis: Time Coll.	Datu Dalgma2	.G.I dsJ

Analytical Results Summary

NOTES:

ND: Not detected, or below limit of detection

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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample Project Name: PG&E Topock Project

Project No.: 424973.01.DM P.O. No.: 424973.01.DM Prep. Batch: 07CrH12H Laboratory No.: 802393

Date: August 5, 2012 Collected: July 2, 2012

Received: July 2, 2012
Prep/ Analyzed: July 18, 2012
Analytical Batch: 07CrH12H

Investigation:

Hexavalent Chromium by IC Using Method SW 7199

REPORT

Analytical Results Hexavalent Chromium

<u>DF</u> Results <u>Units</u> RL Field I.D. Sample Time Run Time TLI I.D. 24.2 10.0 8.29 13:15 13:44 mg/kg 802393 SC-Sludge-WDR-368

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	802613-3	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	802393	24.2	25.0	13.3	333	272	357	74.4%	75-125%	No
IMS	802393	24.2	50.0	42.8	2138	2280	2162	106%	75-125%	Yes
PDMS	802393	24.2	25.0	8.29	207	238	231	103%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.400		<0.400	Yes
MRCCS	2.08	2.00	104%	90% - 110%	Yes
MRCVS#1	1.99	2.00	99.4%	90% - 110%	Yes
MRCVS#2	1.84	2.00	91.8%	90% - 110%	Yes
LLCS	0.00998	0.0100	99.8%	70% - 130%	Yes
LCS	2.00	2.00	99.9%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

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.

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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample Project Name: PG&E Topock Project

Project No.: 424973.01.DM P.O. No.: 424973.01.DM REPORT

Laboratory No.: 802393

Date: August 5, 2012 Collected: July 2, 2012

Received: July 2, 2012

Prep/ Analyzed: July 5, 2012 **Analytical Batch:** 07SOLID12A

Investigation:

Total Solids by SM 2540 B

Analytical Results % Moisture

 TLI I.D.
 Field I.D.
 Sample Time
 Units
 Results

 802393
 SC-Sludge-WDR-368
 13:15
 %
 51.4

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	centration Duplicate Concentration		Acceptance limits	QC Within Control
Duplicate	802393	51.4	52.3	1.85%	<u>≤</u> 20%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

ゲート 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.

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample
Project Name: PG&E Topock Project

Project No.: 424973.01.DM P.O. No.: 424973.01.DM Laboratory No.: 802393

Date: August 5, 2012

Collected: July 2, 2012 Received: July 2, 2012

Prep/ Analyzed: July 3, 2012 Analytical Batch: 07AN12B

Investigation:

Fluoride by Ion Chromatography using EPA 300.0

Analytical Results Fluoride

Sample Time TLI I.D. Run Time Units DF Field I.D. RL Results SC-Sludge-WDR-368 12:55 4.11 802393 13:15 mg/kg 1.00 23.1

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	802394-2	2.48	2.42	2.78%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control	
MS	802394-2	2.48	5.00	4.00	20.0	23.0	22.5	102%	85-115%	Yes	

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500		<0.500	Yes
MRCCS	4.16	4.00	104%	90% - 110%	Yes
MRCVS#1	3.11	3.00	104%	90% - 110%	Yes
MRCVS#2	3.10	3.00	103%	90% - 110%	Yes
LCS	4.16	4.00	104%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

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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 Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample
Project Name: PG&E Topock Project

Project No.: 424973.01.DM **P.O. No.:** 424973.01.DM

Laboratory No.: 802393

Date: August 5, 2012

Collected: July 2, 2012 Received: July 2, 2012

Prep/ Analyzed: July 3, 2012 Analytical Batch: 07AN12B

Investigation:

Nitrate as N by Ion Chromatography using EPA 300.0

Analytical Results Nitrate as N

Field I.D. Sample Time **Run Time** <u>Units</u> DF TLI I.D. RLResults 802393 SC-Sludge-WDR-368 13:15 12:55 mg/kg 1.00 8.22 15.5

QA/QC Summary

	QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
	Duplicate	802394-2	2.99	3.03	1.36%	<u>≤</u> 20%	Yes
Т				Measured	Theoretica	ı	

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	802394-2	2.99	5.00	4.00	20.0	23.9	23.0	104%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500		<0.500	Yes
MRCCS	4.06	4.00	102%	90% - 110%	Yes
MRCVS#1	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#2	2.96	3.00	98.6%	90% - 110%	Yes
LCS	4.07	4.00	102%	90% - 110%	Yes

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DF: Dilution Factor.

Respectfully submitted,

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Laboratory No.: 802393 Reported: August 5, 2012 Collected: July 2, 2012 Received: July 2, 2012

Analyzed: See Below

www.truesdail.com

Attention: Shawn Duffy

Samples: One (1) Soil Sample Project Name: PG&E Topock Project

Project No.: 424973.01.DM P.O. No.: 424973.01.DM

Investigation: Total Metal Analyses as Requested

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Analytical Results

REPORT

SAMPLE ID:	SC-Sludge-WDR-368	Time Co	llected:	13:15		LAB ID	: 802393	
		Reported					Date	Time
Parameter	Method	Value	DF	Units	RL	Batch	Analyzed	Analyzed
Antimony	SW 6010B	50.7	2.00	mg/kg	2.00	070912B-Th2	07/09/12	17:29
Arsenic	SW 6010B	ND	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Barium	SW 6010B	55.0	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Beryllium	SW 6020A	ND	5.00	mg/kg	1.00	071212B	07/13/12	6:16
Cadmium	SW 6010B	7.93	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Chromium	SW 6010B	3410	10.0	mg/kg	9.51	072712A-Th2	07/27/12	17:33
Cobalt	SW 6010B	3.34	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Copper	SW 6010B	ND	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Lead	SW 6010B	6.12	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Manganese	SW 6010B	346	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Mercury	SW 6020A	0.123	5.00	mg/kg	0.100	071212B	07/13/12	6:16
Molybdenum	SW 6010B	5.52	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Nickel	SW 6010B	9.21	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Selenium	SW 6010B	ND	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Silver	SW 6010B	ND	5.00	mg/kg	4.75	071212A-Th2	07/12/12	13:20
Thallium	SW 6010B	ND	2.00	mg/kg	2.00	070912B-Th2	07/09/12	17:29
Vanadium	SW 6010B	39.4	2.00	mg/kg	1.97	070912B-Th2	07/09/12	17:29
Zinc	SW 6010B	56.5	2.00	mg/kg	2.00	070912B-Th2	07/09/12	17:29

NOTES:

Sample results and reporting limits reported on a dry weight basis.

ND: Not detected, or below limit of detection.

DF: Dilution factor.

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

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

Oakland, CA 94612

Attention: Shawn Duffy

Samples: One (1) Soil Sample Project Name: PG&E Topock Project

Project No.: 424973.01.DM P.O. No.: 424973.01.DM Laboratory No.: 802393 Reported: August 5, 2012 Collected: July 2, 2012 Received: July 2, 2012

Quality Control/Quality Assurance Report

			DIGESTED BLANK			MRCCS							
Desembles	Method	Batch	Units	Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Parameter	SW 6010B	070912B-Th2	mg/kg	ND	2.00	4.86	5.00	97.2%	90-110%	4.80	5.00	96.0%	90-110%
Antimony		070912B-Th2	mg/kg	ND	0.500	4.85	5.00	97.0%	90-110%	4.79	5.00	95.9%	90-110%
Arsenic	SW 6010B			ND	1.00	4.96	5.00	99.3%	90-110%	4.98	5.00	99.6%	90-110%
Barium	SW 6010B	070912B-Th2	mg/kg		1.00	0.00989	0.0100	98.9%	90-110%	0.00973	0.0100	97.3%	90-110%
Beryllium	SW 6020A	071212B	mg/kg	ND	0.500	5.03	5.00	101%	90-110%	4.96	5.00	99.2%	90-110%
Cadmium	SW 6010B	070912B-Th2	mg/kg	ND		4.98	5.00	99.7%	90-110%	4.71	5.00	94.2%	90-110%
Chromium	SW 6010B		mg/kg	ND	1.00		5.00	98.3%	90-110%	4.85	5.00	97.0%	90-110%
Cobalt	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.92		99.0%	90-110%	4.86	5.00	97.2%	90-110%
Copper	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.95	5.00		90-110%	4.59	5.00	91.8%	90-110%
Lead	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.66	5.00	93.3%			5.00	95.3%	90-110%
Manganese	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.91	5.00	98.2%	90-110%	4.76		95.3%	90-110%
Mercury	SW 6020A	071212B	mg/kg	ND	0.100	0.00205	0.00200	103%	90-110%	0.00191	0.00200		
Molybdenum	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.91	5.00	98.1%	90-110%	4.85	5.00	96.9%	90-110%
Nickel	SW 6010B		mg/kg	ND	1.00	4.92	5.00	98.4%	90-110%	4.85	5.00	97.1%	90-110%
Selenium	SW 6010B		mg/kg	ND	1.00	4.56	5.00	91.2%	90-110%	4.51	5.00	90.2%	90-110%
	SW 6010B		mg/kg	ND	1.00	4.83	5.00	96.6%	90-110%	4.83	5.00	96.5%	90-110%
Silver			mg/kg	ND	2.00	5.04	5.00	101%	90-110%	4.98	5.00	99.6%	90-110%
Thallium	SW 6010B			ND	1.00	4.89	5.00	97.7%	90-110%	4.80	5.00	96.0%	90-110%
Vanadium	SW 6010B		mg/kg			5.10	5.00	102%	90-110%	5.03	5.00	101%	90-110%
Zinc Zinc	SW 6010B	070912B-Th2	mg/kg	ND	2.00	3.10	3.00	10270					



INTERFERENCE CHECK STANDARD (ICS A+B #1)

INTERFERENCE CHECK STANDARD (ICS A+B #2)

Parameter	Method	Units	ICS	ICS	%	Control	ICS	ICS	%	Control
			Obs.	Theo.	Rec.	Limits	Obs.	Theo.	Rec.	Limits
Arsenic	SW 6010B	mg/kg	2.02	2.00	101%	80-120%	1.98	2.00	99.0%	80-120%
Cadmium	SW 6010B	mg/kg	2.13	2.00	106%	80-120%	2.08	2.00	104%	80-120%
Chromium	SW 6010B	mg/kg	2.06	2.00	103%	80-120%	1.98	2.00	99.2%	80-120%
Cobalt	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	2.04	2.00	102%	80-120%
Copper	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	2.06	2.00	103%	80-120%
Manganese	SW 6010B	mg/kg	2.07	2.00	104%	80-120%	2.03	2.00	101%	80-120%
Mercury	SW 6020A	mg/kg	0.00206	0.00200	103%	80-120%	0.00200	0.00200	99.8%	80-120%
Nickel	SW 6010B	mg/kg	2.10	2.00	105%	80-120%	2.05	2.00	102%	80-120%
Silver	SW 6010B	mg/kg	1.91	2.00	95.4%	80-120%	1.93	2.00	96.7%	80-120%
Zinc	SW 6010B	mg/kg	2.16	2.00	108%	80-120%	2.12	2.00	106%	80-120%

LABORATORY CONTROL SAMPLES

SAMPLE DUPLICATES

											Precision
Parameter	Method	Units	LCS	LCS	%	Control	SAMPLE	SAMPLE	DUP	%	Control
			Obs.	Theo.	Rec.	Limits	ID	RESULT	RESULT	RPD	Limits %
Antimony	SW 6010B	mg/kg	0.100	0.100	100%	85-115%	802393	50.7	51.0	0.57%	≤20
Arsenic	SW 6010B	mg/kg	0.101	0.100	101%	85-115%	802393	ND	ND	0.00%	≤20
Barium	SW 6010B	mg/kg	0.100	0.100	100%	85-115%	802393	55.0	54.2	1.39%	≤20
Beryllium	SW 6020A	mg/kg	0.0990	0.100	99.0%	85-115%	802393	ND	ND	0.00%	≤20
Cadmium	SW 6010B	mg/kg	0.105	0.100	105%	85-115%	802393	7.93	7.83	1.28%	≲20
Chromium	SW 6010B	mg/kg	0.100	0.100	100%	85-115%	802393	3410	3450	1.17%	≤20
Cobalt	SW 6010B	mg/kg	0.103	0.100	103%	85-115%	802393	3.34	3.35	0.49%	≤20
Copper	SW 6010B	mg/kg	0.105	0.100	105%	85-115%	802393	ND	ND	0.00%	≤20
Lead	SW 6010B	mg/kg	0.101	0.100	101%	85-115%	802393	6.12	6.35	3.69%	≤20
Manganese	SW 6010B	mg/kg	0.104	0.100	104%	85-115%	802393	346	350	1.12%	≤20
Mercury	SW 6020A	mg/kg	0.0194	0.0200	97.0%	85-115%	802393	0.123	0.131	6.22%	≤20
Molybdenum	SW 6010B	mg/kg	0.0986	0.100	98.6%	85-115%	802393	5.52	5.37	0.00%	≤20
Nickel	SW 6010B	mg/kg	0.105	0.100	105%	85-115%	802393	9.21	9.19	0.16%	≤20
Selenium	SW 6010B	mg/kg	0.0952	0.100	95.2%	85-115%	802393	ND	ND	0.00%	≤20
Silver	SW 6010B	mg/kg	0.0910	0.100	91.0%	85-115%	802393	ND	ND	0.00%	≤20
T hallium	SW 6010B	mg/kg	0.107	0.100	107%	85-115%	802393	ND	ND	0.00%	≤20
¥anadium	SW 6010B	mg/kg	0.0979	0.100	97.9%	85-115%	802393	39.4	38.8	1.53%	≤20
Q inc	SW 6010B	mg/kg	0.108	0.100	108%	85-115%	802393	56.5	55.4	1.98%	≤20

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MATRIX SPIKE

				Sample		Spike	Total Amt.	Theo.	MS	%	Control
Sample ID	Parameter	Method	Units	Result	DF	Level	of Spike	Value	Obs.	Rec.	Limits %
802393	Antimony	SW 6010B	mg/kg	50.7	2.00	194	387	438	438	100%	75-125%
802393	Arsenic	SW 6010B	mg/kg	0.00	2.00	194	387	387	387	100%	75-125%
802393	Barium	SW 6010B	mg/kg	55.0	2.00	194	387	442	453	103%	75-125%
802393	Beryllium	SW 6020A	mg/kg	0.00	5.00	1.94	9.68	9.68	10.3	107%	75-125%
802393	Cadmium	SW 6010B	mg/kg	7.93	2.00	194	387	395	377	95.3%	75-125%
802393	Chromium	SW 6010B	mg/kg	3410	10.0	190	1902	5312	5120	89.9%	75-125%
802393	Cobalt	SW 6010B	mg/kg	3.34	2.00	194	387	390	361	92.5%	75-125%
802393	Copper	SW 6010B	mg/kg	0.00	2.00	193.54	387.1	387	377	97.4%	75-125%
802393	Lead	SW 6010B	mg/kg	6.12	2.00	194	387	393	330	83.7%	75-125%
802393	Manganese	SW 6010B	mg/kg	346	2.00	194	387	733	700	91.4%	75-125%
802393	Mercury	SW 6020A	mg/kg	0.123	5.00	0.387	1.94	2.06	1.86	89.6%	75-125%
802393	Molybdenum	SW 6010B	mg/kg	5.52	2.00	194	387	393	379	96.6%	75-125%
802393	Nickel	SW 6010B	mg/kg	9.21	2.00	194	387	396	365	91.8%	75-125%
802393	Selenium	SW 6010B	mg/kg	0.00	2.00	194	387	387	344	88.8%	75-125%
802393	Silver	SW 6010B	mg/kg	0.00	5.00	190	951	951	908	95.5%	75-125%
802393	Thallium	SW 6010B	mg/kg	0.00	2.00	194	387	387	328	84.8%	75-125%
802393	Vanadium	SW 6010B	mg/kg	39.4	2.00	194	387	426	423	99.2%	75-125%
802393	Zinc	SW 6010B	mg/kg	56.5	2.00	194	387	444	463	105%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Accuracy

for Mona Nassimi, Manager Analytical Services



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Dry Weight Calculations

Date Calculated: 8/5/2012

	Sample Result Wet Weight mg/kg	Dilution Factor	% Moisture %	Sample Result Dry* Weight mg/kg	Reported Value mg/kg	Reporting Limit Wet Weight mg/kg	Reporting Limit Dry Weight mg/kg
Fluoride	11.223		51.4	23.0693	23.1	2.00	4.11
Nitrate as N	7.550		51.4	15.5193	15.5	4.00	8.22
Hexavalent Chromium	11.7898		51.4	24.2344	24.2	4.0323	8.29
Hexavalent Chromium - MS	132.2854		51.4	271.918	272	10.1215	20.8
Hexavalent Chromium - IMS	1110.252		51.4	2282.167	2280	39.6825	81.6
Hexavalent Chromium - PDMS	115.6494		51.4	237.722	238	10.0806	20.7
QC analyzed on 802613-3							
Hexavalent Chromium	ND		0	ND	, ND	1.9763	1.98
Hexavalent Chromium - Dup	ND		0	ND.	ND	1.9608	1.96
Antimony	24.65	2.00	51.4	50.6691	50.7	0.9580	2.00
Arsenic	ND	2.00	51.4	ND	ND	0.9580	1.97
Barium	26.74	2.00	51.4	54.96516	55.0	0.9580	1.97
Beryllium	0.0216	5.00	51.4	0.0443	ND	0.2395	1.00
Cadmium	3.856	2.00	51.4	7.9262	7.93	0.9580	1.97
Chromium	1659	10.0	51.4	3410.1420	3410	4.6258	9.51
Cobalt	1.624	2.00	51.4	3.3382	3.34	0.9580	1.97
Copper	ND	2.00	51.4	ND	ND	0.9580	1.97
Lead	2.979	2.00	51.4	6.1235	6.12	0.9580	1.97
Manganese	168.3	2.00	51.4	345.9475	346	0.9580	1.97
Mercury	0.05993	5.00	51.4	0.12319	0.123	0.0479	0.100
Molybdenum	2.687	2.00	51.4	5.5232	5.52	0.9580	1.97
Nickel	4.479	2.00	51.4	9.2068	9.21	0.9580	1.97
Selenium	ND	2.00	51.4	ND	ND	0.9580	1.97
Silver	ND	5.00	51.4	ND	ND	2.3129	4.75
Thallium	ND	2.00	51.4	ND	ND	0.9580	2.00
Vanadium	19.15	2.00	51.4	39.3636	39.4	0.9580	1.97
Zinc	27.50	2.00	51.4	56.5274	56.5	0.9580	2.00

Sample Result in Dry Weight = [Sample_{ww} / (100-%Moisture)]*100

where

Sample_{ww} = Sample result in wet weight



TOTAL SOLIDS BY SM 2540 B

Date of Analysis:

07/05/12

Analytical Batch: 07SOLID12A Oven Temp, °C: 105

Lab No.	Dish Number	Weight of dish,	Wt of wet sample, g	Wt of wet sample+ dish,	Wt of dried residue+dish,g	Wt of dried residue, g	% Total Solids	% Moisture
802393	1	1.3303	2.0436	3.3739	2.3245	0.9942	48.649	51.351
802393D	2	1.3253	2.044	3,3693	2.3001	0.9748	47 691	52,309
						M. De Common II.		
				<u> </u>		edicularios orientes		
						AND THE RESERVE OF THE PARTY OF		
							1	

	Relat	ive Percent Difference	
Sample ID	Sample	Sample Dup	RPD
802393	51.351	52.309	1.8

% Total Solids =

 $\frac{(A-B)*100}{C-B}$ =

Weight of dried residue x 100
Weight of wet sample

Where:

A = Weight of dried Residue + Dish, g

B = Weight of dish, g

C = Weight of wet sample + Dish, g

G. Savani Analyst Name

Analyst-Signature

Reviewe Wame

Reviewer Signature

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-WDR-368] **902393**

TURNAROUND TIME 10 Days

DATE 07/02/12 PAGE 1 OF 1

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COMPANY	CH2M HILL / E2	2					$\overline{}$	$\overline{}$	/.	\$/	7	$\overline{}$	/	7	7	$\overline{}$	$\overline{}$	$\overline{}$	7		$\overline{//}$	COMMENTS
PROJECT NAME	PG&E Topock I	M3							/Ns											//		COMMENTO
PHONE	530-229-33	03 F	-ax _530	-339-3303		/	/ /	/ /	(includes Mc.	/	/ /	/ /	/ ,	/ /	/ /	/ /	/ /	/ ,	/ ,	/ /_	/	
ADDRESS	155 Grand Ave					2	, /	1 (V /											WER.	/	
	Oakland, CA 94	612				/ ≥) / s	} / ˈəˈə	5/	15	/		/	/		/	/		/	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
P.O. NUMBER	424973.01.DM	A 11	1	NOME OF THE PERSON NAMED IN COLUMN NAMED IN CO	/	Bioass. 1300.0) F. NO3	Metals (Cr6 (716010B) Title 3	/ /	(6010B) Mn	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	THER OF CONTAINERS		
SAMPLERS (SIGNA	ATURE	120				Ø/.	16 / j	Cre (7.12)	$\frac{6}{6}$	<u>@</u> /										$\frac{3}{2}$		
										?/												
SAMPLE I.D.		DATE	TIME	DESCRIPTION	14	(8)	/ ≥	/ 5	/ 🔻		/		<u> </u>					<u> </u>	<u> </u>	<i></i>		
SC-Sludge	-WDR-368	07/02/12	1315	Sludge	Х	Χ	X	Х	Х									٠	4			
			į.																			
() The Contraction of the Contra	A Processing		- Compress																			
		Secretary B contrast					.	vi i	0		$\triangle M$				ã.							
	evel II	IQC					e en e		9 45	E.	4 4			SE								
house the second			There is a second		<i>E</i>)5	7	"Ul	District Control	/* <u>.</u>	h pu		16						4	TOTAL	NUMBER	OF CONTAINERS

	CHAIN OF CUSTODY SI	SAMPLE CONDITIONS					
Signature (Relinquished)	Printed AIDL ⁵	Company/CHZMHIII	Date/ 7-2-12 Time /3/5	RECEIVED COOL ₩ WARM □ 4.3° €			
Signature (Received) B. Dayaq	Printed Name <i>B · OAYAG</i>	Company/ Agency <i>FLJ</i>	Date/ 7 2512 Time 1530	CUSTODY SEALED YES NO I			
Signature (Relinquished) B D ayaq	Printed Name B. DAYAG	Company// Agency //	Date/ アー	SPECIAL REQUIREMENTS:			
Signature (Received) Audia	Printed I Aleurana Name Thakeurana	Company/ Agency	Date/ Time #/2/12 &piys				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ / Time				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				

Turbidity/pH Check

		Tu	rbidity/pH C	heck		
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 2320	<1	>2	6-27-12	BE	yes	3010 A Yes 8:30 A.
80 23 19 (1-11)	_e <1	>2			No	xes lated AM
002323	71	₹2			yes	30 laA
80 23 29L10-12)	<u>۲۱</u>	>2	6-28-12	BC	No	xes 8:00 AM
802331 (5-6)	1	J			1	
802335		<2			*es	3010 A
802345	> 1	72			1	Ves 14:30
802355(1,2)	۲۱	<2	6-29-12	BE	xeS	30104
8 0 2 356(1,2)	1					
802357						
80236161-16)					No	NO
8023626-60	1				i	
802362-7		72				
802363 (1-3)		1				
802364(1-30)						
\$02374	<u>∀</u> >1	<u>√</u> z	7-2-12	BE	16	30 1071
805384(1,52)		72	B-2-(2	1	N/C	yes 15:00
801388	<i>√</i> < \ ≻ t		7-3-12	BE	xes	30101
802389		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7-3-12	1	703	30 (6)(
802392(1,2)	<u> </u>	v				1.00
80 2393	<1 50110	>2	 	-	res	JaFter Filts
			 		 	TTLC
802344-2	<u> </u>	<u> </u>			YES	Balan yes
8023981-1,3		<2 			-	
3.02395(1-3)		>2	+ +		l	V afte fit.
802403	<u> >:1</u>	<2 		·	ye5	30 le A
802404						
802405						
802406						
802407	+				<u> </u>	
80 240 0(17) 24)	≺ \	72			No	xes 15:10
8 5 2414(1-15)	4 1		7/4/12	KK:	NO	yes @ 4:30pm
802309	71	42	7-5-12	BE	yes	Belia
80 2410						
802411						
802412		<u> </u>)			
802423(1-4)	< \	72			No	XES 10:15 AM
802324(1-31	******			and the property of the second		engangkenga cangk ekking ar ang
802426 L6-7)						
30246411-51	〉し				yes	3010A Ves 15:00
802455	71	イ 2	7-6-12	BE	yes	3010A
802456	1	Ţ.				
902465(1-12)	<١	>2			No	Yes in H5
802468	7 (<u>₹</u> 2	1.		XCJ	3010A
202472	71	٧2	7-9-12	BE	yes	30 1c A
802474	1	1	1	-1		
802479(1-4)						
808480						
802481						
802482						
80.7487	<u> </u>	\	Ψ		V	

T , D



Sample Integrity & Analysis Discrepancy Form

Clien	t:E_&	Lab # <u>802393</u>
Date .	Delivered:0₹/02/12 Time:处/45 By: □Mail ÆF	ield Service □Clien
1.	Was a Chain of Custody received and signed?	⊠Yes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÞŅ/A
3.	Are there any special requirements or notes on the COC?	□Yes □No □N/A
	If a letter was sent with the COC, does it match the COC?	□Yes □No 戸Å/A
j.	Were all requested analyses understood and acceptable?	
).	Were samples received in a chilled condition? Temperature (if yes)? <u>ダと</u>	⊿4Yes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Ø Yes □No □N/A
•	Were sample custody seals intact?	□Yes □No ÆN/A
	Does the number of samples received agree with COC?	daYes □No □N/A
0.	Did sample labels correspond with the client 10/s?	AYes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □ Client	□Yes □No □N/A
<u>2.</u>	Were samples pH checked? pH =	□Yes □No ☑N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Д(Yes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH	ДYes □No □N/A
	Sample Matrix: □Liquid □Drinking Water □Ground V	
۱۸ بر	⊠Sludge □Soil □Wipe □Paint □Solid □	Other
5 .	Comments:	



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

Revision 1

August 6, 2012

E2 Consulting Engineers, Inc.

Mr. Shawn Duffy 155 Grand Ave., Suite 1000 Oakland, California 94612

Project: PG&E Topock Project

Date Sampled: 7/2/12 Truesdail ID: 802393

Subject: Cross-reference Table for Subcontracted Analyses

Dear Mr. Duffy:

Bioassay 96hr Acute Toxicity requested for the referenced project were subcontracted to Aquatic Testing Laboratories. Please refer to the cross-reference table below for sample identifications.

Client ID	Truesdail ID	Aquatic Testing Labs
SC-Sludge-WDR-368	802393	A-12070501-001

The original subcontracted report is attached.

Please feel free to contact me at 714-730-6239 extension 200 should you have any questions.

Sincerely,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager Analytical Services

LABORATORY REPORT

Date:

July 10, 2012

Client:

Truesdail Laboratories, Inc.

14201 Franklin Avenue Tustin, CA 92780

Attn: Sean Condon



Adedicated to providing quality aquatic toxicity testing@

4350 Transport Street, Unit 107 Ventura, CA 93003

(805) 650-0546 FAX (805) 650-0756

CA DOHS ELAP Cert. No.: 1775

Laboratory No.:

A-12070501-001

Sample ID.:

802393

Sample Control:

The sample was received by ATL chilled and with the chain of custody record

attached.

Date Sampled:

07/02/12

Date Received:

07/05/12

Date Tested:

07/06/12 to 07/10/12

Sample Analysis:

The following analyses were performed on your sample:

CCR Title 22 Fathead Minnow Hazardous Waste Screen Bioassay (Polisini & Miller 1988).

Attached are the test data generated from the analysis of your sample. All testing was

conducted under the direct supervision of Joseph A. LeMay.

Result Summary:

Sample ID.

Results

802393

PASS (LC50 > 750 mg/l)

Quality Control:

Reviewed and approved by:

Joseph A. LeMay

Laboratory Director

FATHEAD MINNOW HAZARDOUS WASTE **SCREEN BIOASSAY**

Aquatic Testing Laboratories

Lab No.: <u>A/2070501-w/</u>
Client/ID: <u>Truchda.'/ 802393</u>

TEST SUMMARY

Species: Pimephales promelas.

Fish weight (gm): av: 0.26; min: 0.21; max: 0.30.

Reference Toxicant: SDS conducted monthly.

Test chamber volume: 10 liters.

Temperature: 20 +/- 2°C.

Aeration: none, unless D.O. drops below 5.0 mg/l.

Number of replicates: 2.

Dilution water: Soft reconstituted water (40-48 mg/l CaCO₃).

Source: In-Lab Culture. Regulations: CCR Title 22.

Test Protocol: California F&G/DHS 1988.

Endpoints: Survival at 96 hrs.

Test type: Static. Feeding: None.

Number of fish per chamber: 10. Photoperiod: 16/8 hrs light/dark.

TEST DATA

	IN	ITIA	L	24 Hr			48 Hr				72 Hr				96 Hr				
Date/Time:	Date/Time: 7-6-/2 1/30		1/30	7-7-12 (130		7-8-12 1170		7-9-	7-9-12 1000			7-10-12 110			00				
Analyst:	2		2	2		7			L. 4.			L.∀.							
Analyst.	°C	DO	pН	°C	DO	pН	# D	°C	DO	pН	# D	°C	DO	pН	# D	۰C	DO	pН	# D
Control A	22.0	8.7	81	که. بی	6.3	8.1	0	Zo. 6	5.7	27	0	20.4	8.6	7.6	0	20.6	8.8	7.8	0
Control B	<i>≥o.</i> 0	8.7	8,2	≥ 0. §	7.0	8.1	0	2n 6	6.7	27	0	20.4	8.3	7.6	0	20.7	8.3	7.8	0
400 mg/l A	20.0	l	1		75	8.0	1	ъ. 7	6.6	26	0	20.4	8.3	7.6	0	20.7	8.2	7.7	0
400 mg/l B	20.0	8.9	8.2	æ. Ş	7.5	8.0	0	8.7	6.3	26	0	20.4	8.6	7.7	0	20.8	8.6	7.7	0
750 mg/l A	کيه	1	8.2	1	7.5	8.1	0	<i>b</i> . 7	6.5	7.7	0	20.4	8.8	7.9	0	20.8	8.7	7.8	0
750 mg/l B	20.0	8.9	82	હે. દુ	8.0	8.1	0	ઢ ઠ	6.7	7.8	0	20.4	8.3	7.9	0	20.6	8.4	7.8	0

Comments:

Extraction method: Mechanical shaking _____. None (aqueous solution)

Dissolved Oxygen (DO) readings in mg/l O2. Test Aerated: Yes / No

		CONT	ROL		HIGH CONCENTRATION								
	Alk	alinity Hardness			All	kalinity	Ha	rdness					
Initial	32	31 mg/l CaCO ₃ 46		mg/l CaCO ₃	31	mg/l CaCO ₃	47	mg/l CaCO3					
Final	32	mg/l CaCO₃	46	mg/l CaCO ₃	36	mg/l CaCO ₃	72	mg/l CaCO ₃					

Total Number Dead											
Control	0	/20									
400 mg/l	1	/20									
750 mg/l	0	/20									

	RESULTS (the checked result applies based on fish survival rates)									
	PASSED	LC50 > 750 mg/l (<40% dead in 750 mg/l conc.)								
NA	FAILED	≥40% dead in 750 mg/l (close to passing - definitive test recommended)								
MA	FAILED	LC50 < 400 mg/l (>60% dead in 400 mg/l conc.)								





Date: 07/03/121 Page: 1 of 1

Laboratory: Aquatic Testing Laboratories

Attention: Joe LeMay

Received by:

Address: 4350 Transport St. #107, Ph#:805-650-0546

City: Ventura State: CA Zip: 93003

Laboratory Transmittal Form

Please sign, date & return this form with the results, to:

TRUESDAIL LABORATORIES, INC.

Altn: Sean Condon

14201 Franklin Avenue, Tustin, California 92780

Please include Truesdail Sample ID on your invoice

				Tests/Methods Required	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
Sample ID	Date	Time	Matrix	Acute Aquatic Toxicity, 96 hr Acute (Bioassay)	Container Otv.	Comments/Container Type
802393	7/2/12	13:15	Sludge	x	1	4 oz /Glass
						Level III
						Containers Total
X Normal (T	<u>AT)</u>		rice: H (5 day TAT) ults needed by	Received on Ice? Yes Special Shipme		ons: Sealed? Yes/ <u>No</u> orage Requirements;
Relinguished	hv-	Luda Sh	shunina	Luda Shahunina	TII	07/03/42 14-30

Printed Name

Printed Name

Company

Dale

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EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE TUSTIN, CALIFORNIA 92780-7008

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

August 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-WDR-368 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 802394

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-368 project groundwater monitoring. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on July 2, 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 total metals for samples SC-700B-WDR-368 and SC-100B-WDR-368 were analyzed by EPA 200.8 and EPA 200.7 with Mr. Shawn Duffy's approval.

Due to matrix interference, the results for Total Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Mercury, Silver, and Thallium for sample SC-701-WDR-368 were reported as non-detect with reporting limits that exceeded the contract required detection limits.

The matrix spike recovery (81%) for Nitrite by SM 4500-NO2 B was outside the QAPP acceptance limits of 85% - 115% but within the method acceptance limits of 75% - 125%. When this was discovered, the samples were already past the method specified holding time; therefore, they were not re-analyzed. All other QA/QC were within acceptable limits. The analyst has been instructed to check all recoveries against QAPP acceptance limits at the time of analysis.

No other violations or nonconformance 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.

4 - Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING

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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: Three (3) Groundwaters Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Date: August 8, 2012 Collected: July 2, 2012 Received: July 2, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Melissa Scharfe
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor / Bita Emami
FPA 218.6	Hexavalent Chromium	Maksin Gorbunov / Himani Vaishnav

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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.: 424973.01.DM **P.O. No.:** 424973.01.DM

Laboratory No.: 802394
Date Received: July 2, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802394-001	SC-700B-WDR-368	E120.1	NONE	7/2/2012	13:00	EC	7210	umhos/cm	2.00
	SC-700B-WDR-368	E200.7	NONE	7/2/2012	13:00	Aluminum	ND	ug/L	50.0
802394-001		E200.7 E200.7	NONE	7/2/2012	13:00	BORON	1030	ug/L	200
802394-001	SC-700B-WDR-368			7/2/2012	13:00	Iron	ND	ug/L	20.0
802394-001	SC-700B-WDR-368	E200.7	NONE						10.0
802394-001	SC-700B-WDR-368	E200.7	NONE	7/2/2012	13:00	Zinc	ND	ug/L	
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Antimony	2.7	ug/L	2.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Arsenic	ND	ug/L	1.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Barium	12.1	ug/L	5.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Chromium	ND	ug/L	1.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Copper	ND	ug/L	5.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Lead	ND	ug/L	1.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Manganese	1.3	ug/L	0.50
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Molybdenum	22.7	ug/L	2.0
802394-001	SC-700B-WDR-368	E200.8	NONE	7/2/2012	13:00	Nickel	ND	ug/L	2.0
802394-001	SC-700B-WDR-368	E218.6	LABFLT	7/2/2012	13:00	Chromium, Hexavalent	ND	ug/L	0.20
802394-001	SC-700B-WDR-368	E300	NONE	7/2/2012	13:00	Fluoride	2.10	mg/L	0.500
802394-001	SC-700B-WDR-368	E300	NONE	7/2/2012	13:00	Nitrate as N	2.92	mg/L	1.00
802394-001	SC-700B-WDR-368	E300	NONE	7/2/2012	13:00	Sulfate	496	mg/L	12.5
802394-001	SC-700B-WDR-368	SM2130B	NONE	7/2/2012	13:00	Turbidity	ND	NTU	0.100
802394-001	SC-700B-WDR-368	SM2540C	NONE	7/2/2012	13:00	Total Dissolved Solids	4020	mg/L	250
802394-001	SC-700B-WDR-368	SM4500NH3D	NONE	7/2/2012	13:00	Ammonia-N	ND	mg/L	0.500
802394-001	SC-700B-WDR-368	SM4500NO2B	NONE	7/2/2012	13:00	Nitrite as N	ND	mg/L	0.0050

005

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.



		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
802394-002	SC-100B-WDR-368	E120.1	NONE	7/2/2012	13:25	EC	7640	umhos/cm	2.00
802394-002	SC-100B-WDR-368	E200.7	NONE	7/2/2012	13:25	Aluminum	ND	ug/L	50.0
802394-002	SC-100B-WDR-368	E200.7	NONE	7/2/2012	13:25	BORON	1070	ug/L	200
802394-002	SC-100B-WDR-368	E200.7	NONE	7/2/2012	13:25	Iron	ND	ug/L	20.0
802394-002	SC-100B-WDR-368	E200.7	NONE	7/2/2012	13:25	Zinc	ND	ug/L	10.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Antimony	ND	ug/L	2.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Arsenic	3.3	ug/L	1.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Barium	26.3	ug/L	5.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Chromium	748	ug/L	1.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Copper	ND	ug/L	5.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Lead	ND	ug/L	1.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Manganese	4.3	ug/L	0.50
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Molybdenum	23.3	ug/L	2.0
802394-002	SC-100B-WDR-368	E200.8	NONE	7/2/2012	13:25	Nickel	ND	ug/L	2.0
802394-002	SC-100B-WDR-368	E218.6	LABFLT	7/2/2012	13:25	Chromium, Hexavalent	797	ug/L	10.0
802394-002	SC-100B-WDR-368	E300	NONE	7/2/2012	13:25	Fluoride	2.48	mg/L	0.500
802394-002	SC-100B-WDR-368	E300	NONE	7/2/2012	13:25	Nitrate as N	2.99	mg/L	1.00
802394-002	SC-100B-WDR-368	E300	NONE	7/2/2012	13:25	Sulfate	522	mg/L	12.5
802394-002	SC-100B-WDR-368	SM2130B	NONE	7/2/2012	13:25	Turbidity	ND	NTU	0.100
802394-002	SC-100B-WDR-368	SM2540C	NONE	7/2/2012	13:25	Total Dissolved Solids	4530	mg/L	250
802394-002	SC-100B-WDR-368	SM4500NH3D	NONE	7/2/2012	13:25	Ammonia-N	ND	mg/L	0.500
802394-002	SC-100B-WDR-368	SM4500NO2B	NONE	7/2/2012	13:25	Nitrite as N	ND	mg/L	0.0050



Revision 1; August 10, 2012

		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
802394-003	SC-701-WDR-368	E120.1	NONE	7/2/2012	13:15	EC	48200	umhos/cm	2.00
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Antimony	ND	ug/L	50.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Arsenic	ND	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Barium	105	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Beryllium	ND	ug/L	100
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Cadmium	ND	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Chromium	ND	ug/L	50.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Copper	ND	ug/L	100
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Manganese	10.8	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Molybdenum	156	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Nickel	ND	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Selenium	31.3	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Silver	ND	ug/L	50.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Thallium	ND	ug/L	20.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Vanadium	35.2	ug/L	10.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Zinc	ND	ug/L	10.0
802394-003	SC-701-WDR-368	E200.8	NONE	7/2/2012	13:15	Cobalt	ND	ug/L	5.0
802394-003	SC-701-WDR-368	E200.8	NONE	7/2/2012	13:15	Lead	ND	ug/L	5.0
802394-003	SC-701-WDR-368	E200.8	NONE	7/2/2012	13:15	Mercury	ND	ug/L	1.0
802394-003	SC-701-WDR-368	E218.6	LABFLT	7/2/2012	13:15	Chromium, Hexavalent	ND	ug/L	2.0
802394-003	SC-701-WDR-368	E300	NONE	7/2/2012	13:15	Fluoride	17.4	mg/L	0.500
802394-003	SC-701-WDR-368	SM2540C	NONE	7/2/2012	13:15	Total Dissolved Solids	34000	mg/L	1250

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.

EXCELLENCE IN INDEPENDENT TESTING



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Printed 8/10/2012

Laboratory No. 802394

Revised

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:

Field ID

Samples Received on	7/2/2012 8:45:0	0 PM		
	Lab ID	Collected	Matrix	
	802394-001	07/02/2012 13:00	Water	

SC-700B-WDR-368 Water 802394-002 07/02/2012 13:25 SC-100B-WDR-368 Water 07/02/2012 13:15 802394-003 SC-701-WDR-368

Anions By I.C EPA 300.0		Batch 07AN12B				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Fluoride	mg/L	07/03/2012 11:46	5.00	0.155	0.500	2.10
Nitrate as Nitrogen	mg/L	07/03/2012 11:46	5.00	0.135	1.00	2.92
Sulfate	mg/L	07/03/2012 14:26	25.0	2.85	12.5	496.
802394-002 Fluoride	mg/L	07/03/2012 11:58	5.00	0.155	0.500	2.48
Nitrate as Nitrogen	mg/L	07/03/2012 11:58	5.00	0.135	1.00	2.99
Sulfate	mg/L	07/03/2012 14:37	25.0	2.85	12.5	522.
802394-003 Fluoride	mg/L	07/03/2012 12:09	5.00	0.155	0.500	17.4

Method Blank						
Parameter	Unit	ÐF	Result			
Chloride	mg/L	1.00	ND			
Fluoride	mg/L	1.00	ND			
Sulfate	mg/L	-1.00	ND			
Nitrate as Nitrogen	mg/L	1.00	ND			
Duplicate						Lab ID = 802384-004
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	10.0	24.0	24.4	1.83	0 - 20
Sulfate	mg/L	10.0	13.6	13.8	1.81	0 - 20

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Client: E2 Consulting Engi	neers, Inc.		ject Name: ject Number:	PG&E Topock Pro 424973.01.DM	_	Page 2 of 38 Printed 8/8/2012
Duplicate						Lab ID = 802394-002
Parameter Fluoride	Unit mg/L	DF 5.00	Result 2.42	Expected 2.48	RPD 2.61	Acceptance Range 0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.03	2.99	1.46	0 - 20
Lab Control Sample						
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.99	Expected 4.00	Recovery 99.8	Acceptance Range 90 - 110
Fluoride	mg/L	1.00	4.16	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.3	20.0	102.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.07	4.00	102.	90 - 110
Matrix Spike						Lab ID = 802384-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	10.0	63.6	64.4(40.0)	98.1	85 - 115
Sulfate	mg/L	10.0	34.8	33.8(20.0)	105.	85 - 115
Matrix Spike						Lab ID = 802394-002
Parameter Fluoride	Unit mg/L	DF 5.00	Result 23.0	Expected/Added 22.5(20.0)	Recovery 102.	Acceptance Range 85 - 115
Nitrate as Nitrogen	mg/L	5.00	23.8	23.0(20.0)	104.	85 - 115
MRCCS - Secondary	ji sa					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.99	4.00	99.8	90 - 110
Fluoride	mg/L	1.00	4.16	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.3	20.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.06	4.00	102.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.89	3.00	96.4	90 - 110
MRCVS - Primary			talia di salah dari dari dari dari dari dari dari dari	Andrew Constitution and Section 1		
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.89	3.00	96.2	90 - 110
MRCVS - Primary						
Parameter Chloride	Unit mg/L	DF 1.00	Result 2.92	Expected 3.00	Recovery 97.4	Acceptance Range 90 - 110
	ing/L					
MRCVS - Primary	1960/64/7 of	DE	Pocult	Expected	Recovery	Acceptance Range
Parameter Fluoride	Unit mg/L	DF 1.00	Result 3.10	Expected 3.00	103.	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Nitrite SM 4500-NO2	В		Batch	07NO212A			
Parameter		Unit	Anal	yzed D	F MDL	RL	Result
802394-001 Nitrite as Nitr	rogen	mg/L	07/03	/2012 15:26 1.0	0.000540	0.0050	ND
802394-002 Nitrite as Nitr	rogen	mg/L	07/03	/2012 15:27 1.0	0.000540	0.0050	ND
Method Blank							as falls
Parameter	Unit	DF	Result				
Nitrite as Nitrogen	mg/L	1.00	ND				
Duplicate						Lab ID = 8	302383-024
Parameter	Unit	DF	Result	Expected	RPD	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20	
Lab Control Samp	le -						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0375	0.0400	93.8	90 - 110	
Matrix Spike						Lab ID = 8	302383-019
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0224	0.0262(0.0200)	81.0	85 - 115	
MRCCS - Second	ary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200	98.0	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0210	0.0200	105	90 - 110	



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Specific Conductivi	ty - EPA 120.1		Batch	07EC12H				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802394-001 Specific Co	nductivity	umhos	/cm 07/03	3/2012	1.00	0.116	2.00	7210
802394-002 Specific Co	nductivity	umhos	/cm 07/03	3/2012	1.00	0.116	0.116 2.00 70	
802394-003 Specific Co	nductivity	umhos	/cm 07/03	3/2012	1.00	0.116	2.00	48200
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	802394-003
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 48200	Expected 48200	F	RPD 0.00	Accepta 0 - 10	ance Range
Lab Control Sam	iple							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 699	Expected 706	F	Recovery 99.0	Accepta 90 - 110	ince Range)
MRCCS - Secon	dary							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 701	Expected 706	F	Recovery 99.3	Accepta 90 - 110	ince Range)
MRCVS - Primar	ý liky(blib bol d							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 980.	Expected 998	F	Recovery 98.2	Accepta 90 - 110	ince R a nge)



Client: E2 Consulting Engineers, Inc.

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Chrome VI by EPA 218.0	6		Batch	07CrH12B				
Parameter	militario de la companio de la comp	Unit	Analy	/zed	DF	MDL	RL	Result
802394-001 Chromium, Hex	avalent	ug/L	07/03/	2012 13:29	1.00	0.0250	0.20	ND
802394-002 Chromium, Hex	avalent	ug/L	07/03/2012 13:50		50.0	1.25	10.0	797.
802394-003 Chromium, Hex	avalent	ug/L	07/03/	2012 15:46	10.0	0.250	2.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	802392-001
Parameter	Unit	DF	Result	Expected	I	RPD	•	ince Range
Chromium, Hexavalent	ug/L	1.00	6.88	6.58		4.44	0 - 20	
Low Level Calibration	Nerification	Markana						
Parameter	Unit	DF	Result	Expected	I	Recovery	•	ince Range
Chromium, Hexavalent	ug/L	1.00	0.204	0.200		102.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	ı	Recovery	•	ince Range
Chromium, Hexavalent	ug/L	1.00	5.13	5.00		103.	90 - 110	
Matrix Spike							Lab ID =	802392-001
Parameter	Unit	DF	Result	Expected/Ad	ded l	Recovery	•	ince Range
Chromium, Hexavalent	ug/L	1.00	16.8	16.6(10.0)		102.	90 - 110	
Matrix Spike								802394-00 ⁻
Parameter	Unit	DF	Result	Expected/Ad	ded l	Recovery		ance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.11(1.00)		93.4	90 - 110	
Matrix Spike								802394-002
Parameter	Unit	DF	Result	Expected/Ad	ded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	50.0	1840	1800(1000)		104.	90 - 110	
Matrix Spike	o de la calentada de desta como como como como como como como com	ada opravite anti-disarense bara	ent order of the second of the	estados en la compansa de la compans		titili er Leistmanns og men sing gjerm	and the statement of the section of	802394-003
Parameter	Unit	DF	Result	Expected/Ad	ded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)		0.00	90 - 110	
Matrix Spike								802394-003
Parameter	Unit	DF	Result	Expected/Ad	ded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	10.0	11.0	11.2(10.0)		98.7	90 - 110	
Matrix Spike								802394-003
Parameter	Unit	DF	Result	Expected/Ad	ded	Recovery	-	ance Range
Chromium, Hexavalent	ug/L	5.00	5.64	6.21(5.00)		88.5	90 - 110	J

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Client: E2 Consulting Engineers, Inc.

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Metals by EPA 200.7, To	ital	Batch 071112A-Th2						
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802394-001 Aluminum		ug/L	07/11	/2012 13:41	1.00	7.00	10.0	ND
Boron		ug/L	07/11	/2012 13:41	1.00	2.30	200.	1030
Iron		ug/L	07/11	/2012 13:41	1.00	1.70	20.0	ND
Zinc		ug/L	07/11	/2012 13:41	1.00	4.60	10.0	ND
802394-002 Aluminum		ug/L	07/11	/2012 14:29	1.00	7.00	10.0	ND
Boron		ug/L	07/11	/2012 14:29	1.00	2.30	200.	1070
Iron		ug/L	07/11	/2012 14:29	1.00	1.70	20.0	ND
Zinc		ug/L	07/11	/2012 14:29	1.00	4.60	10.0	ND
802394-003 Molybdenum		ug/L	07/11	/2012 15:10	1.00	0.900	10.0	156.
Thallium		ug/L	07/11	/2012 15:10	1.00	4.10	10.0	ND
Zinc		ug/L	07/11	/2012 15:10	1.00	4.60	10.0	ND
Method Blank	eleka (j. 191	diffa s			What.			
Parameter	Unit	DF	Result					
Aluminum	ug/L	1.00	ND					
Iron	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Thallium	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Molybdenum	ug/L	1.00	ND					
Duplicate							Lab ID =	802394-003
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Aluminum	ug/L	1.00	ND	0.00		0	0 - 20	
fron	ug/L	1.00	ND	0.00		0	0 - 20	
Zinc	ug/L	1.00	ND	0.00		0	0 - 20	
Thallium	ug/L	1.00	ND	0.00		0	0 - 20	
Boron	ug/L	1.00	2640	2590		2.10	0 - 20	
Molybdenum	ug/L	1.00	158.	156		1.40	0 - 20	



Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 9 of 38

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Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	98.9	100.	98.9	85 - 115
Iron	ug/L	1.00	111.	100.	111.	85 - 115
Zinc	ug/L	1.00	109.	100.	109.	85 - 115
Thallium	ug/L	1.00	100.	100.	100.	85 - 115
Boron	ug/L	1.00	98.5	100.	98.5	85 - 115
Molybdenum	ug/L	1.00	101.	100.	101.	85 - 115
Matrix Spike						Lab ID = 802394-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1600	2000(2000)	79.8	75 - 125
Iron	ug/L	1.00	1530	2000(2000)	76.6	75 - 125
Zinc	ug/L	1.00	2240	2000(2000)	112.	75 - 125
Thallium	ug/L	1.00	1630	2000(2000)	81.3	75 - 125
Boron	ug/L	1.00	4400	4590(2000)	90.4	75 - 125
Molybdenum	ug/L	1.00	2130	2160(2000)	98.8	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5010	5000	100.	90 - 110
Iron	ug/L	1.00	5100	5000	102.	90 - 110
Zinc	ug/L	1.00	5220	5000	104.	90 - 110
Thallium	ug/L	1.00	4960	5000	99.3	90 - 110
Boron	ug/L	1.00	4920	5000	98.3	90 - 110
Molybdenum	ug/L	1.00	4790	5000	95.8	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4780	5000	95.5	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4850	5000	96.9	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5200	5000	104.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5300	5000	106.	90 - 110

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Metals by EPA 200.7, T	otal		Batch	072512A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802394-003 Arsenic		ug/L	07/25	5/2012 14:49	1.00	5.40	10.0	ND
Barium		ug/L	07/25	5/2012 14:49	1.00	5.20	10.0	105.
Cadmium		ug/L	07/25	5/2012 14:49	1.00	3.50	10.0	ND
Manganese		ug/L	07/25	5/2012 14:49	1.00	2.00	10.0	10.8
Nickel		ug/L	07/25	5/2012 14:49	1.00	2.00	10.0	ND
Selenium		ug/L	07/25	5/2012 14:49	1.00	4.70	10.0	31.3
Vanadium		ug/L	07/25	5/2012 14:49	1.00	2.10	10.0	35.2
Method Blank		e apply of Person	norii attiitus en on		n i jernasi		il attitus ar ar	
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Barium	ug/L	1.00	ND					
Cadmium	ug/L	1.00	ND					
Cobalt	ug/L	1.00	ND					
Nickel	ug/L	1.00	ND					
Selenium	ug/L	1.00	ND					
Lead	ug/L	1.00	ND					
Vanadium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	802394-003
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Arsenic	ug/L	1.00	ND	0.00		0	0 - 20	
Barium	ug/L	1.00	106.	105		1.42	0 - 20	
Cadmium	ug/L	1.00	ND	0.00		0	0 - 20	
Cobalt	ug/L	1.00	ND	0.00		0	0 - 20	
Nickel	ug/L	1.00	ND	0.00		0	0 - 20	
Selenium	ug/L	1.00	32.3	31.3		3.14	0 - 20	
Lead	ug/L	1.00	ND	0.00		0	0 - 20	
Vanadium	ug/L	1.00	35.2	35.2		0.00	0 - 20	
Manganese	ug/L	1.00	10.0	10.8		7.69	0 - 20	



Client: E2 Consulting Engineers, Inc.

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Total Control Control						
Lab Control Sample	nedski		.er	F 4 1		
Parameter	Unit	DF 1.00	Result 1960	Expected 2000	Recovery 97.9	Acceptance Range 85 - 115
Arsenic	ug/L		2070	2000	97.9 103.	85 - 115
Barium	ug/L	1.00		2000	99.6	85 - 115
Cadmium	ug/L	1.00	1990			
Cobalt	ug/L	1.00	1970	2000	98.4	85 - 115
Nickel	ug/L	1.00	1980	2000	99.0	85 - 115
Selenium	ug/L	1.00	1860	2000	92.9	85 - 115 85 - 415
Lead	ug/L	1.00	2040	2000	102.	85 - 115
Vanadium	ug/L	1.00	2050	2000	102.	85 - 115
Manganese	ug/L	1.00	2110	2000	106.	85 - 115
Matrix Spike						Lab ID = 802394-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	2310	2000(2000)	115.	75 - 125
Barium	ug/L	1.00	2110	2100(2000)	100.	75 - 125
Cadmium	ug/L	1.00	1820	2000(2000)	90.8	75 - 125
Cobalt	ug/L	1.00	1700	2000(2000)	85.0	75 - 125
Nickel	ug/L	1.00	1710	2000(2000)	85.6	75 - 125
Selenium	ug/L	1.00	2240	2030(2000)	110.	75 - 125
Lead	ug/L	1.00	1710	2000(2000)	85.6	75 - 125
Vanadium	ug/L	1.00	2020	2040(2000)	99.2	75 - 125
Manganese	ug/L	1.00	1930	2010(2000)	96.0	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Resuit	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	4850	5000	97.1	90 - 110
Barium	ug/L	1.00	4970	5000	99.5	90 - 110
Cadmium	ug/L	1.00	4910	5000	98.2	90 - 110
Cobalt	ug/L	1.00	4770	5000	95.4	90 - 110
Nickel	ug/L	1.00	4810	5000	96.2	90 - 110
Selenium	ug/L	1.00	4880	5000	97.6	90 - 110
Lead	ug/L	1.00	5240	5000	105.	90 - 110
Vanadium	ug/L	1.00	4920	5000	98.4	90 - 110
Manganese	ug/L	1.00	5080	5000	102.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	4930	5000	98.6	90 - 110



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Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.7,	Total		Batch	073012B-Th2				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
802394-003 Antimony		ug/L	07/30/	/2012 16:19 5	5.00	29.0	50.0	ND
Chromium		ug/L	07/30/	/2012 16:19 5	5.00	10.5	50.0	ND
Silver		ug/L	07/30/	/2012 16:19 5	5.00	8.00	50.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Antimony	ug/L	1.00	ND					
Silver	ug/L	1.00	ND					
Duplicate							Lab ID =	802394-003
Parameter	Unit	DF	Result	Expected	R	PD	•	ance Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Antimony	ug/L	5.00	ND	0.00		0	0 - 20	
Silver	ug/L	5.00	ND	0.00		0	0 - 20	
Lab Control Sample	e							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	2090	2000		104.	85 - 11	5
Antimony	ug/L	1.00	1900	2000		95.2	85 - 11	5
Silver	ug/L	1.00	2070	2000		103.	85 - 11	5
Matrix Spike							Lab ID =	802394-003
Parameter	Unit	DF	Result	Expected/Adde	ed R	ecovery	Accepta	ance Range
Chromium	ug/L	5.00	8590	10000(10000)		85.9	75 - 12	5
Antimony	ug/L	5.00	9810	10000(10000)		98.1	75 - 12	5
Silver	ug/L	5.00	10100	10000(10000)		101.	75 - 12	5
MRCCS - Seconda	ıry							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	5010	5000		100.	90 - 110)
Antimony	ug/L	1.00	4840	5000		96.7	90 - 110)
Silver	ug/L	1.00	5040	5000		101.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	5040	5000		101.	90 - 110)



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Batch 073112A-Th2 Metals by EPA 200.7, Total DF MDL RL Result Unit Analyzed Parameter 10.0 18.0 100. ND ug/L 07/31/2012 14:16 802394-003 Beryllium 07/31/2012 14:16 10.0 50.0 100. ND ug/L Copper Method Blank Unit DF Result Parameter ND ug/L 1.00 Beryllium ug/L 1.00 ND Copper Lab ID = 802394-003 Duplicate **RPD** Acceptance Range Unit DF Result Expected Parameter 0 - 20 ND 0.00 0 ug/L 10.0 Beryllium 0 0 - 200.00 ug/L 10.0 ND Copper Lab Control Sample Acceptance Range Unit DF Result Expected Recovery Parameter 102. 85 - 115 1.00 2040 2000 ug/L Beryllium 102. 85 - 1151.00 2050 2000 ug/L Copper Lab ID = 802394-003 Matrix Spike Expected/Added Recovery Acceptance Range Unit DF Result Parameter 20000(20000) 113. 75 - 125 22600 ug/L 10.0 Beryllium 75 - 125 20000(20000) 114. 10.0 22700 ug/L Copper MRCCS - Secondary Recovery Acceptance Range DF Expected Unit Result Parameter 98.8 90 - 110 4940 5000 ug/L 1.00 Beryllium 90 - 110 5000 98.6 1.00 4930 ug/L Copper MRCVS - Primary Acceptance Range Unit DF Result Expected Recovery Parameter 4800 5000 96.1 90 - 110 1.00 ug/L Beryllium MRCVS - Primary Acceptance Range Expected Recovery DF Result Unit Parameter 90 - 110 4880 5000 97.6 ug/L 1.00 Beryllium MRCVS - Primary Acceptance Range Recovery Unit DF Result Expected Parameter 90 - 110 4970 5000 99.3 ug/L 1.00 Beryllium MRCVS - Primary Recovery Acceptance Range DF Expected Unit Result Parameter 98.2 90 - 110 4910 5000 1.00 ug/L Copper

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 withen authorization from Truesdail Laboratories.



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Metals by EPA 200.8,	Total		Batch	071212B				
Parameter		Unit	Anal	yzed D	F	MDL	RL	Result
802394-001 Arsenic		ug/L	07/13/	/2012 01:45 1.	00	0.0530 0.50		ND
802394-002 Arsenic		ug/L	07/13/	/2012 01:52 1.	00	0.0530	0.50	3.3
Method Blank								
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Duplicate							Lab ID =	801751-003
Parameter	Unit	DF	Result	Expected	RI	PD	Acceptance Ra	
Arsenic	ug/L	5.00	ND	0.00	1	0	0 - 20	
Low Level Calibrati	on Verification							
Parameter	Unit	DF	Result	Expected		ecovery	•	ance Range
Arsenic	ug/L	1.00	0.217	0.200		108.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	•	ance Range
Arsenic	ug/L	5.00	102	100.		102	85 - 11	5
Matrix Spike							Lab ID =	801751-003
Parameter	Unit	DF	Result	Expected/Added	d R	ecovery	Accepta	ance Range
Arsenic	ug/L	5.00	463.	500.(500.)		92.6	75 - 12	5
Matrix Spike Duplic	cate						Lab ID =	801751-003
Parameter	Unit	DF	Result	Expected/Added	d R	ecovery	Accepta	ance Range
Arsenic	ug/L	5.00	452.	500.(500.)		90.5	75 - 12	5
MRCCS - Seconda	iry							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Arsenic	ug/L	1.00	10.1	10.0		101.	90 - 11	כ
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Arsenic	ug/L	1.00	10.1	10.0		101.	90 - 11) .
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Arsenic	ug/L	1.00	9.92	10.0		99.2	90 - 11)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	•	ance Range
Arsenic	ug/L	1.00	9.64	10.0		96.4	90 - 11)



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Metals by EPA 200.8, To	otal		Batch	070312A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
802394-001 Barium		ug/L	07/03/	/2012 13:45	5.00	0.205	5.0	12.1
Chromium		ug/L	07/03/	/2012 13:45	5.00	0.195	1.0	ND
Copper		ug/L	07/03/	/2012 13:45	5.00	0.235	5.0	ND
Manganese		ug/L	07/03	/2012 13:45	5.00	0.270	0.50	1.3
Nickel		ug/L	07/03	/2012 13:45	5.00	0.355	2.0	ND
802394-002 Barium		ug/L	07/03	/2012 14:00	5.00	0.205	5.0	26.3
Chromium		ug/L	07/03	/2012 14:00	5.00	0.195	1.0	748.
Copper		ug/L	07/03	/2012 14:00	5.00	0.235	5.0	ND
Manganese		ug/L	07/03	/2012 14:00	5.00	0.270	0.50	4.3
Nickel		ug/L	07/03	/2012 14:00	5.00	0.355	2.0	ND
Method Blank			o diffe.				i. Je satteda	ji Çiriya e
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Nickel	ug/L	1.00	ND					
Copper	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	801751-0
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Rang
Barium	ug/L	5.00	16.6	16.6		0.302	0 - 20	
Chromium	ug/L	5.00	27.6	27.7		0.325	0 - 20	
Nickel	ug/L	5.00	14.3	13.9		2.63	0 - 20	
Copper	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	28.0	27.6		1.51	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	-	ance Ran
Barium	ug/L	1.00	0.231	0.200		116.	70 - 13	
Chromium	ug/L	1.00	0.196	0.200		97.8	70 - 13	
Nickel	ug/L	1.00	0.217	0.200		109.	70 - 13	
Copper	ug/L	1.00	0.853	1.00		85.3	70 - 13	
Manganese	ug/L	1.00	0.105	0.100		105.	70 - 13	0



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Lab Control Sample						
	Unit	DF	Result	Expected	Recovery	Acceptance Range
Parameter Barium	ug/L	5.00	107	100.	107	85 - 115
Chromium	ug/L	5.00	103.	100.	103.	85 - 115
Nickel	ug/L	5.00	102.	100.	102.	85 - 115
Copper	ug/L	5.00	102.	100.	102.	85 - 115
Manganese	ug/L	5.00	100.	100.	100.	85 - 115
Matrix Spike						Lab ID = 801751-003
Telephone specificate in the search of the control	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Parameter Barium	ug/L	5.00	276.	267.(250.)	104.	75 - 125
Chromium	ug/L	5.00	288.	278.(250.)	104	75 - 125
Nickel	ug/L	5.00	262.	264.(250.)	99.4	75 - 125
Copper	ug/L	5.00	247.	250.(250.)	98.9	75 - 125
Manganese	ug/L	5.00	280.	278.(250.)	101.	75 - 125
Matrix Spike Duplicate		aradillari. A				Lab ID = 801751-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	270.	267.(250.)	101.	75 - 125
Chromium	ug/L	5.00	280.	278.(250.)	101.	75 - 125
Nickel	ug/L	5.00	256.	264.(250.)	97.0	75 - 125
Copper	ug/L	5.00	241.	250.(250.)	96.6	75 - 125
Manganese	ug/L	5.00	277.	278.(250.)	99.6	75 - 125
MRCCS - Secondary	ag. – Military	a aratan				
and programming deficient agreements of the control	Unit	DF	Result	Expected	Recovery	Acceptance Range
Parameter Barium	ug/L	1.00	10.3	10.0	103.	90 - 110
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110
Nickel	ug/L	1.00	9.97	10.0	99.7	90 - 110
Copper	ug/L	1.00	10.1	10.0	101.	90 - 110
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110
MRCVS - Primary	ug. =					
estation is taking an elimination for a contract of the second of the contract of	Unit	DF	Result	Expected	Recovery	Acceptance Range
Parameter Barium	ug/L	1.00	10.6	10.0	106.	90 - 110
MRCVS - Primary	ag. –	447				
Control of the contro	Unit	DF	Result	Expected	Recovery	Acceptance Range
Parameter Barium	ug/L	1.00	10.2	10.0	102.	90 - 110
	uy, L	7.50 7.50	4, 23. 	The second secon		
MRCVS - Primary	inadi e Parin.	ne tedétet i T	Docult	Expected	Recovery	Acceptance Range
Parameter	Unit	DF 1.00	Result 10.6	10.0	106.	90 - 110
Barium	ug/L	1.00	10.0	10.0	100.	•••••

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Printed 8/8/2012 Interference Check Standard AB Recovery Acceptance Range Expected DF Result Parameter Unit 10.0 100. 80 - 120 10.0 ug/L 1.00 Chromium Interference Check Standard AB Expected Recovery Acceptance Range DF Result Unit Parameter 96.1 80 - 120 9.61 10.0 ug/L 1.00 Chromium 101 80 - 120 10.0 ug/L 1.00 10.1 Nickel Interference Check Standard AB Acceptance Range Expected Recovery DF Result Unit Parameter 10.0 101. 80 - 120 10.1 ug/L 1.00 Nickel 10.0 100. 80 - 120 1.00 10.0 ug/L Copper Interference Check Standard AB Expected Recovery Acceptance Range DF Result Unit Parameter 80 - 120 10.1 10.0 101. ug/L 1.00 Copper Interference Check Standard AB Recovery Acceptance Range DF Expected Unit Result Parameter 10.0 96.3 80 - 120 ug/L 1.00 9.63 Manganese Interference Check Standard AB DF Expected Recovery Acceptance Range Result Unit Parameter 10.0 95.4 80 - 120 9.54 ug/L 1.00 Manganese Lab ID = 802394-002 Serial Dilution RPD Acceptance Range Expected DF Result Unit Parameter 26.3 8.55 0 - 1028.6 25.0 Barium ug/L 1.22 0 - 10748 25.0 739. ug/L Chromium



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Acceptance Range

75 - 125

75 - 125

75 - 125

Metals by EPA 200.8, To	ital		Batch	080612A			
Parameter		Unit	Anal	yzed D	F MC	L RL	Result
02394-001 Antimony		ug/L	08/06	/2012 14:50 1.	0.0840	2.0	2.7
Lead		ug/L	08/06	/2012 14:50 1.	0.0530	1.0	ND
Molybdenum		ug/L	08/06	/2012 14:50 1.	00 0.132	2.0	22.7
302394-002 Antimony		ug/L	08/06	/2012 14:57 1.	0.0840	2.0	ND
Lead		ug/L	08/06	/2012 14:57 1.	0.0530	1.0	ND
Molybdenum		ug/L	08/06	/2012 14:57 1.	00 0.132	2.0	23.3
Method Blank		34.14					
Parameter	Unit	DF	Result				
Antimony	ug/L	1.00	ND				
Lead	ug/L	1.00	ND				
Molybdenum	ug/L	1.00	ND				
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	•	ince Rang
Antimony	ug/L	1.00	2.23	2.00	111.	70 - 130	1
Lead	ug/L	1.00	0.815	1.00	81.5	70 - 130	
•	•	1.00 1.00	0.815 1.10	1.00 1.00	81.5 110.	70 - 130 70 - 130)
Lead	ug/L)
Lead Molybdenum Lab Control Sample	ug/L					70 - 130 v Accepta)) ince Rang
Lead Molybdenum Lab Control Sample Parameter	ug/L ug/L	1.00	1.10	1.00	110.	70 - 130)) ince Rang
Lead Molybdenum Lab Control Sample Parameter Antimony	ug/L ug/L Unit	1.00 DF	1.10 Result	1.00 Expected	110. Recovery	70 - 130 v Accepta)) ince Rang
Lead Molybdenum Lab Control Sample Parameter Antimony Lead	ug/L ug/L Unit ug/L	1.00 DF 5.00	1.10 Result 96.9	1.00 Expected 100.	110. Recovery 96.9	70 - 130 Accepta 85 - 115)) ince Ranç 5
Lead Molybdenum Lab Control Sample Parameter Antimony	ug/L ug/L Unit ug/L ug/L	1.00 DF 5.00 5.00	1.10 Result 96.9 93.0	1.00 Expected 100. 100.	110. Recovery 96.9 93.0	70 - 130 Accepta 85 - 115 85 - 115)) ince Ranç 5
Lead Molybdenum Lab Control Sample Parameter Antimony Lead Molybdenum	ug/L ug/L Unit ug/L ug/L	1.00 DF 5.00 5.00	1.10 Result 96.9 93.0	1.00 Expected 100. 100.	110. Recovery 96.9 93.0 90.0 d Recovery	70 - 130 Accepta 85 - 115 85 - 115 Lab ID = Accepta) ince Ranç 5 5 6 802674-00
Lead Molybdenum Lab Control Sample Parameter Antimony Lead Molybdenum Matrix Spike	ug/L ug/L Unit ug/L ug/L ug/L	1.00 DF 5.00 5.00 5.00	1.10 Result 96.9 93.0 90.0	1.00 Expected 100. 100.	110. Recovery 96.9 93.0 90.0 d Recovery 90.5	70 - 130 Accepta 85 - 115 85 - 115 Lab ID = Accepta 75 - 125) ince Rang 5 5 6 802674-0 ance Rang
Lead Molybdenum Lab Control Sample Parameter Antimony Lead Molybdenum Matrix Spike Parameter	ug/L ug/L Unit ug/L ug/L ug/L	1.00 DF 5.00 5.00 5.00	1.10 Result 96.9 93.0 90.0 Result	1.00 Expected 100. 100. 100. Expected/Adde	110. Recovery 96.9 93.0 90.0 d Recovery	70 - 130 Accepta 85 - 115 85 - 115 Lab ID = Accepta) ince Rang 5 5 6 802674-0 ance Rang

Result

92.9

89.9

114.

Expected/Added

100.(100.)

100.(100.)

27.7(10.0)

Recovery

92.9

89.9

967

DF

5.00

5.00

5.00

Unit

ug/L

ug/L

ug/L

Parameter

Antimony

Molybdenum

Lead



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Metals by EPA 200.8, T	otal		Batch	080612A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
802394-003 Cobalt		ug/L	08/06	/2012 15:59	5.00	0.270	5.0	ND
Lead		ug/L	08/06	/2012 15:59	5.00	0.265	5.0	ND
Mercury		ug/L	08/06/2012 15:59		5.00	0.120	1.0	ND
Method Blank		ALÍÁIS						
Parameter	Unit	DF	Result					
Cobalt	ug/L	1.00	ND					
Mercury	ug/L	1.00	ND					
Lead	ug/L	1.00	ND					
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accept	ance Range
Cobalt	ug/L	1.00	0.176	0.200		88.0	70 - 13	0
Mercury	ug/L	1.00	0.224	0.200		112.	70 - 13	0
Lead	ug/L	1.00	0.815	1.00		81.5	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accept	ance Range
Cobalt	ug/L	5.00	88.8	100.		88.8	85 - 11	5
Mercury	ug/L	5.00	19.3	20.0		96.6	85 - 11	5
Lead	ug/L	5.00	93.0	100.		93.0	85 - 11	5
Matrix Spike							Lab ID =	802674-001
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accept	ance Range
Cobalt	ug/L	5.00	91.6	100.(100.)		91.6	75 - 12	5
Mercury	ug/L	5.00	17.6	20.0(20.0)		88.0	75 - 12	5
Lead	ug/L	5.00	89.0	100.(100.)		89.0	75 - 12	5
Matrix Spike Duplic							Lab ID =	= 802674-001
Parameter	Unit	DF	Result	Expected/Add	led I	Recovery	Accept	ance Range
Cobalt	ug/L	5.00	91.8	100.(100.)		91.8	75 - 12	.5
Mercury	ug/L	5.00	18.0	20.0(20.0)		90.0	75 - 12	:5
Lead	ug/L	5.00	89.9	100.(100.)		89.9	75 - 12	.5
MRCCS - Secondar								
Parameter	Unit	DF	Result	Expected		Recovery		ance Range
Cobalt	ug/L	1.00	10.1	10.0		101.	90 - 11	0
Mercury	ug/L	1.00	2.06	2.00		103.	90 - 11	0
Lead	ug/L	1.00	10.2	10.0		102.	90 - 11	0



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Interference Check S	Standard A							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Lead	ug/L	1.00	ND	0.00				
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Cobalt	ug/L	1.00	9.63	10.0		96.3	80 - 120	
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ince Range
Cobalt	ug/L	1.00	9.08	10.0		90.8	80 - 120)
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery		ince Range
Mercury	ug/L	1.00	2.08	2.00		104.	80 - 120)
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Mercury	ug/L	1.00	2.12	2.00		106.	80 - 120)
Lead	ug/L	1.00	ND	0.00				
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Lead	ug/L	1.00	ND	0.00				
Total Dissolved Solids	by SM 2540	C	Batch	07TDS12A				
Parameter		Unit	Ana	ılyzed	DF	MDL	RL	Result
802394-001 Total Dissolved	Solids	mg/L	07/03	3/2012	1.00	0.757	250.	4020
802394-002 Total Dissolved		mg/L	07/03	3/2012	1.00	0.757	250.	4530
802394-003 Total Dissolved		mg/L	07/03	3/2012	1.00	0.757	1250	34000
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	802395-003
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	4410	4340		1.60	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	1	Recovery	•	ance Range
, aramotor			400	E00		00.6	00 - 110	1

498

1.00

mg/L

Total Dissolved Solids

500.

90 - 110

99.6



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Ammonia Nitrogen by SM4500-NH3D Batch 07NH312B RL Result Analyzed DF MDL Unit Parameter 0.00980 0.500 ND 07/09/2012 1.00 mg/L 802394-001 Ammonia as N 1.00 0.00980 0.500 ND 07/09/2012 mg/L 802394-002 Ammonia as N Method Blank DF Result Unit Parameter 1.00 ND mg/L Ammonia as N Lab ID = 802394-001 Duplicate DF Result Expected **RPD** Acceptance Range Unit Parameter 0 - 200 0.00 mg/L 1.00 ND Ammonia as N Lab Control Sample Acceptance Range Expected Recovery Unit DF Result Parameter 10.0 95.5 90 - 110 1.00 9.55 mg/L Ammonia as N Lab Control Sample Duplicate DF Expected Recovery Acceptance Range Result Unit Parameter 99.4 90 - 110 10.0 9.94 mg/L 1.00 Ammonia as N Lab ID = 802394-002 Matrix Spike Acceptance Range Expected/Added Recovery DF Result Parameter Unit 5.00 6.06(6.00) 82.4 75 - 1251.00 mg/L Ammonia as N Lab ID = 802394-002 Matrix Spike Duplicate DF Result Expected/Added Recovery Acceptance Range Unit Parameter 75 - 125 79.1 6.06(6.00) 1.00 4.80 mg/L Ammonia as N MRCCS - Secondary Acceptance Range Recovery Expected Unit DF Result Parameter 93.0 90 - 110 5.58 6.00 1.00 mg/L Ammonia as N MRCVS - Primary Expected Recovery Acceptance Range Unit DF Result Parameter 90 - 110 94.6 6.00 1.00 5.68 mg/L Ammonia as N



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Turbidity by SM 2130 E	Turbidity by SM 2130 B Batch 07TUC12A							
Parameter		Unit Analyzed			DF	MDL	RL	Result
802394-001 Turbidity		NTU	NTU 07/03/2012			0.0140	0.100	ND
802394-002 Turbidity		NTU	07/0	3/2012	1.00	0.0140	0.100	ND
Duplicate	onjägesenigge.						Lab ID =	802394-002
Parameter	Unit	DF	Result Expected		RPD		Acceptance Range	
Turbidity	NTU	1.00	ND	0.00	0		0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	7.87	8.00		98.4	90 - 110	
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	7.80 8.00			97.5	90 - 110	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 07TDS12A Date Analyzed: 7/3/12

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,	Reported Value, ppm	DF
Blank	100	110,7304	110.7307	110,7306	0.0001	No	0.0002	2.0	25.0	ND	1
802384-2	100	73.5955	73.6079	73.6078	0.0001	No	0.0123	123.0	25.0	123.0	1
802384-4	100	68.1954	68.2091	68.2089	0.0002	No	0.0135	135.0	25.0	135.0	1
802392-1	20	50.9562	51.0132	51.013	0.0002	No	0.0568	2840.0	125.0	2840.0	1
802392-2	10	50.9924	51.0430	51.0426	0.0004	No	0.0502	5020.0	250.0	5020.0	1
802394-1	10	47.9635	48.0041	48.0037	0.0004	No	0.0402	4020.0	250.0	4020.0	1
802394-2	10	51.0747	51.1202	51.12	0.0002	No	0.0453	4530.0	250.0	4530.0	1
802394-3	2	48.1385	48.2064	48.2064	0.0000	No	0.0679	33950.0	1250.0	33950.0	1
802395-1	10	49.3544	49.3977	49.3976	0.0001	No	0.0432	4320.0	250.0	4320.0	1
802395-2	10	49.0097	49.0504	49.0503	0.0001	No	0.0406	4060.0	250.0	4060.0	1
802395-3	10	51.4329	51.4767	51.4763	0.0004	No	0.0434	4340.0	250.0	4340.0	1
802395-3D	10	51.0540	51.0983	51.0981	0.0002	No	0.0441	4410.0	250.0	4410.0	1
LCS	100	110.3321	110.3823	110.3819	0.0004	No	0.0498	498.0	25.0	498.0	1
802400-17	50	74.7313	74.7719	74.7719	0.0000	No	0.0406	812.0	50.0	812.0	1
					<u> </u>						

Calculation as follows:

Where:

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

$$\left(\frac{A-B}{C}\right) x \ 1 \ 0^6$$

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

Laboratory Control Sample (LCS) Summary

Laboratory	Julia or Ja	Ilibie (FCO	Juillilary		
 QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	498	500	99.6%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Sample Sample Dup	% RPD	Acceptance	QC Within
Number Weight, g Weight, g		Limit	Control?
802395-3 0.0434 0.0441	0.8%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Hope T.

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 07TDS12A Date Analyzed: 7/3/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
		1		
802384-2	219	0.56	142.35	0.86
802384-4	239	0.56	155.35	0.87
802392-1	4920	0.58	3198	0.89
802392-2	8390	0.60	5453.5	0.92
802394-1	7340	0.55	4771	0.84
802394-2	7670	0.59	4985.5	0.91
802394-3	48500	0.70	31525	1.08
802395-1	7300	0.59	4745	0.91
802395-2	7310	0.56	4751.5	0.85
802395-3	7770	0.56	5050.5	0.86
802395-3D	7770	0.57	5050.5	0.87
LCS				
802400-17	1409	0.58	915.85	0.89
			<u> </u>	

A.

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-WDR-368]

TURNAROUND TIME DATE 07/02/12

10 Days

PAGE 1

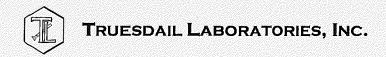
PHONE ADDRESS P.O. NUMBER	CH2M HILL /E2 PG&E Topock I 530-229-33 155 Grand Ave Oakland, CA 94 408401.01.DM	Ste 1000 4612	FAX 530	-339-3303		Title 22 Lab File	EC (1)	00.8, 24,5			- /	500-NH3, See List Below,		0.0) F, NO3 S	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(200.7) 14	NO2B)		COMMENTS
SAMPLERS (SIGNA	ATURE Man	DATE	TIME	DESCRIPTION	Cr(VI)	71the 25	EC (12	10S (25.1)	7urb (2,000)	Total 11.	Ammo	Anions (4500-NH3)	Anjon (300.0) F	70C (534.0) F, N	Total Max	NO2 (45 (200.7) M	(+500-NO2B)	NUMBE	
SC-700B-V	VDR-368	07/02/12	1300		Х		Х	Х	Χ	Х	Х		Х			Х		4	PU=2)
SC-100B-V	WDR-368	07/02/12			Х		Х	Х	Х	Х	Х		Х			Χ		4	DU=7 {metals
SC-701-W	DR-368	07/02/12	1315	44.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	Х	Х	Х	Х				Х			х			4	m = 2)
		7. 45			30	in the second se			O	1157 1259									J
Secretary and a secretary and	<u>velll</u>		-	56	1	12	İ		<u> </u>	10		J						12	TOTAL NUMBER OF CONTAINERS

	CHAIN OF CUSTODY S	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name How Phicips	Company/ Agency <i>Om</i> /	Date/ 7-2-12 Time (520	RECEIVED COOL ☑ WARM ☐ 4,3°€
Signature (Received) B. Dayae	Printed Name /3 · OAYAC	Company/ Agency TCJ	Date/ フ-2-/ フ Time <i>/</i> ら30	CUSTODY SEALED YES NO 🗹
Signature (Relinquished) B. D. OU. O.	Printed Name R = CAYAG	Company/ Agency TC/	Date/ 7-2-/2 Time 2045	SPECIAL REQUIREMENTS:
Signature (Received) Anda	Printed Gualeucists	Company/ &Agency 74_2	Date/ Time 4/2/12 20145	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
3 ignature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	,,,
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

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
6/1/12	801867-1	9.5	AN A	NA	N/A	MG
6/20/12	80 2226	7	2 m1	9.5	10:45 AM	HAV
6120112	80 2228-1	9.5	NIA	9.5	NIA	HAY
	-2	9.5			<u> </u>	
	-3	9.5	<u> </u>	1/	1	/
1 - 1	802335	9.5	NIA	9.5	NIA	HAV
6129112	802355-1	9:5	NIA	NIA	NIA	HAV
10	1, -2		-L	\mathcal{L}		<u> </u>
	802357	9.5	NIA	NIA	NIA	HAV
7/02/12	802392-I	7	2,001	9.5	9:00 AM	HAY
1	802394-1				9:15 AM	
7102/12	-2				9:30 AM	
<u></u>	-3		<u>_</u>		09:43 AM	<u> </u>
					-	
						-
	<u> </u>	<u> </u>				

			rbiaity/pH C	TICCK	·	
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 2320	< I	>2	6-27-12	BE	YC5	3010 A YES 8130 A
80 23 19 (1-11)	· <1	>2			No	x e5 10:00 AM
002323	71	₹2	J.		yes	30 10 A
80 23 29(10-12)		>2	6-28-12	BC-	No	xes 8:00 AM
802331 (5-6)		L		1		
802335		<2			xe5	3010 A
802345	>1	72			1	L xes in.3
80 2355(1,2)	ζ1	<2 ·	6-29-12	BI	×eS	30104
8 0 2356(1,2)	1		1	1		
802357						
80236161-16)					₩	NO
802362(2-60)					i	
		>2				
802362 - 7 802363 (1-3)		16				
802364(1-30)		∀ ₹ 2	7-2-12	<u>y</u>	16	301071
	71		B-2-12	BE	Yes	yes 15:00
802384(1842)	. < 1	.72	7 7 1	¥	N°C ×es	30101
	>1	<u>₹</u> 2	7-3-12	BE	725	2000
802389	<u> </u>	<u> </u>				1.5
802392(1,2)	<1 - \(\) \(\)	72			- Jr	& After filt
802393	Solio		1 1		Tres	TTLC
8c 2344-2	<u> </u>	> と			¥25	BaloA yes
8023921-193		<2				
8.02395(1-3)	1	>2	V	 	<u> </u>	afte filt.
802403	<u> ></u> :1	<2		·	¥45	Ba le A
802404						
802405						
802406						
802407					<u> </u>	4
80 240 0(17) 24)	≺ \	72			No	xes 15.00
8 5 2414(1-15)	<u> </u>	ンス	7/4/12	KK.	No	yes @ 4:30pm
802309	71	くて	7-5-12	BE	yes	Belin
80 2410						
802411	\	,				
802412)		1	
802423(1-4)	< \	72			No	XE5 10:15 AM
802324(1-31						
802426 (6-7)						
3024641-51	ンし				yes	3010A Ves 15 00
802455	71	₹2_	7-6-12	BE	yes	30 10A
802456	1	1	1			
90 2465L 1 - 12)	< \	>2			No	Yes 14:45
802468	7	₹2			XCT	3010A
302472	71	<u>ر ک</u>	7-9-12	BE	Yes	3 + 10 A
802474	1		1 1 1			
802479(1-4)			 			
808480					+ + + + + + + + + + + + + + + + + + + +	
802481						
					-	
802482	4		V	<u>\</u>	V	



Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E2</u>	Lab # _ \$02394
Date	e Delivered:0 <u>ナル</u> メ 112 Time: <u>& いり</u> By: ロMail 凶F	ield Service □Client
1.	Was a Chain of Custody received and signed?	ÆiYes □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 ÞÍN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ZiN/A
5 .	Were all requested analyses understood and acceptable?	
6 .	Were samples received in a chilled condition? Temperature (if yes)?५ <u>-১°C</u>	ŻYes □No □N/A
7 .	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Ā Yes □No □N/A
8.	Were sample custody seals intact?	□Yes □No Þ\/A
9.	Does the number of samples received agree with COC?	ØYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ØYes □No □N/A
1 1.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail Client	ØYes □No □N/A
12.	Were samples pH checked? pH = <u>See C. o. e.</u>	Yes \(\text{No} \(\text{N}/A \)
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	o⊉Yes □No □N/A
14.	Have Project due dates been checked and accepted? Tum Around Time (TAT): □ RUSH Ø Std	Q ^A Yes □No □N/A
5.	Sample Matrix: □Liquid □Drinking Water □Ground V	
	□Sludge □Soil □Wipe □Paint □Solid 次	Other Wall
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving: a	L Shabunine

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EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

July 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 IM3PLANT-WDR-369 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 802525

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-369 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on July 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 802525

Date: July 25, 2012

Collected: July 10, 2012 Received: July 10, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / Himani Vaishnav

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Laboratory No.: 802525

Date Received: July 10, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

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
802525-001	SC-700B-WDR-369	E120.1	NONE	7/10/2012	10:00	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids	7290	umhos/cm	2.00
802525-001	SC-700B-WDR-369	E200.8	NONE	7/10/2012	10:00		ND	ug/L	1.0
802525-001	SC-700B-WDR-369	E200.8	NONE	7/10/2012	10:00		1.6	ug/L	1.0
802525-001	SC-700B-WDR-369	E218.6	LABFLT	7/10/2012	10:00		ND	ug/L	0.20
802525-001	SC-700B-WDR-369	SM2130B	NONE	7/10/2012	10:00		ND	NTU	0.100
802525-001	SC-700B-WDR-369	SM2540C	NONE	7/10/2012	10:00		4160	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

Truesdail Laboratories, Inc.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Page 1 of 7

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

Printed 7/25/2012

Laboratory No. 802525

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:

Samples Received on 7/10/2012 9:00:00 PM

Collected Matrix Lab ID Field ID 07/10/2012 10:00 Water 802525-001 SC-700B-WDR-369 Batch 07EC12D Specific Conductivity - EPA 120.1 Result MDL RL DF Analyzed Unit Parameter 7290 1.00 0.116 2.00 07/13/2012 umhos/cm 802525-001 Specific Conductivity Method Blank Unit DF Result Parameter 1.00 ND umhos Specific Conductivity Lab ID = 802525-001Duplicate RPD Acceptance Range Expected DF Result Unit Parameter 0 - 107290 0.137 umhos 1.00 7300 Specific Conductivity Lab Control Sample Acceptance Range Expected Recovery Unit DF Result Parameter 90 - 110 706 100. 710. umhos 1.00 Specific Conductivity MRCCS - Secondary Acceptance Range Result Recovery Expected Unit DF Parameter 90 - 110 1.00 101. 712 706 umhos Specific Conductivity MRCVS - Primary Acceptance Range Recovery Unit DF Result Expected Parameter 97.2 90 - 110 998 970. 1.00 Specific Conductivity umhos

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 2 of 7 Printed 7/25/2012

Chrome VI by EPA 218.6

Batch 07CrH12D

Parameter		Unit	Anal	lyzed	DF	MDL	RL	Result
802525-001 Chromium, Hexa	valent	ug/L	07/14	/2012 19:15	1.00	0.0260	0.20	ND
Method Blank		·						
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	802497-003
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 12.4	Expected 12.4		RPD 0.00645	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.197	Expected 0.200		Recovery 98.7	Accepta 70 - 130	ance Range 0
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.92	Expected 5.00		Recovery 98.4	90 - 110	ance Range 0 802497-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 16.5	Expected/Ad 16.8(10.0)	lded	Recovery 97.7	90 - 110	ance Range 0 802497-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 17.1	Expected/Ad 17.4(10.0)	lded	Recovery 97.1	90 - 11	ance Range 0 : 802497-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 15.2	Expected/Ad 15.4(10.0)	lded	Recovery 97.5	90 - 11	ance Range 0 : 802497-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 15.2	Expected/Ac 15.5(10.0)	lded	Recovery 97.6	90 - 11	ance Range 0 : 802497-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 9.50	Expected/Ac 9.58(5.00)	lded	Recovery 98.5	90 - 11	ance Range 0 : 802497-007
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 14.9	Expected/Ac 15.2(10.0)	ided	Recovery 97.5	Accepta 90 - 11	ance Range 0



Client: E2 Consulting En	gineers, Inc		oject Name: oject Number	ject	Page 3 of 7 Printed 8/9/2012 Revised	
Matrix Spike						Lab ID = 802497-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.22	Expected/Added 7.26(5.00)	Recovery 99.1	Acceptance Range 90 - 110 Lab ID = 802497-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 16.3	Expected/Added 16.4(10.0)	Recovery 98.6	Acceptance Range 90 - 110 Lab ID = 802525-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.10	Expected/Added 1.11(1.00)	Recovery 99.5	Acceptance Range 90 - 110 Lab ID = 802525-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 5.02	Expected/Added 5.20(5.00)	Recovery 96.5	Acceptance Range 90 - 110 Lab ID = 802526-001
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.75	Expected/Added 9.67(5.00)	Recovery 102.	Acceptance Range 90 - 110
MRCCS - Secondary						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 4.94	Expected 5.00	Recovery 98.7	Acceptance Range 90 - 110
MRCVS - Primary						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.86	Expected 10.0	Recovery 98.6	Acceptance Range 95 - 105
MRCVS - Primary						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.97	Expected 10.0	Recovery 99.7	Acceptance Range 95 - 105
MRCVS - Primary						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.94	Expected 10.0	Recovery 99.4	Acceptance Range 95 - 105
MRGVS - Primary				de Goldensey – promision of the constitution o	Alffild amming a fire	. The first and amount of the public below the first of t
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.3	Expected 10.0	Recovery 103.	Acceptance Range 95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 4 of 7 Printed 7/25/2012

Metals by EPA 200.8, Tot		Batch	071212A			+					
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result			
802525-001 Chromium	•	ug/L	07/12	/2012 17:24 5	5.00	0.195	1.0	ND			
Manganese		ug/L	07/12	/2012 17:24 5	5.00	0.270	1.0	1.6			
Method Blank											
Parameter	Unit	DF	Result								
Chromium	ug/L	1.00	ND								
Manganese	ug/L	1.00	ND								
Duplicate							Lab ID =	802525-001			
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range			
Chromium	ug/L	5.00	ND	0.00		0	0 - 20				
Manganese	ug/L	5.00	1.62	1,65		2.14	0 - 20				
Low Level Calibration	Verification	1									
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range			
Chromium	ug/L	1.00	0.195	0.200		97.7	70 - 130				
Manganese	ug/L	1.00	0.205	0.200		102.	0				
Lab Control Sample											
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range			
Chromium	ug/L	5.00	93.8	100.		93.8	85 - 115				
Manganese	ug/L	5.00	94.8	100.		94.8	85 - 11	5			
Matrix Spike							Lab ID =	802525-001			
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range			
Chromium	ug/L	5.00	94.2	100.(100.)		94.2	75 - 12	5			
Manganese	ug/L	5.00	96.6	102.(100.)		95.0	75 - 12	5 '			
Matrix Spike Duplicate	€						Lab ID =	802525-001			
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range			
Chromium	ug/L	5.00	97.1	100.(100.)		97.1	75 - 12	5			
Manganese	ug/L	5.00	99.2	102.(100.)		97.5	75 - 12	5			
MRCCS - Secondary											
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range			
Chromium	ug/L	1.00	9.86 10.0			98.6	90 - 110				
Manganese	ug/L	1.00	.00 9.94 10.0			99.4	90 - 11	0			
MRCVS - Primary											
Parameter	Unit	DF	Result	Expected	Recovery		Accept	ance Range			
Chromium	ug/L	1.00	9.22	10.0		92.2	90 - 11	0			

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



Client: E2 Consulting Eng	ineers, Inc.		oject Name: oject Number	PG&E Topod : 424973.01.D	•	Page 6 of 7 Printed 7/25/2012			
Interference Check Sta	andard A								
Parameter Chromium Interference Check Sta	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range			
Parameter Manganese Interference Check Sta	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range			
Parameter Manganese Interference Check Sta	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range				
Parameter Chromium Interference Check Sta				Expected 10.0	Recovery 98.3	Acceptance Range 80 - 120			
Parameter Chromium Interference Check Sta	DF 1.00	Result 9.23	Expected 10.0	Recovery 92.3	Acceptance Range 80 - 120				
Parameter Manganese Interference Check Sta	Unit ug/L	DF 1.00	Result 9.82	Expected 10.0	Recovery 98.2	Acceptance Range 80 - 120			
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.36	Expected 10.0	Recovery 93.6	Acceptance Range 80 - 120			
Total Dissolved Solids b	v SM 2540	C	Batch	07TDS12C					
Parameter		Unit	Ana	lyzed	DF MDL	RL Result			
802525-001 Total Dissolved S	Solids	mg/L	07/13	/2012	1.00 0.757	250. 4160			
Method Blank									
Parameter Total Dissolved Solids Duplicate	i Dissolved Solids mg/L 1.		Result ND			Lab ID = 802528-008			
Parameter Total Dissolved Solids Lab Control Sample	solved Solids mg/L 1.00		Result 1020	Expected 1030	RPD 0.584	Acceptance Range 0 - 5			
Parameter Total Dissolved Solids	neter Unit DF Result				Recovery 99.8	Acceptance Range 90 - 110			

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 7 Printed 7/25/2012

Project Number: 424973.01.DM

Turbidity by SM 2130 B

Batch 07TUC12E

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result	
802525-001 Turbidity		NTU	07/11/2012		1.00	0.0140	0.100	ND	
Method Blank									
Parameter	Unit	DF	Result						
Turbidity	NTU	1.00	ND						
Duplicate							Lab ID =	802525-001	
Parameter	Unit	DF	Result Expected		F	RPD	Acceptance Range		
Turbidity	NTU	1.00	ND	0.00		0	0 - 20		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	8.05	8.00		101.	90 - 110)	
Lab Control Sample D	Ouplicate								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	8.03 8.00		100.		90 - 110)	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 07TDS12C Date Analyzed: 7/13/12

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	78.3822	78.3823	78.3823	0.0000	No	0.0001	1.0	25.0	ND	1
802525	10	51.4732	51.5148	51.5148	0.0000	No	0.0416	4160.0	250.0	4160.0	1
802526	20	51,4261	51.5015	51.5011	0.0004	No	0.0750	3750.0	125.0	3750.0	1
802528-1	50	50.9457	51.0495	51.0493	0.0002	No	0.1036	2072.0	50.0	2072.0	1
802528-2	50	50.9569	51.0571	51.0571	0.0000	No	0.1002	2004.0	50.0	2004.0	1
802528-3	50	48.1386	48.2405	48.2401	0.0004	No	0.1015	2030.0	50.0	2030.0	11
802528-4	50	50.9927	51.0505	51.0501	0.0004	No	0.0574	1148.0	50.0	1148.0	1
802528-5	50	51.2506	51.3820	51.3819	0.0001	No	0.1313	2626.0	50.0	2626.0	1
802528-6	50	49.0059	49.0579	49.0579	0.0000	No	0.0520	1040.0	50.0	1040.0	1
802528-7	50	49.3547	49.4059	49.4056	0.0003	No	0.0509	1018.0	50.0	1018.0	11
802528-8	50	75.3045	75.3565	75.3562	0.0003	No	0.0517	1034.0	50.0	1034.0	1
802528-8D	50	51.4322	51.4836	51.4834	0.0002	No	0.0512	1024.0	50.0	1024.0	1
LÇS	100	71.3294	71.3794	71.3793	0.0001	No	0.0499	499.0	25.0	499.0	1
802528-9	50	50.7019	50.7488	50.7488	0.0000	No	0.0469	938.0	50.0	938.0	1
802528-10	50	51.0763	51.1253	51,1251	0.0002	No	0.0488	976.0	50.0	976.0	1
802554-1	100	72.5706	72.6054	72.6054	0.0000	No	0.0348	348.0	25.0	348.0	1
802554-2	100	68.1044	68.1354	68.1352	0.0002	No	0.0308	308.0	25.0	308.0	1
802554-3	100	66.7132	66.7431	66.7427	0.0004	No	0.0295	295.0	25.0	295.0	1
802554-4	100	69.2099	69.236	69.2359	0.0001	No	0.0260	260.0	25.0	260.0	1
802554-5	100	67.1092	67.139	67.1386	0.0004	No	0.0294	294.0	25.0	294.0	1
802554-6	100	76.3638	76.3924	76.3924	0.0000	No	0.0286	286.0	25.0	286.0	1
802554-7	100	74.2307	74.2599	74.2598	0.0001	No	0.0291	291.0	25.0	291.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

Laboratory	CONTRIOR OR				
QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	499	500	99.8%	90-110%	Yes
LCSD					

Duplicate De	terminatio	ons Differen	<u>ice Sumn</u>	nary	
Lab Number	Sample Weight, g	Sample Dup Welght, g	% RPD	Acceptance Limit	QG WithIn Control?
802528-8	0.0517	0.0512	0.5%	≤5%	Yes

LCS Recovery

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

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

8 = Weght of the second sample in (g).

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Reviewer Signature

Jenny T. Analyst Printed Name



Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 07TDS12C Date Analyzed: 7/13/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
802525	7390	0.56	4803.5	0.87
802526	5120	0.73	3328	1,13
802528-1	3230	0.64	2099.5	0.99
802528-2	3080	0.65	2002	1.00
802528-3	3080	0.66	2002	1.01
802528-4	1750	0.66	1137.5 -	1.01
802528-5	4190	0.63	2723.5	0.96
802528-6	1680	0.62	1092	0.95
802528-7	1580	0.64	1027	0.99
802528-8	1560	0.66	1014	1.02
802528-8D	1560	0.66	1014	1.01
LCS				
802528-9	1460	0.64	949	0.99
802528-10	1460	0.67	949	1.03
802554-1	535	0.65	347.75	1.00
802554-2	523	0.59	339.95	0.91
802554-3	439	0.67	285.35	1.03
802554-4	424	0.61	275.6	0.94
802554-5	475	0.62	308.75	0 .95
802554-6	434	0.66	282.1	1.01
802554-7	441	0.66	286.65	1.02
				:





1420 (714)	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-WDR-369]										COC Number MRNAROUND TIME DATE 07/10/12				10 D	ays OF	1			
COMPANY	E2							\mathcal{I}	7	7 /	77		$\overline{}$	$\overline{}$	\mathcal{T}	7	7	7	7	II	~	MMENT	۰
PROJECT NAME	PG&E Topock								/ /	/ /					/		/ /	/ /	/ /	/ /	C	IAIMIE141	3
PHONE	(530) 229-3303		fax (530)	339-3303			/ /	/ /			/ /	/ /	/	/ /	/	/	/ /		/				
ADDRESS	155 Grand Ave	Ste 1000					' / _s	. /		/ /	/ /								CONTAINERS				
	Oakland, CA 94	1612				8	, / Š	/ **	/ /				/	/	/	/	/ /		\ \ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
P.O. NUMBER	424973.01.DM		7 TEAM	1		5 Filley	/i/g/	, Jance ,	- 1	(0)	/ /	/ /	/	/ /			/ /						
SAMPLERS (SIGN.	ATURE	1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/		***************************************		Toby M.	Spacific Co. 7) C.	TOS (SM2540C)	? /	"unbidily (SM2130)	/ /				/	/		NUMBERO					
SAMPLE I.D.		DATE	ПМЕ	DESCRIPTION	\0 \0 \0 \0	10g/	Specil Specil	/g/	/ /,	'undik		/_/	/	/ /	/ /		/						
SC-700B-WD	R-369	07/10/12	10:00	Water	х	х	x	х		۲ ا							3	3		DH	= 6	(70	2.7
	······				 			•		-							1:	2 I	TOTAL	MILLER	2000	0 b 177 B 1 b 10	-00

ALERIII Levelli QC

C	HAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name 2011/1/ELDS	Company/ Agency <i>DM</i> /	Date/ 7-10-12 Time /5:00	RECEIVED COOL WARM □ 5.1 ℃
Signature (Received)	Printed Hipo//>	Company/ Agency	Date/ フー/0 - / へ Time / / 5:0 G	CUSTODY SEALED YES \(\Boxed{1}\) NO \(\overline{\Omega} \)
Signature (Relinquished)	Printed Hips//	Company/ 72/ Agency	Date/7-/0 -/-2 Time 21:00	SPECIAL REQUIREMENTS:
Signature (Received)	Printed Suabuwing	Company/ TLP	Date/ Time <i>\(\(\(\(\) \) \(\) \(\) 2/: \(\)</i>	e
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Duffer Added (ml)		T-1 P 65	T
6/1/12	80(867 -1	9.5		Final pH	Time Buffered	
			ДИ	N/A	N/A	MG
6/20/12		7	2 m	9.5	10:45 AM	HAV
6120112	80 9228-1	9.5	NIA	9.5	NIA	HAY
 	-2	9.3				
<u></u>	1 2 -3	9.5	小	<u> </u>		.1,
	802335	<u>9, 5</u>	NIA	9.5	NIA	11AV
6129112	802355-1	9:5	NIA	NIA	NIA	HAV
<u> </u>	-2					.1
	802357	9.5	N/A	NIA	NIA	HAV
7/02/12	802392-I	-7	2 ml	9.5	9:00 AM	
k	802394-1		<u> </u>	_1	9:15 AM	1
7/02/12	-2				9:30 AM	
	-3				09:43 AM	1.
07/10/12	802497-1	9.5	NIA	HIA	N/A	HAV
	-2				1	1
	-3					
	-4					
	-5					
	-6					_
	-7					
	-8					
	3 -9					1
07/11/12	802525	7	2 ml	9.5	9:15 AM	<u> </u>
07/11/12		9.5	NIA			17AV.
	802527.1	9.5	NIA	NIA	NIA	HAV
	1, -2		N. 19-7	NIA	NIA	HAV
07/11/12	802528-7	9.5			- 4	1
1	-2		N/A	AIA	N/A	HAV
	-3					
- - 						
- , 	- <u>4</u>				-+-+	_
				<u> </u>	10	

Turbidity/pH Check

		Total in the second of the sec	· Jui	bidity/ph c	IICUN	·		
	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)	
	802494(192,41)	くい	72	7-1-12	ΒE	Vo	yes 15:30	
	80249761-9)		1 4 2	7 -10-10	BL	xes	3010A	
	802(8861-3)	>1	>2		-	Xcs	3010A yes 11.	00
	802505	\ \ \ \ \ \	>2			No	7e5 (1:1)	
	802508	<1	1 42	 	1	yes	3010A	
	802549	- ' '	ì		1.	1		
•	80 2525	<u>ل</u> ز ۲	: >2	7-11-12	BE	xes	301AA Yes 8	see AM
	802515	71	12	1	-1	<u> </u>	1	,
	802526	\ \	42			 		
	80 2527-1	1						
0					1	1		
T			< 2			 		
,	80252161-3		72	<u> </u>	1.	No	×25 111	30
	&c 25 39(10 - 12)	< 1	72	7-12-12	BE	No		AM 7/13
	80 2552	7.	12		135	Yes.	30104	t .
	802553		1				3,467	@ 12 pm
Ŋ						<u> </u>	 	
T	802554 L1-5) 802555 (1-9)							
	8025185	>1	>2	\		hea s	Xes 14	00
	802560(1-3)	<u> </u>	72			Nes No		1 ''
	702769	>1	12			Xes	30104	
	802570	1	1-7-			1-1	20 /64	5
	202571					 		
	802572					 	1.	
		71	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<u>.</u>	···	 	1	
	802574	7	72				1	
			 					
	80 2576 80 1583	71	- Je	7-13-12	BE	· Xes	39 A	
	802595	- /	1	1-15-12	13 =	1 70	394	
	402010		!					
			La Sept A	()	<u> </u>	14 (1.4)		
			-514	}		ok (log)		<u> </u>
			 _ : 	7-1	6-12			
			1 - 1	BE				
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Sample Integrity & Analysis Discrepancy Form

Clien	t: E2	Lab # 802525
Date	Delivered: グナノ <u>ル</u> ノ12 Time: <u>えんの</u> By: ロMail ねF	ield Service □Client
1.	Was a Chain of Custody received and signed?	δΣ(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 ÆN/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)?√ <u>. / ° C</u>	Æ(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 ÆN/A
9.	Does the number of samples received agree with COC?	ÆlYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ÆYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ΦN/A
12.	Were samples pH checked? pH = \(\frac{1}{2} \) \(\frac{1} \) \(\frac{1} \) \(\frac{1}{2} \) \(\frac{1}{2} \) \(\fr	⁄⊈ÝYes □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	æRYes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground W □Sludge □Soil □Wipe □Paint □Solid ⊠	11/ 0
16.	Comments:	<i>ii</i>
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Lucia Mabeel



Established 1931

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

July 30, 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-WDR-370 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 802674

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-370 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on July 17, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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.

to- Mona Nassimi

Manager, Analytical Services

Milrol

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



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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: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 802674

Date: July 30, 2012

Collected: July 17, 2012 Received: July 17, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

EXCELLENCE IN INDEPENDENT TESTING



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Laboratory No.: 802674

Date Received: July 17, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

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
802674-001	SC-700B-WDR-370	E120.1	NONE	7/17/2012	10:00	EC	7260	umhos/cm	2.00
802674-001	SC-700B-WDR-370	E200.8	NONE	7/17/2012	10:00	Chromium	ND	ug/L	1.0
802674-001	SC-700B-WDR-370	E200.8	NONE	7/17/2012	10:00	Manganese	1.5	ug/L	0.50
802674-001	SC-700B-WDR-370	E218.6	LABFLT	7/17/2012	10:00	Chromium, hexavalent	ND	ug/L	0.20
802674-001	SC-700B-WDR-370	SM2130B	NONE	7/17/2012	10:00	Turbidity	ND	NŤU	0.100
802674-001	SC-700B-WDR-370	SM2540C	NONE	7/17/2012	10:00	Total Dissolved Solids	3990	mg/L	250

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.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Page 1 of 7

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

Printed 7/30/2012

Acceptance Range

90 - 110

Laboratory No. 802674

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Unit

umhos

DF

1.00

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:

Parameter

Specific Conductivity

Samples Received on 7/17/2012 9:00:00 PM

Field ID Lab ID Collected Matrix SC-700B-WDR-370 802674-001 07/17/2012 10:00 Water Specific Conductivity - EPA 120.1 Batch 07EC12E Parameter Unit DF Analyzed MDL RL Result 802674-001 Specific Conductivity umhos/cm 07/20/2012 1.00 0.116 2.00 7260

Method Blank Parameter Unit DF Result Specific Conductivity umhos 1.00 ND Duplicate Lab ID = 802674-001 Parameter Unit DF Result **RPD** Expected Acceptance Range Specific Conductivity umhos 1.00 7270 7260 0.138 0 - 10 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity 708 706 umhos 1.00 100. 90 - 110 MRCCS - Secondary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 709 706 100. 90 - 110 MRCVS - Primary

Result

978

Expected

998

Recovery

98.0

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch 07CrH12G

Parameter	**	Unit	Ana	alyzed	DF	MDL	RL	Result
802674-001 Chromium, Hexa	avalent	ug/L	07/18	3/2012 15:52 1	.00 0.0)260	0.20	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	802673-004
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 10.9	Expected 10.8	RPD 0.58	10	Accepta 0 - 20	ince Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.191	Expected 0.200	Recov 95.6	-	Accepta 70 - 130	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.75	Expected 5.00	Recov 95.0	-	90 - 110	nce Range 802671-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.936	Expected/Adde 1.00(1.00)	d Recov 93.6	•	90 - 110	nce Range 802671-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.04	Expected/Adde 1.06(1.00)	d Recov 97.9	•	90 - 110	nce Range 302672-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.970	Expected/Added	d Recov 97.0	ery	90 - 110	nce Range 302673-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.49	Expected/Added 7.60(5.00)	d Recove 97.7	ery	90 - 110	nce Range 302673-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.50	Expected/Added 7.59(5.00)	d Recove 98.3	əry	90 - 110	nce Range 802673-003
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 7.19	Expected/Added 7.26(5.00)	Recove 98.6	∍ry	Acceptar 90 - 110	nce Range

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Client: E2 Consulting Engineers, Inc.			Project Name: Project Number:	PG&E Topock Project 424973.01.DM		Page 3 of 7 Printed 7/30/2012
Matrix Spike						Lab ID = 802673-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.23	Expected/Added 8.31(5.00)	Recovery 98.4	Acceptance Range 90 - 110 Lab ID = 802673-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.972	Expected/Added 1.00(1.00)	Recovery 97.2	Acceptance Range 90 - 110 Lab ID = 802674-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.07	Expected/Added 1.10(1.00)	Recovery 96.9	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.75	Expected 5.00	Recovery 95.0	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.93	Expected 10.0	Recovery 99.3	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.89	Expected 10.0	Recovery 98.9	Acceptance Range 95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Total Batch 072612B

Wetais by EPA 200.8, 10	tai		baici	1 0/20128			
Parameter		Unit	Ana	alyzed D	F MDL	RL	Result
802674-001 Chromium		ug/L	07/26	5/2012 21:40 5.	00 0.195	1.0	ND
Manganese		ug/L	07/26	5/2012 21:40 5.	00 0.270	0.50	1.5
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	802674-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20	_
Manganese	ug/L	5.00	1.36	1.53	11.8	0 - 20	
Low Level Calibration	Verification	ו					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	0.192	0.200	96.1	70 - 130)
Manganese	ug/L	1.00	0.112	0.100	112.	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	98.6	100.	98.6	85 - 115	5
Manganese	ug/L	5.00	92.8	100.	92.8	85 - 115	5
Matrix Spike						Lab ID =	802674-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	99.7	100.(100.)	99.7	75 - 125	5
Manganese	ug/L	5.00	93.2	102.(100.)	91.6	75 - 125	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.92	10.0	99.2	90 - 110)
Manganese	ug/L	1.00	9.35	10.0	93.5	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110	1
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.64	10.0	96.4	90 - 110	

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 7/30/2012

Total Dissolved Solids	otal Dissolved Solids by SM 2540 C		Batcl	n 07TDS12E						
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result		
802674-001 Total Dissolved	Solids	mg/L	07/20	0/2012	1.00	0.757	250.	3990		
Method Blank										
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				l ab 10	802734-007		
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 912	Expected 916	RPD 0.438		RPD Acceptance			
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 501	Expected 500.	R	Recovery 100.		•		_
Turbidity by SM 2130 B			Batch	07TUC12I						
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result		
802674-001 Turbidity		NTU	07/18	3/2012	1.00	0.0140	0.100	ND		
Method Blank								37300		
Parameter Turbidity	Unit NTU	DF 1.00	Result ND							
Duplicate							Lab ID =	802674-001		
Parameter Turbidity	Unit NTU	DF 1.00	Result ND	Expected 0.00		RPD 0		nce Range		
Lab Control Sample										
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.20	Expected 8.00	Recovery 102.		Accepta 90 - 110	nce Range		
Lab Control Sample D	•									
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.35	Expected 8.00		ecovery 104.	Accepta 90 - 110	nce Range		



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

£_ Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 07TDS1E Date Analyzed: 7/20/12

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	72.4965	72.4972	72.4971	0.0001	No	0.0006	6.0	25.0	ND	1
802673-6	50	49.5169	49.5786	49.5782	0.0004	No	0.0613	1226.0	50.0	1226.0	1
802674	10	47.9513	47.9913	47.9912	0.0001	No	0.0399	3990.0	250.0	3990.0	1
802704-10	50	51.1878	51.2197	51.2196	0.0001	No	0.0318	636.0	50.0	636.0	1
802716-1	50	68.3831	68.4926	68.4926	0.0000	No	0.1095	2190.0	50.0	2190.0	1
802716-2	20	49.8829	49.9341	49.9338	0.0003	No	0.0509	2545.0	125.0	2545.0	1
802734-1	100	76.5452	76.5753	76.5753	0.0000	No	0.0301	301.0	25.0	301.0	1
802734-3	50	46.9962	47.0352	47.0352	0.0000	No	0.0390	780.0	50.0	780.0	1
802734-4	100	71.3103	71.3398	71.3395	0.0003	No	0.0292	292.0	25.0	292.0	1
802734-6	100	76.5115	76.5511	76.5511	0.0000	No	0.0396	396.0	25.0	396.0	1
802734-7	50	49.6803	49.7263	49.7261	0.0002	No	0.0458	916.0	50.0	916.0	1
802734-7D	50	50.4954	50.5414	50.541	0.0004	No	0.0456	912.0	50.0	912.0	1
LCS	100	68.1932	68.2433	68.2433	0.0000	No	0.0501	501.0	25.0	501.0	1
802734-9	100	68.1287	68.1786	68.1786	0.0000	No	0.0499	499.0	25.0	499.0	1
802747	410	112.9720	112.9747	112.9747	0.0000	No	0.0027	6.6	6.1	6.6	1

Calculation as follows:

Filterable residue (TDS), ma/L =

Where:

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

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

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

Laboratory Control Sample (LCS) Summarv

Laboratory	Ochia ci ca	inpic (LCC)	Cummary		
QC Std Measu I.D. Value, p		Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	501	500	100.2%	90-110%	Yes
LCSD	1645-762205				

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802734-7	0.0458	0.0456	0.2%	≤5%	Yes
en jagas samma kindijaga jaga	e se delibration	* 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.			

Jenny T.

Analyst Printed Name

LCS Recovery

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 07TDS1E

Date Analyzed: 7/20/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
802673-6	1793	0.68	1165.45	1.05
802674	7260	0.55	4719	0.85
802704-10	1004	0.63	652.6	0.97
802716-1	3650	0.60	2372.5	0.92
802716-2	4040	0.63	2626	0.97
802734-1	468	0.64	304.2	0.99
802734-3	1185	0.66	770.25	1.01
802734-4	440	0.66	286	1.02
802734-6	645	0.61	419.25	0.94
802734-7	1408	0.65	915.2	1.00
802734-7D	1408	0.65	915.2	1.00
LCS				
802734-9	799	0.62	519.35	0.96
802747	10	0.66	6.5	1.01
		·		
				_
		<u> </u>		



1

TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462

CHAIN OF CUSTODY RECORD

COC Number

	TURNA	ROU	ND TI	ME		10	Days		
	DATE	07/1	7/12		_	PAGE	1	OF	_1
7		7							

(714)730-6239 FAX: (714) 730-6462 www.truesdail.com	[IM3Plant-WDR-370]	8026	44	DATE 0	7/17/12	PAGE 1 OF 1
company E2			777	/ / /	// /	COMMENTS
PROJECT NAME PG&E Topock			/ / /		////	/
PHONE (530) 229-3303 FAX (530) 339	303	/ / / /		///	/ / / _ /	
ADDRESS 155 Grand Ave Ste 1000	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	' / / /	///	/ / /	CONTAINERS	
Oakland, CA 94612	1 12 2 2 1 2 1		/ / /	//	/ KEN	
P.O. NUMBER 424973.01.DM TEAM	Lab Fillered (120,7) Cr. (120,	(SM2730)		///		
SAMPLERS (SIGNATURE		(SM)	///	/ / /	ER	
	Cos (218.6) Lab Fillera Specific Conductance (TDS (SM2840C)		/ / /		NUMBER	
		1 1 1 1				1011-112
SC-700B-WDR-370 07/17/12 /0:00	ater x x x x x				3	DH = 6 (2000)
					3 TOTAL NI	JMBER OF CONTAINERS

/\$H	IAIN OF CUSTODY SIG	SNATURE	RECORD				SAMPLE	CONDITIONS		
Signature (Relinquished)	Printed Name HOW THELPS	Company/ Agency	OM1	Date/ ? Time	7-17-12	RECEIVED	COOL 🗹	WARM 🗌	4.4	°FC
Signature (Received)	Printed Hyd/IC	Company/ Agency	74	Time	15:20	CUSTODY SEAL	ED YES	NO	e e	
Signature (Relinquished)	Printed ALACUAS	Company/ Agency	411	Date/ `- Time d	7-17/80	SPECIAL REQUIREM	ENTS:		10.55 (19.00) (19.00) (19.00)	***************************************
Signature (Received)	Printed Mabuning	Company/ Agency	TLI	Date/ ∻ Time /	M7/12 21:00	?				
Signature (Relinquished)	Printed Name	Company/ Agency		Date/ Time						
Signature (Received)	Printed Name	Company/ Agency		Date/ Time					<u></u>	

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
07/13/12	802385-7	9.3	NIA	NIA	NIA	HAV
	-2				1,77	1 1
	J -3				1.	
07/13/12	602614- I	9.5	NID	NIA	NIA	HAV
	2				1	1
	<u>.</u> -3		↓			J,
07/13/12	802615	9.5	NIA	NIA	NIA	HAV
0F113/12	802613	8,5	1 ml	9.5	6:33 PM	HAV
7/16/n	802632	7	IML	9.5	3:45 pm	MG
07/17/12	802636	9.5	NIA	NA	NIA	HAV
07/17/2	402653·Z	7	1 ml	9.5	6:30 PM	HAV
	10 -2	4		Jal	1	1
07/18/12	802671-1	9.5	NIA	HIM	NIA	14A V
4	L -2		1		1	7
	802672	9.3	AIA	NIA	NA	HAV
07/18/12	802673-1	9.5	NIA	MIA	RIA	HAY
	-2					
	-3					
	-4					
	-5				·	
	-6					
	J -7		<u></u>	<u> </u>		
07/18/12	802674	7	2 m1	9.5	9:00 AM	HAV
07/19/12	802703-1	9.3	NIA	MA	NIA	HAV
	.1 -2					
	-3					
	-4					
	-5					
	<u>-6</u>			-+		
<i>y</i>	-8		- Le			

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

C/7/24/12 039

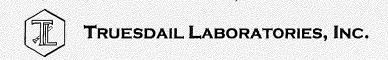




Turbidity/pH Check

	, ,			arty/pri o			r	
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
802613-4	71	< Z	7-16-12	BE	3010A			
802614	۷١		(.	J	1		_	
802623(1,2941)	<u> </u>	72	7-17-12	3 E	No	A sas A M	7-18-12 14:00	PHCZ
802626	71	- 12	1		30 VO A			
802627	1				1			
2,52634		<u> ソ</u> ファ				11:00 AA1		
	L i	<u> </u>			Ar o	11 .50 Mill		
402448(1-15)		1			1			
802649Li-15		<u> </u>				13:30	7/14/12 D 7:00 0 1	N / 7
802650 Lt-4)		72				12.50	7/18/12 DZ:vopm	7/2 2
CO2649 (4-10)		72		£5		1:70 p.in		
°502699(1,2,14,11,12		72		<u></u>	<u> </u>	<u></u>	7 15 17	•
80 2641 (1-3)		> こ			NO	13:30	7-18-12 14:00	BHTZ
802643	>1	< 2.			3010A			
802644			\					
802645								
802646)						
802647		1	1		7			-
802673(1-6)	ζı	4 2	7-18-12	BE	BOLOA	-		
80 2674	Į.	72		1.		8:00		
(302673(1-6)	41	22	7-18-12	E3	3010 A	-		
40265 (1-7)	41	72	i	1.	Nto	12:00 Av	7/19/12 @ 1: mpn	2h 62
802663	41	1			1	1	4/	7 1
862668 (1-3)	21						7/19 12 DI: UPA	
802669 (1-2)	41						DE TOTAL CONTRACTOR OF THE PROPERTY OF THE PRO	
802682(1-2)	4							
402682-2	<u> </u>	42				~	•	<u> </u>
		<u> </u>	7 12 12	BL	BalaA			
802703(193-8)	41		7-19-12	DE	341870		-	
802704(1-5,7-10)	21		-14015	<u>.</u>		1°00 p.4	7/2/1/12 15:0	nil (7
802699 (1-7)		>2	7/19/12	ES		1:00 p.4	7/24/12 1500	
802707	L	<u>_</u>			2 11 1	<u> </u>		PHCZ
802709	71	42	1	- W	30 10 A		J.	<u> </u>
802724	71	L2	7/19/12	ES	<u> </u>			
802734(1,2-9)	<1	<u> ≺</u> 2	7-20-12	BE	3010A			
802736(1-659)	1		، بل	1	<u> </u>			
50 2752(193-5)	<1	< 2	7-23-12	BL	BOLOA			
Qa 2753(1,3-7)								
802754(193-6)								
80.2755 Li-6)								
80 2758(1-3,5-8)								
802749	507.501	>2			BeloASTTLC			after filter
502773	≺\	42			BULA			
80277(11-294)	\ \ \	72				14:00		
80278211-192)	<1	<u> </u>	7-24-12	BE				
30 2778	<1	7.2	1 1 1 1 2		BOLGA	(2:00 pm		
26 -118		1.6) - WH	. 2.771		

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



Sample Integrity & Analysis Discrepancy Form

Clier	nt: <u>E2</u>	Lab#_\$02674
Date	Delivered: 0₹/1₹/12 Time: ½1′00 By: □Mail 16F	Field Service □Client
1.	Was a Chain of Custody received and signed?	A Yes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ¤N/A
) .	Are there any special requirements or notes on the COC?	□Yes □No Æ(N/A
	If a letter was sent with the COC, does it match the COC?	□Yes □No ₽Ŵ/A
i.	Were all requested analyses understood and acceptable?	ØYes □No □N/A
	Were samples received in a chilled condition? Temperature (if yes)? <u>Y. Y. C</u>	AYes ONO ON/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	⊠Yes □No □N/A
	Were sample custody seals intact?	□Yes □No ∞⊄N/A
	Does the number of samples received agree with COC?	□Yes □No □N/A
).	Did sample labels correspond with the client ID's?	⊿Yes □No □N/A
l.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail Client	□Yes □No ÆN/A
	Were samples pH checked? pH = See C. Q.C.	⊠Ýes □No □N/A
},	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	⊄ Yes □No □N/A
l.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	des 🗆 No 🗆 N/A
5.	<u>Sample Matrix:</u> □Liquid □Drinking Water □Ground	$\Lambda III \perp \!\!\!\perp$
	□Sludge □Soil □Wipe □Paint □Solid 🔀	Other Water
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	L. Gliabeun

EXCELLENCE IN INDEPENDENT TESTING



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

September 5, 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 IM3PLANT-WDR-371 PROJECT,

GROUNDWATER MONITORING, TLI NO.: 802818

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-371 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on July 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

The straight run for the matrix spike for sample SC-700B-WDR-371 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

Due to the discrepancy between the Total Chromium (1.1 ug/L) and Hexavalent Chromium (0.23 ug/L) results for sample SC-700B-WDR-371, sample from the Total Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and also yielded a result of ND<1.0 ug/L. The result from the re-digested Total Chromium was reported as it more closely matched the Hexavalent Chromium result.

No other violations or nonconformance 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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 802818

Date: August 13, 2012

Collected: July 24, 2012

Received: July 24, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor / Bita Emami
EPA 218.6	Hexavalent Chromium	George Wahba



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> Laboratory No.: 802818 Date Received: July 24, 2012

Revision 1; September 5, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM P.O. No.: 456827.01.DM

Analytical Results Summary

		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
802818-001	SC-700B-WDR-371	E120.1	NONE	7/24/2012	14:00	EC	7720	umhos/cm	2.00
802818-001	SC-700B-WDR-371	E200.8	NONE	7/24/2012	14:00	Chromium	ND	ug/L	1.0
802818-001	SC-700B-WDR-371	E200.8	NONE	7/24/2012	14:00	Manganese	2.0	ug/L	1.0
802818-001	SC-700B-WDR-371	E218.6	LABFLT	7/24/2012	14:00	Chromium, Hexavalent	0.23	ug/L	0.20
802818-001	SC-700B-WDR-371	SM2130B	NONE	7/24/2012	14:00	Turbidity	ND	NTU	0.100
802818-001	SC-700B-WDR-371	SM2540C	NONE	7/24/2012	14:00	Total Dissolved Solids	4670	mg/L	250

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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Printed 8/14/2012

Laboratory No. 802818

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:

Field ID

Samples Received on 7/24/2012 9:30:00 PM

Lab ID Collected Matrix 802818-001 07/24/2012 14:00 Water SC-700B-WDR-371

Specific Conductivit	ty - EPA 120.1		Batc	h 07EC12G				
Parameter		Unit Analyzed		DF	MDL	RL	Result	
802818-001 Specific Co	nductivity	umhos	umhos/cm 07/27/2012		1.00 0.116		2.00	7720
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	802818-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7720	Expected 7720	F	RPD 0.00	Accepta 0 - 10	ance Range
Lab Control Sam	ple							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 710.	Expected 706	F	Recovery 100.	Accepta 90 - 110	ance Range)
MRCCS - Secon	dary							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 711	Expected 706	F	Recovery 101.	Accepta 90 - 110	ance Range)
MRCVS - Primar	ÿ							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 966	Expected 998	F	Recovery 96.8	Accepta 90 - 110	ance Range)

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 properties. authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Printed 9/5/2012

Revised

Chrome VI by EPA 21	8.6		Batch	07CrH12O				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802818-001 Chromium, H	exavalent	ug/L	07/27	//2012 10:27	1.00	0.0250	0.20	0.23
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	802787-001
Parameter	Unit	DF	Result	Expected	F	RPD	•	ance Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.48		1.46	0 - 20	
Low Level Calibrat	ion Verificatio	n						
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Range
Chromium, Hexavalent	ug/L	1.00	0.190	0.200		95.0	70 - 130)
Lab Control Sampl	le de la							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.74	5.00		94.8	90 - 110)
Matrix Spike							Lab ID =	802787-001
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	18.7	19.5(10.0)		91.9	90 - 110)
Matrix Spike							Lab ID =	802787-002
Parameter	Unit	DF	Result	Expected/Add	ed l	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	1.73	1.80(1.00)		93.0	90 - 110)
Matrix Spike							Lab ID =	802787-003
Parameter	Unit	DF	Result	Expected/Add	ed l	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	6.22	6.49(5.00)		94.7	90 - 110	
Matrix Spike							Lab ID =	802787-004
Parameter	Unit	DF	Result	Expected/Add	ed l	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	5.00	6.02	6.30(5.00)		94.5	90 - 110	
Matrix Spike							Lab ID =	802787-005
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	-	ance Range
Chromium, Hexavalent	ug/L	1.00	6.61	6.99(5.00)		92.5	90 - 11	
Matrix Spike							Lab ID =	802787-006
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery		ance Range
Chromium, Hexavalent	ug/L	1.00	6.74	7.01(5.00)		94.6	90 - 11)



Client: E2 Consulting Eng	gineers, Inc		oject Name: oject Number	PG&E Topock Pro : 424973.01.DM	ject	Page 4 of 10 Printed 9/5/2012 Revised Lab ID = 802818-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.16	1.23(1.00)	93.2	90 - 110
Matrix Spike						Lab ID = 802818-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.98	5.18(5.00)	96.1	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.77	5.00	95.5	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.92	10.0	99.2	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.74	10.0	97.4	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.68	10.0	96.8	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.75	10.0	97.5	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.68	10.0	96.8	95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, To	otal		Batch	080712A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802818-001 Manganese		ug/L	08/07	/2012 19:46	5.00	0.270	1.0	2.0
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration	Verification	ì j						
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
Chromium	ug/L	1.00	0.189	0.200		94.3	70 - 13	0
Manganese	ug/L	1.00	0.204	0.200		102.	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
Chromium	ug/L	5.00	95.3	100.		95.3	85 - 11	5
Manganese	ug/L	5.00	95.0	100.		95.0	85 - 11	5
Matrix Spike							Lab ID =	802755-006
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accept	ance Range
Chromium	ug/L	5.00	124.	124.(100.)		99.4	75 - 12	5
Manganese	ug/L	5.00	97.1	100.(100.)		97.1	75 - 12	5
Matrix Spike Duplicat	е						Lab ID =	802755-006
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accept	ance Range
Chromium	ug/L	5.00	125.	124.(100.)		100.	75 - 12	5
Manganese	ug/L	5.00	93.2	100.(100.)		93.2	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
Chromium	ug/L	1.00	10.2	10.0		102.	90 - 11	0
Manganese	ug/L	1.00	10.5	10.0		105.	90 - 11	0
MRCVS - Primary	n Casterilain De restrenna ann an a-		o part restilifict resembles .		manistrations The	one of the state o		tanto en 1860 en 1960 br>En 1960 en 196
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
Chromium	ug/L	1.00	9.35	10.0		93.5	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
Chromium	ug/L	1.00	9.38	10.0		93.8	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
Chromium	ug/L	1.00	9.54	10.0		95.4	90 - 11	_

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, To	otal			080612B		<u>.</u> .		D 1
Parameter		Unit Analyzed		yzed	DF	MDL	RL	Result
802818-001 Chromium		ug/L	08/06	/2012 23:36	5.00	0.195	1.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					الوالد الدارات المراجع الدارات
Duplicate							Lab ID =	802941-001
Parameter	Unit	DF	Result	Expected		RPD	•	ance Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibratio	n Verification							
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium	ug/L	1.00	0.170	0.200		85.1	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium	ug/L	5.00	90.9	100.		90.9	85 - 11	
Matrix Spike							Lab ID =	802941-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	•	ance Range
Chromium	ug/L	5.00	91.5	100.(100.)		91.5	75 - 12	
Matrix Spike Duplica	ite						Lab ID =	802941-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	•	ance Range
Chromium	ug/L	5.00	93.4	100.(100.)		93.4	75 - 12	5
MRCCS - Secondar	y							
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium	ug/L	1.00	9.22	10.0		92.2	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	-	ance Range
Chromium	ug/L	1.00	9.02	10.0		90.2	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	-	ance Range
Chromium	ug/L	1.00	9.02	10.0		90.2	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium	ug/L	1.00	9.25	10.0		92.5	90 - 11	0



Client: E2 Consulting Engineers, Inc.

PG&E Topock Project Project Name:

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Project Number: 424973.01.DM

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Interference Check Sta	andard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		
Interference Check Sta	andard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		
Interference Check Sta	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	8.88	10.0	88.8	80 - 120
Interference Check Sta	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.03	10.0	90.3	80 - 120

Total Dissolved Solids	by SM 254	0 C	Batch	07TDS12H				
Parameter		Unit	Anal	Analyzed		MDL	_ RL	Result
802818-001 Total Dissolved	Solids	mg/L	07/26/	2012	1.00 0.757 250		250.	4670
Method Blank		esta Bulliuse e Au						
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab IE) = 802822-008
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 1240	Expected 1250	F	RPD 0.642	Acce 0 - 10	ptance Range)
Lab Control Sample								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 491	Expected 500.	F	Recovery 98.2	Acce 90 - 1	ptance Range I10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Turbidity by SM 2130 B	3		Batch	07TUC12M				
Parameter		Unit	Unit Analyzed		DF	MDL	RL	Result
802818-001 Turbidity		NTU	07/25/2012		1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	802818-001
Parameter	Unit	DF	Result	Expected	RPD		Acceptance Range	
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.43	8.00		105.	90 - 110)
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.22	8.00		103.	90 - 110)

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

∕₂ / Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 07TDS12H Date Analyzed: 7/26/12

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	69.1949	69.1952	69.1950	0.0002	No	0.0001	1.0	25.0	ND	1
802818	10	50.6367	50.6834	50.6834	0.0000	No	0.0467	4670.0	250.0	4670.0	11
802821-1	20	50.7025	50.7789	50.7787	0.0002	No	0.0762	3810.0	125.0	3810.0	1
802821-2	50	69.2084	69.341	69.3406	0.0004	No	0.1322	2644.0	50.0	2644.0	1
802822-1	20	48.1376	48.2162	48.2161	0.0001	No	0.0785	3925.0	125.0	3925.0	1
802822-2	20	50.1613	50,2369	50.2369	0.0000	No	0.0756	3780.0	125.0	3780.0	1
802822-3	20	51.5079	51.5832	51.583	0.0002	No	0.0751	3755.0	125.0	3755.0	1
802822-5	50	77.5548	77.6539	77.6539	0.0000	No	0.0991	1982.0	50.0	1982.0	1
802822-6	50	67.9778	68,0223	68.0223	0.0000	No	0.0445	890.0	50.0	890.0	1
802822-7	50	72.0939	72.1522	72.1518	0.0004	No	0.0579	1158.0	50.0	1158.0	1
802822-8	50	76.3451	76.4076	76.4076	0.0000	No	0.0625	1250.0	50.0	1250.0	1
802822-8D	50	66.7134	66.7759	66.7755	0.0004	No	0.0621	1242.0	50.0	1242.0	1
LCS	100	69.3427	69.3920	69.3918	0.0002	No	0.0491	491.0	25.0	491.0	1
802822-9	50_	65.4520	65.5142	65.514	0.0002	No	0.0620	1240.0	50.0	1240.0	1
802824-1	50	67.0544	67.0986	67.0986	0.0000	No	0.0442	884.0	50.0	884.0	1
802824-2	100	68.3849	68.4439	68.4437	0.0002	No	0.0588	588.0	25.0	588.0	1
802824-3	20	50.9561	51.0185	51.0185	0.0000	No	0.0624	3120.0	125.0	3120.0	1
802824-5	50	68.8721	68.9853	68.9853	0.0000	No	0.1132	2264.0	50.0	2264.0	1
802824-6	20	49.2728	49.3353	49.3349	0.0004	No	0.0621	3105.0	125.0	3105.0	1
802824-7	50	68.4088	68.4714	68.4714	0.0000	No	0.0626	1252.0	50.0	1252.0	1
802824-8	50	74.8667	74.9239	74.9236	0.0003	No	0.0569	1138.0	50.0	1138.0	1
802824-9	50	48.5873	48.6218	48.6214	0.0004	No	0.0341	682.0	50.0	682.0	1
802824-10	20	47.2268	47.3128	47.3128	0.0000	No	0.0860	4300.0	125.0	4300.0	1
						į	:				

Calculation as follows:

Filterable residue (TDS), mg/L =

 $\left(\frac{A-B}{C}\right) x \ 1 \ 0^6$

Where:

A = weight of dlsh + residue in grams. B = weight of dlsh in grams. C = mL of sample fillered.

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

Laboratory Control Sample (LCS) Summary

QC Std	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	98.2%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802822-7	0.0625	0.0621	0.3%	≤5%	Yes
	A Partie				

LCS Recovery
$$P = \left(\frac{LC}{LT}\right) x \, 100$$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Hope T.

Reviewer Signature

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 07TDS12H
Date Analyzed: 7/26/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
				L
802818	7690	0.61	4998.5	0.93
802821-1	4720	0.81	3068	1.24
802821-2	3750	0.71	2437.5	1.08
802822-1	5330	0.74	3464.5	1.13
802822-2	5340	0.71	3471	1.09
802822-3	5190	0.72	3373.5	1.11
802822-5	3010	0.66	1956.5	1.01
802822-6	1410	0.63	916.5	0.97
802822-7	1800	0.64	1170	0.99
802822-8	1860	0.67	1209	1.03
802822-8D	1860	0.67	1209	1.03
LCS				
802822-9	1860	0.67	1209	1.03
802824-1	1370	0.65	890.5	0.99
802824-2	932 .	0.63	605.8	0.97
802824-3	4550	0.69	2957.5	1.05
802824-5	3130	0.72	2034.5	1.11
802824-6	4410	0.70	2866.5	1.08
802824-7	1870	0.67	1215.5	1.03
802824-8	1750	0.65	1137.5	1.00
802824-9	1080	0.63	702	0.97
802824-10	5890	0.73	3828.5	1.12



M

Comment garage	*
1 440	
1.5	
	1
AL HOUSENESS	•

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-WDR-371] **2012**

COC Number

TURNAROUND TIME	10	Days		
DATE 07/24/12	PAGE	1	OF	-

www.	truesaan.com		1							C) Ud	0	10		וואט	= U//Z4	1112	PAGE	1 OF	_1_
COMPANY	E2		ŝ.	,			$\overline{}$	$\overline{}$		7	7 7	\mathcal{T}	7,	7 /	7	/	7 /	77		
PROJECT NAME	PG&E Topock								//		′ /		/ /			/ /		/ /	COMMENT	S
PHONE	(530) 229-3303	***************************************	FAX (530	339-3303			/ ,	/ ,	/ /		//	/ /	′ /		/ /	/ /				
ADDRESS	155 Grand Ave	Ste 1000						ړ / ء	_ /	/	/ /		//	/ /		/ /		?/		
	Oakland, CA 94	1612	7			/\$	يد / د	(120 t)	3/ /			/	/ /			/ /	N RE	/		
P.O. NUMBER	456827.01.DM	7 1	TEAM	1	/	Lab Fillered	(200.7)	tance /	/_ /	\(\hat{\epsilon}\)	-//	/ /	′ /		/ /	′ /	CONTAINEBO			
SAMPLERS (SIGNA	TURE M	us fl	<u> </u>		Cr6 (218.6.)	Total May Lat	Specific (2)	1DS (SM2)	30x311	urbidity (SM/2130)	/ /		//	//		//	SMBER OF			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	18	10/2	/ కో	/ Ř	/ / ^	§ /		/		_/		<u> </u>		4 .		
SC-700B-WDF	≀-371	07/24/12	14.00	Water	х	х	х	х	>							3		DH=6	(200.	7)
			Em						,							<u> </u>	TOTA	AL NUMBER	OF CONTAINE	ERS

For Sample Conditions
See Form Attached

ALERT!! Level III QC

11 //c	HAIN OF CUSTODY SI	GNATURE RECORD	<i>a</i> 4	SAMPLE CONDITIONS
Signature (Relinquished)	Printed HUS LEMP	Company/ Agency On (Date/ 7/24/12 Time / 5:30	RECEIVED COOL \square WARM \square 4.5°
	Printed Rafal	Company/ Agency T L/ I	Date/ 7-24-12 Time /5:30	CUSTODY SEALED YES NO 13
Signature (Relinquished)	cy Name Rafor	Company/	Date/ 7 - 2 4 - 12 Time 2 / 3 0	SPECIAL REQUIREMENTS:
Signature (Received) Shaku wing	Printed Name Luda	Company/ Agency	Date/ Time #/24/12 2/:	ED .
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

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
	302789-8	9-5	NA	MIA	HIA	HAV
	802790-I	9.5	NIA	NIA	HVA	HAN
	-2					
	-3					
	-4					
	-5					
	-6		·	·		
	-7					
<u>J</u> a	8	L,	1	<u>.</u>		
07/24/12	802800 -I	7	Inl	9 - 5	6:30 PM	HAV
	-2					
<u></u>	J, -3	<u>_</u>				Ja
07/25/12	602818	7	2 ml	9.5	11:00 AM	HAY
07/25/12	802821-7	9.5	MIA	MIA	NIA	HAV
4	<i>√</i> -2					
07125112	8028221-I	9-5	NIÐ	MIA	NIA	HAV
	-2	-				
	-3					
	-9					
	-5					
	-6					
	-7					
	-8					<u> </u>
		.1,	<u> </u>	representative of the second for the second	A .	J.
0 F125112	802823 -I	9.5	NIA	NA	NIA	HAV
	-2					
	-3					
	-4					
	-6					
- T 						
اللا	1, -7	10		20		

g

HAV 07/30/12

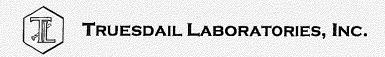


Turbidity/pH Check

				Turbic	lity/pH C	heck			
	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
	80 27 79	<u> </u>	72	7-24-12	BE	BoloA	12.0.pm		
	802786	۲۱	42						
	8027874-698)		7						
	8027884-295-7								
	802789(1-3,5-6)	-T							
	802794 (1,2-8)					1			
	801795	71	<2						
	802796								
	802798								
	80 2799		1						
	8158/8	<u> </u>	>2	7-25-12	BE	3010A	10:30		
	8028 19 (1-3)	<u> ۲۱</u>	12						
	802820				,				
	802821(1-2)								
	802822(1-3,5-9)								
•	802823(193-10)								
	8028241193-4,5								
cemple	802829(6-40)		>2			NC	13:00		0H LZ WA
	en 2806(1-3)		1				1		04-26
	802807L1-3)	>1	4 42			3010A			1
	802814		1			1		-	
	802815								
	802818		 						
	802817	4	72			No	14130		pH L 2 34
	802835(1-22)	<١_	1-1-		 	3010 A	1		P.I.
•	502838	71	4	7-26-12	BE	3010A			
	802843(1-80)	<1	<2	1-20116	1	1			·
	8028441192-10							,	
	802845(1-9,11)					 			
	8028461-325-9)		<u> </u>	 	 	+ 4	4134		
	802841(1-9)		72			NO	9130		
	802842(10-12)	4				-	12:30		DH -2 8
	GO 2851 (1-5)	1			 	XCS	12:30		p1, a
	£02856	71	>2			**************************************			
	802862		<٤				/BI		
	802863	<u> </u>	<u></u>		<u> </u>	4	4 771 72	11200 Acidifie	1 4 Cartal
5	802852(1-3)	71	72	7-30-12	BE	X23 341.	1/30/12	7-31-12 12:	00 /
1	802853(1-4)				 	3010 A	+	1-71-16 16.	
C	802854(1-6)		<u> </u>		 	+	4		
	802885	<u> </u>	<2 X BF			<u> </u>	Na		ļ
	802868 (1-6)	۲۱	₹2					1	<u> </u>
	802869 (1-496-8)								
	802870(19211)								
	802871 (192-10)								
	802888		$\int_{\mathcal{L}}$				1		

Notes:

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



Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E2</u>	Lab# <u>8028/8</u>
Date	e Delivered: 0+124/12 Time: <u>21:3</u> 0 By: □Mail ØF	Field Service
1.	Was a Chain of Custody received and signed?	ÁlYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No 및N/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 ÞNA
5 .	Were all requested analyses understood and acceptable?	ØYes □No □N/A
<i>6</i> .	Were samples received in a chilled condition? Temperature (if yes)? 4.5° 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 ÁN/A
9.	Does the number of samples received agree with COC?	AYes □No □N/A
10.	Did sample labels correspond with the client ID's?	AYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No æHN/A
12.	Were samples pH checked? pH = See c. 3 16	J ÆYes □No □N/A
13.	Were all analyses within holding time at time of receipt? C	ZaYes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ◆☐ Std	A¥es □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground \ □Sludge □Soil □Wipe □Paint □Solid Ø	. 111 1
16.	Comments:	1 11
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	di Strabuerio

EXCELLENCE IN INDEPENDENT TESTING



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

August 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 IM3PLANT-WDR-372PROJECT, GROUNDWATER

MONITORING, TLI NO.: 802941

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-372project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on July 31,012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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.

Lo 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

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 802941

Date: August 13, 2012 **Collected:** July 31, 2012 **Received:** July 31, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba / Himani Vaishnav

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Laboratory No.: 802941

Date Received: July 31, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM P.O. No.: 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802941-001	SC-700B-WDR-372	E120.1	NONE	7/31/2012	10:30	EC	7400	umhos/cm	2.00
802941-001	SC-700B-WDR-372	E200.8	NONE	7/31/2012	10:30	Chromium	ND	ug/L	1.0
802941-001	SC-700B-WDR-372	E200.8	NONE	7/31/2012	10:30	Manganese	0.71	ug/L	0.50
802941-001	SC-700B-WDR-372	E218.6	LABFLT	7/31/2012	10:30	Chromium, Hexavalent	ND	ug/L	0.20
802941-001	SC-700B-WDR-372	SM2130B	NONE	7/31/2012	10:30	Turbidity	ND	NTU	0.100
802941-001	SC-700B-WDR-372	SM2540C	NONE	7/31/2012	10:30	Total Dissolved Solids	4110	mg/L	250

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.

005

EXCELLENCE IN INDEPENDENT TESTING



07/31/2012 10:30

Established 1931

Page 1 of 8

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Water

Laboratory No. 802941

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

SC-700B-WDR-372

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Samples Received on 7/31/2012 9:00:00 PM

802941-001

Field ID Lab ID Collected Matrix

30-7 00D-VVDIX-372				002011 001		07/3/1/2012 10:30		VValei	
Specific Conductivity -	EPA 120.1		Batch	08EC12A					
Parameter 802941-001 Specific Conductivity		Unit Analyzed		DF	MDL	RL	Result		
		umhos	umhos/cm 08/03/20		1.00	0.116	2.00	7400	
Method Blank									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND						
Duplicate							Lab ID =	803005-001	
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 813	Expected 813	F	RPD 0.00	Accepta 0 - 10	ance Range	
Lab Control Sample									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 702	Expected 706	F	Recovery 99.4	Accepta 90 - 110	ince Range	
MRCCS - Secondar	y Carallet Carabana.								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 710.	Expected 706	R	Recovery 100.	Accepta 90 - 110	ince Range)	
MRCVS - Primary									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 981	Expected 998	R	Recovery 98.3	Accepta 90 - 110	ince Range)	

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 programmer. authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 8/14/2012

Page 2 of 8

Chrome VI by EPA 218.0	0			08CrH12E	- 140:	n.	D . ''
Parameter		Unit		lyzed Di		RL	Result
302941-001 Chromium, Hex	avalent	ug/L	08/02	1/2012 16:21 1.0	0.0250	0.20	ND
Method Blank							
Parameter	Unit	DF	Result				
Chromium, Hexavalent	ug/L	1.00	ND				
Duplicate						Lab ID =	802845-01
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.95	1.96	0.332	0 - 20	
Low Level Calibration	verification	na _{zama} jiji					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.211	0.200	106.	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.78	5.00	95.5	90 - 110)
Matrix Spike						Lab ID =	802845-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	-	ance Range
Chromium, Hexavalent	ug/L	1.00	7.45	7.51(5.00)	98.9	90 - 110)
Matrix Spike						Lab ID =	802845-009
Parameter	Unit	DF	Result	Expected/Added	-	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.82	1.85(1.00)	97.0	90 - 110)
Matrix Spike						Lab ID =	802845-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	6.95	6.96(5.00)	99.8	90 - 110	
Matrix Spike						Lab ID =	802870-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.981	1.00(1.00)	98.1	90 - 110)
Matrix Spike						Lab ID =	802870-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.991	1.00(1.00)	99.1	90 - 110)
Matrix Spike						Lab ID =	802870-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	8.81	8.94(5.00)	97.4	90 - 110)



Client: E2 Consulting En	gineers, Ind		roject Name: roject Numbe	PG&E Topock Pror: 424973.01.DM	ject	Page 3 of 8 Printed 8/14/2012
Matrix Spike						Lab ID = 802870-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.97	Expected/Added 8.94(5.00)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 802870-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 15.1	Expected/Added 15.3(10.0)	Recovery 98.5	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802870-009
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 7.96	Expected/Added 7.83(5.00)	Recovery 103.	Acceptance Range 90 - 110 Lab ID = 802870-010
Matrix Spike	Magazini.	DE	D	Francisco de A/A dale d	S.	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 6.11	Expected/Added 6.24(5.00)	Recovery 97.5	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802870-011
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 6.14	Expected/Added 6.23(5.00)	Recovery 98.2	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802889-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.21	Expected/Added 9.24(5.00)	Recovery 99.5	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802889-002
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 15.1	Expected/Added 15.3(10.0)	Recovery 98.2	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802889-003
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.983	Expected/Added 1.00(1.00)	Recovery 98.3	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802889-004
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 6.01	Expected/Added 6.18(5.00)	Recovery 96.6	Acceptance Range 90 - 110
Matrix Spike	e manimu gamer e mer hjegegegen in se stere e yen	 101 ledjil NGS oddrene og prje er en en en	er milliodologistissi topomente pro megapor eg	gy gyfghfydd y ffi yw changai gyr y chingair annaran o gangainin y ar a changair y ffirir y chingair y ffirir c	pama national pagas in the canada e organização que a característica de característica de característica de car	Lab ID = 802889-005
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 19.1	Expected/Added 19.3(10.0)	Recovery 97.4	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 802941-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.10	Expected/Added 1.11(1.00)	Recovery 98.4	Acceptance Range 90 - 110
MRCCS - Secondary						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 4.75	Expected 5.00	Recovery 95.1	Acceptance Range 90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Parameter		Unit	Ana	lyzed l)F	MDL	RL	Result
802941-001 Chromium		ug/L	08/07	7/2012 17:30 5	.00	0.195	1.0	ND
Manganese		ug/L	08/07	/2012 17:58 1	.00	0.0540	0.50	0.71
Method Blank	ur eller indexe.			Angel a participation	GE 22			
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	802941-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ınce Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ınce Range
Chromium	ug/L	1.00	0.189	0.200		94.3	70 - 130)
Manganese	ug/L	1.00	0.204	0.200		102.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	95.1	100.		95.1	85 - 115	5
Manganese	ug/L	5.00	95.1	100.		95.1	85 - 115	5
Matrix Spike							Lab ID =	802941-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ınce Range
Chromium	ug/L	5.00	94.7	100.(100.)		94.7	75 - 125	5
Manganese	ug/L	5.00	93.7	100.(100.)		93.7	75 - 125	5
Matrix Spike Duplicat	te						Lab ID =	802941-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	98.0	100.(100.)		98.0	75 - 125	5
Manganese	ug/L	5.00	96.4	100.(100.)		96.4	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Chromium	ug/L	1.00	10.2	10.0		102.	90 - 110)
Manganese	ug/L	1.00	10.5	10.0		105.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.35	10.0		93.5	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Interference	Chack	Standard	ΔR
micherence	CHECK	Stariuaru	ΔD

interference Officer (Juli Idai d 7 1D					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.86	10.0	98.6	80 - 120
Interference Check S	Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.26	10.0	92.6	80 - 120
Interference Check S	Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.13	10.0	91.3	80 - 120

Total Dissolved Solids	by SM 2540	C	Bate	th 08TDS12A				
Parameter		Unit	Ar	nalyzed	DF	MDL	RL	Result
302941-001 Total Dissolved Solids		mg/L	08/03/2012		1.00	0.757	250.	4110
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	802952-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 201	Expected 217	.	RPD 7.66	0 - 10	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 486	Expected 500.		Recovery 97.2		ance Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Turbidity by SM 2130 B			Batc	h 08TUC12A				
Parameter	Unit	Ana	alyzed	DF	MDL	RL	Result	
802941-001 Turbidity		NTU	08/0	1/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	802941-001
Parameter Turbidity	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	ince Range
Lab Control Sample								
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.30	Expected 8.00	F	Recovery 104.	Accepta 90 - 110	ince Range)
Lab Control Sample	Duplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.05	Expected 8.00	F	Recovery 101.	Accepta 90 - 110	ince Range)

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

√ √ Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12A Date Analyzed: 8/1/12

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	66.8065	66.8069	66.8065	0.0004	No	0.0000	0.0	25.0	ND	1
802908-2	-50	67.1949	67.2492	67.2486	0.0006	Yes	0.0537	1074.0	50.0	1074.0	1
802909-1	20	51.1887	51.2435	51.2434	0.0001	. No	0.0547	2735.0	125.0	2735.0	1
802909-2	100	73.1844	73.2117	73.2115	0.0002	No	0.0271	271.0	25.0	271.0	1
802910-9	50	69,3427	69.3964	69.396	0.0004	No	0.0533	1066.0	50.0	1066.0	1
802912-10	100	76.6765	76.7109	76.7108	0.0001	No	0.0343	343.0	25.0	343.0	11
802941	10	49.6817	49.7231	49.7228	0.0003	No	0.0411	4110.0	250.0	4110.0	1
802944-1	20	50.4955	50.5700	50.5700	0.0000	No	0.0745	3725.0	125.0	3725.0	, 1
802945-2	100	75.2054	75.2423	75.2423	0.0000	No	0.0369	369.0	25.0	369.0	1
802945-5	20	68.0107	68.0624	68.0622	0.0002	No	0.0515	2575.0	125.0	2575.0	1
802952-1	100	65.6679	65.6896	65.6896	0.0000	No	0.0217	217.0	25.0	217.0	1
802952-1D	100	67.2198	67.2399	67.2399	0.0000	No	0.0201	201.0	25.0	201.0	11
LCS	100	69.5103	69.5589	69.5589	0.0000	No	0.0486	486.0	25.0	486.0	11
802939-1	450	109.0651	109.0669	109.0669	0.0000	No	0.0018	4.0	5.6	ND	11
802939-2	440	109.9028	109.9029	109.9028	0.0001	No	0.0000	0.0	5.7	ND	1
802857	50	74.7263	74.8179	74.8177	0.0002	No	0.0914	1828.0	50.0	1828.0	11
802973-1	50	69.4163	69.4536	69.4532	0.0004	No	0.0369	738.0	50.0	738.0	1
802973-2	20	74.7090	74.7731	74.7728	0.0003	No	0.0638	3190.0	125.0	3190.0	11
802973-3	100	67.7103	67.7261	67.7259	0.0002	No	0.0156	156.0	25.0	156.0	1
802994	50	75.4466	75.52	75.5199	0.0001	No	0.0733	1466.0	50.0	1466.0	11
803005	100	71.3111	71.3609	71.3608	0.0001	No	0.0497	497.0	25.0	497.0	1
803025-1	100	76.5108	76.5381	76.5377	0.0004	No	0.0269	269.0	25.0	269.0	11
803025-2	100	76.5478	76.5725	76.5722	0.0003	No	0.0244	244.0	25.0	244.0	1
								į			

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

	Laboratory	JUILLUI Ja	Inple (LOC	Carminary		
	QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
İ	LCS1	486	500	97.2%	90-110%	Yes
-	LCSD					

Dunlicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802952-1	0.0217	0.0201	3.8%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

C = Average weight in (g).

FOR Hope T.

Reviewer Printed Name

Jenny T. Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12A Date Analyzed: 8/1/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
802908-2	1678	0.64	1090.7	0.98
802909-1	4160	0.66	2704	1.01
802909-2	465	0.58	302.25	0.90
802910-9	1685	0.63	1095.25	0.97
802912-10	560	0.61	364	0.94
802941	7400	0.56	4810	0.85
802944-1	5230	0.71	L 3399.5	1.10
802945-2	616	0.60	400.4	0.92
802945-5	3900	0.66	2535	1.02
802952-1	365	0.59	237.25	0.91
802952-1D	365	0.55	237.25	0.85
LCS				
802939-1	24.5	ND	15.925	ND
802939-2	4	ND	2.6	ND
802857	2910	0.63	1891.5	0.97
802973-1	1280	0.58	832	0.89
802973-2	4890	0.65	3178.5	1.00
802973-3	284	0.55	184.6	0.85
802994	2310	0.63	1501.5	0.98
803005	813	0.61	528.45	0.94
803025-1	428	0.63	278.2	0.97
803025-2	443	0.55	287.95	0.85
		<u></u>		
		<u> </u>		



FTF.

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-WDR-372] **90294**

COC Number

TURNA	ROUND TIME	
DATE	07/31/12	-

10 Days
PAGE 1 OF

~	.tiqesaan.com									4		O. A.								
COMPANY	E2		Š				$\overline{}$	$\overline{}$	7	7	7 7	$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$	///	7	7	77	OOMIEUTO
PROJECT NAME	PG&E Topock								/ /	/ /	/ /					//		//	/ /	COMMENTS
PHONE	(530) 229-3303		fax (530)	339-3303		/	/ ,	/ /	/ /			Ι.	/ /	/ /	/ /	/ /		/ /.		
ADDRESS	155 Grand Ave Oakland, CA 94					P	1 %	120,11		/ /	/ /						$^{\prime}$ $/$	CONTAINERS		
P.O. NUMBER	456827.01.DM		TEAM	1		1) Lab Fillered	Specific C	/ 👸 /	((2085)	Turbidity (SM21.30.	3//	/ /	/ /	/ /	/ /	///	//	0/		
SAMPLE I.D.		DATE	TIME	DESCRIPTION	Cr6 (278 E)	Total May	Specific	7DS (SM2 Ex	/ /	Turbidiny.	/ /		/ .	/ ,	/ ,	//	NUMBER			
SC-700B-WD	R-372	07/31/12	10:30	Water	Х	Х	х	х		х						·	3		PM:	= 6 (rwo.7
	***************************************	<u> </u>		tini i didina masa sa sa sa mata Madida					······································	Arran		. <u>.</u>			······································	·····	3	TOTA	L NUMBER	OF CONTAINERS



For Sample Conditions See Form Attached

// CH	IAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name Kon THELDS	Company/ OM/ Agency	Date/ 7-31-12 Time /545	RECEIVED COOL WARM 1 4.6°C
Signature (Received)	Printed Name // Printed	Company/ Agency	Date/ フース/ ーノぞう Time フース/ ーノぞ	CUSTODY SEALED YES NO T
Signature (Relinquished)	Printed Apoll te	Company/ Agency	Date/ 3 / 2/20 G	SPECIAL REQUIREMENTS:
Signature What Received) What was	Printed On aby min o	Company/ 72.7 Agency	Date/ 7/31/12 21:00	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

	Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
	8/4/12		9,5	N/A	N/A	N/A	145
		-5					
		V-6					
		802945-1					
		-2		·			
		-3					
	<u> </u>	1 -4					
		-5					
		-6					
		-7			· /		
f	e001 110	-8	A	Ψ.	4	A	4
	98/01/12		7	2 ml	9,5	9:00 AM	HAV
	8/1/12	802964-1	7	2mL	9.5	18:00	14
	8/2/12		7	1 mh	9.5	8:00	Ma
		-3				8: (s	
.	8/2/12	802970	9.5	· //^	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	8:20	<u> </u>
ŀ	010110	802971-1		NA	MA	N/A	4
ľ		0.0011					
18/2/8		80297	~		₩	——V	
	8/2/12	802972-1	9.5	NIA	MA	ACIA	Cul
Γ		-2		7.1.1	7 / /		9
		1 -3	T	1		1	1
	(13/12	803025-1	9-5	NIA	NIA	NIA	HAV
**************************************	J	1 2	7	4			
	·					7	7
					-		
				·		,	
L	<u> </u>						

Gr 8/7/12

HAY 08/06/12



Turbidity/pH Check

	Turbidity/pH Check											
	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments			
	802859 (1-2,14-5)	۲ ١	42	7-30-12	BE	30 \0 A	NO					
	80 2895 L1-294)	41	>2	يل	7	∨ c	14:30					
	80290 & L1-2)	<1	42	7-31-12	BE	3010A	-					
İ	802909 (1-2	<u> ۲</u> ۱				1						
	802910(+325-9)	1										
Ī	802911 L1-89 (0)											
	802912 (193-11)											
Ī	80291361-47								-			
	8029 ox	71		1								
Ī	802907											
	802918-2					1						
Ī	8029 19											
Ì	802920,				-							
t	802921											
f	802922				· .							
-	8 = 2923		- 1		1							
Ì	802924	4	V									
ľ	8c 2941	<\ ¹	72	8-1-12	BE	3010A	11:00		1			
-	802942 (1-8)	- i	12			\	` <u>'</u>	718 Turbin) > pH < 2 B			
- 1-	802943 (1-9)											
-	802944(1-2)4-6)											
-	802945(1-6,8)					1						
1	802931		>2			<i>N</i> 0	11:30	8-3 PH < 2 B	Ĕ-			
-	80293961-2)							8-3 PA(2	82			
f	802947 (1-Z)				1	1		J				
-	802970	\(\frac{\partial}{\partial}\)	<u> </u>	8-2-12	BF	30 10 A						
-	8c 2971 (1-2)		ì		1							
ŀ	80 2972(1-3)											
- 1-	802951 (10-82)		72			. ~0	g \30					
t	802989	71	- 1-			3 0 to A	13:00					
ŀ	802973	\(\frac{1}{1}\)				ma	12.00	8/3/12 16:W	PH LZ			
f	802961(1-3						15:00	8/1/12 16:00	PH 42			
ŀ	502966(1-30)						i	1-128-3 PH	2 88			
+	303004 U-6)	₹ 1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	8-3-12	BE	30\cA	<u> </u>		*.			
-	803005	1		1	1	1						
1	503002	>4	-			1						
-	202994	1	- Y -									
+	803022				+			-				
-	803021	, 	\			 	13:30	`				
_			<u> </u>				12.Ju					
-	303925 (1-2) 803928	<1 ∀1	X < 2	8-5-12	BE	30 11 A						
	803041(17924)			8-7-12	BE	NO	10.00					
	803047(1924)	<1	72.	0-1-(ワレ	30 (o A	12:30					
	803046	>1	<u> </u>		-							
L	DOJUNO	ا بل	ول		u	<u> </u>						

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

Sample Integrity & Analysis Discrepancy Form

Cli	ient: E2	Lab # <u>80294/</u>
Da	te Deliveredℒ <u>֏/3/</u> /12 Time:ዲ <u>/՜ル〇</u> By: □Mail ឪl	Field Service
1.	Was a Chain of Custody received and signed?	Ø(Yes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ØN/A
	Are there any special requirements or notes on the COC?	□Yes □No □ÀV/A
	If a letter was sent with the COC, does it match the COC?	□Yes □No □N/A
	Were all requested analyses understood and acceptable?	ØYes □No □N/A
	Were samples received in a chilled condition? Temperature (if yes)? \(\frac{\psi_0 \circ C}{\circ} \)	
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ZYes □No □N/A
	Were sample custody seals intact?	□Yes □No ⊉N/A
	Does the number of samples received agree with COC?	Lyes ONO ON/A
	Did sample labels correspond with the client ID's?	ØYes □No □N/A
	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ØN/A
		o⊄Yes □No □N/A
	Were all analyses within holding time at time of receipt? // // If not, notify Project Manager.	ZYes ⊒No □N/A
LAK-SESSI	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ÞÍStd	AYes DNO DNA
	Sample Matrix: □Liquid □Drinking Water □Ground W □Sludge □Soil □Wipe □Paint □Solid 🖄	11, 1
	Comments:	
	Sample Check-In completed by Truesdail Log-In/Receiving:	L. Straburir

Apalytical Bench Log Book

WDR pH Results

Sample Name	Date of sampling	Time of	Date of	Time of	pH Metes #1, #2, or #3 etc, See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	ut down until the problem Analyst Name (for the pH result)	pH Result
SC-7003	7-2-12	1300	7-2-17	1305	METER# 1	7-2-12	00:44	-56.0		1
)fes:				<u> </u>	1	177.72	00,44	36.0	MON PHELPS	7.1
	· · · · · · · · · · · · · · · · · · ·	 								
3C-701	7-2-17	1315	7-2-12	1318	METER#1	7-2-12	00:44	-56.0	A Succession	700
tes:		•	· · · · · · · · · · · · · · · · · · ·				00.47	36.0	ROWTHELPS	7.7
160	 	·								10
6C-100B	1-2-17	1325	7-2-12	330	METER # 1	7-2-12	00:46	56.0		1.5
otes:			·				00.10	16.0	KONTHELDS	70
120 0 0	·	· · · · · · · · · · · · · · · · · · ·								<i>/</i>
50-7003	7-10-12	1000	7-10-12	1005	METER#1	7-10-12	1:00	55.5		1
ites:				<u></u>	7,0	* ***//	1	777	KON VHELPS	7./
									2 1	
5C-700B	7-17-12	1000 7	7-17-12	004	nacreo#1	7-12-12	1:00			T
tes:				! <u></u>	MO GOT	17/12	7.00	55.6	MON MUELPS	71
manifestation and a second and a second and a second and a second and a second and a second and a second and a	<u> </u>									
SC-700B	7-24-12	1400	7-24-12	1465	METERUI	7-24-12	4.			·
tes:	· · · · · · · · · · · · · · · · · · ·		- 1 11-1 1	100	1818164	1-27-12	1:00	-55.7	Mas LENTE	7.1
							-			
5C-700B	2-31-17	1030 7	31-10 1	120	METER#1	901			11	
es:		0 00 10	2.010	100 1	METER E	1-31-12 1	100	55.5	KONFIFELOS	7.2

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

September 4, 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-WDR-373 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 803084

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-373 project groundwater monitoring. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on August 7, 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 total and dissolved metals were analyzed by EPA 200.8 and EPA 200.7 with Mr. Shawn Duffy's approval.

The method blank internal standard Germanium (#3) for Total Manganese by EPA 200.8 analyzed in batch 082112A exceeded the recovery limits of 70 % -130%. The method blank was also analyzed in batches 081912B, 082312A, and 082712A and the internal standard recovery was within the acceptance range. All other QA/QC was within acceptable limits, therefore, the data was accepted.

No other violations or nonconformance 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.

40 / Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

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) Groundwaters Project Name: PG&E Topock Project Project No.: 456827.01.DM

Laboratory No.: 803084

Date: September 4, 2012 Collected: August 7, 2012 Received: August 7, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Melissa Scharfe
SM 4500-Si D	Soluble Silica	Jenny Tankunakorn
SM 4500-P B,E	Total Phosphorus	Jenny Tankunakorn
SM 5310C	Total Organic Carbon	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Melissa Scharfe
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor / Bita Emami
EPA 218.6	Hexavalent Chromium	George Wahba / maksim Gorbunov

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Laboratory No.: 803084

Date Received: August 7, 2012

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

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM **P.O. No.:** 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803084-001	SC-700B-WDR-373	E120.1	NONE	8/7/2012	10:00	EC	7160	umhos/cm	2.0
803084-001	SC-700B-WDR-373	E200.7	NONE	8/7/2012	10:00	Aluminum	ND	ug/L	10.0
803084-001	SC-700B-WDR-373	E200.7	NONE	8/7/2012	10:00	BORON	929	ug/L	200
803084-001	SC-700B-WDR-373	E200.7	NONE	8/7/2012	10:00	Iron	ND	ug/L	20.0
803084-001	SC-700B-WDR-373	E200.7	NONE	8/7/2012	10:00	Zinc	ND	ug/L	10.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Antimony	ND	ug/L	2.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Arsenic	ND	ug/L	0.50
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Barium	10.6	ug/L	5.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Chromium	ND	ug/L	1.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Copper	ND	ug/L	5.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Lead	ND	ug/L	1.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Manganese	0.66	ug/L	0.50
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Molybdenum	18.3	ug/L	5.0
803084-001	SC-700B-WDR-373	E200.8	NONE	8/7/2012	10:00	Nickel	ND	ug/L	2.0
803084-001	SC-700B-WDR-373	E218.6	LABFLT	8/7/2012	10:00	Chromium, Hexavalent	ND	ug/L	0.20
803084-001	SC-700B-WDR-373	E300	NONE	8/7/2012	10:00	Fluoride	2.15	mg/L	0.500
803084-001	SC-700B-WDR-373	E300	NONE	8/7/2012	10:00	Nitrate as N	2.96	mg/L	1.00
803084-001	SC-700B-WDR-373	E300	NONE	8/7/2012	10:00	Sulfate	500	mg/L	25.0
803084-001	SC-700B-WDR-373	SM2130B	NONE	8/7/2012	10:00	Turbidity	ND	NŤU	0.100
803084-001	SC-700B-WDR-373	SM2540C	NONE	8/7/2012	10:00	Total Dissolved Solids	4420	mg/L	250
803084-001	SC-700B-WDR-373	SM4500NH3D	NONE	8/7/2012	10:00	Ammonia-N	ND	mg/L	0.500
803084-001	SC-700B-WDR-373	SM4500NO2B	NONE	8/7/2012	10:00	Nitrite as N	ND	mg/L	0.0050

005

Revision 1; September 4, 2012

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL

803084-002	SC-100B-WDR-373	E120.1	NONE	8/7/2012	10:00	EC	7650	umhos/cm	2.00
803084-002	SC-100B-WDR-373	E200.7	NONE	8/7/2012	10:00	Aluminum	ND	ug/L	10.0
803084-002	SC-100B-WDR-373	E200.7	NONE	8/7/2012	10:00	BORON	939	ug/L	200
803084-002	SC-100B-WDR-373	E200.7	NONE	8/7/2012	10:00	Iron	ND	ug/L	20.0
803084-002	SC-100B-WDR-373	E200.7	LABFLT	8/7/2012	10:00	Iron	ND	ug/L	20.0
803084-002	SC-100B-WDR-373	E200.7	NONE	8/7/2012	10:00	Zinc	ND	ug/L	10.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Antimony	ND	ug/L	2.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Arsenic	3.1	ug/L	0.50
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Barium	26.8	ug/L	5.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Chromium	773	ug/L	1.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Copper	ND	ug/L	5.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Lead	ND	ug/L	1.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Manganese	3.7	ug/L	0.50
803084-002	SC-100B-WDR-373	E200.8	LABFLT	8/7/2012	10:00	Manganese	3.4	ug/L	0.50
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Molybdenum	20.2	ug/L	5.0
803084-002	SC-100B-WDR-373	E200.8	NONE	8/7/2012	10:00	Nickel	ND	ug/L	2.0
803084-002	SC-100B-WDR-373	E218.6	LABFLT	8/7/2012	10:00	Chromium, Hexavalent	727	ug/L	10.0
803084-002	SC-100B-WDR-373	E300	NONE	8/7/2012	10:00	Fluoride	2.59	mg/L	0.500
803084-002	SC-100B-WDR-373	E300	NONE	8/7/2012	10:00	Nitrate as N	3.13	mg/L	1.00
803084-002	SC-100B-WDR-373	E300	NONE	8/7/2012	10:00	Sulfate	526	mg/L	25.0
803084-002	SC-100B-WDR-373	SM2130B	NONE	8/7/2012	10:00	Turbidity	0.198	NŤU	0.100
803084-002	SC-100B-WDR-373	SM2320B	NONE	8/7/2012	10:00	Alkalinity	137	mg/L	5.00
803084-002	SC-100B-WDR-373	SM2320B	NONE	8/7/2012	10:00	Alkalinity, Bicarbonate (As CaCO3)	137	mg/L	5.00
803084-002	SC-100B-WDR-373	SM2320B	NONE	8/7/2012	10:00	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
803084-002	SC-100B-WDR-373	SM2540C	NONE	8/7/2012	10:00	Total Dissolved Solids	4660	mg/L	250
803084-002	SC-100B-WDR-373	SM4500NH3D	NONE	8/7/2012	10:00	Ammonia-N	ND	mg/L	0.500
803084-002	SC-100B-WDR-373	SM4500NO2B	NONE	8/7/2012	10:00	Nitrite as N	ND	mg/L	0.0050
803084-002	SC-100B-WDR-373	SM4500-PB_E	NONE	8/7/2012	10:00	Total Phosphorous-P	ND	mg/L	0.0200
803084-002	SC-100B-WDR-373	SM4500SI	NONE	8/7/2012	10:00	Soluble Silica	18.5	mg/L	1.00
803084-002	SC-100B-WDR-373	SM5310C	NONE	8/7/2012	10:00	Total Organic Carbon	ND	mg/L	0.300

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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Printed 9/4/2012

Laboratory No. 803084

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

mg/L

50.0

Oakland, CA 94612

Attention: Shaw

Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 456827.01.DM P.O. Number: 456827.01.DM

Release Number:

Sulfate

Samples Received on 8/7/2012 9:30:00 PM

Field ID Lab ID Collected Matrix SC-700B-WDR-373 803084-001 08/07/2012 10:00 Water SC-100B-WDR-373 803084-002 08/07/2012 10:00 Water Anions By I.C. - EPA 300.0 Batch 08AN12H Parameter Unit Analyzed DF MDL RL Result 803084-001 Nitrate as Nitrogen mg/L 08/08/2012 11:13 5.00 0.195 1.00 2.96 Sulfate mg/L 08/08/2012 11:59 50.0 5.70 25.0 500. 803084-002 Nitrate as Nitrogen mg/L 08/08/2012 11:24 5.00 0.195 1.00 3.13 Sulfate 08/08/2012 12:33 mg/L 50.0 5.70 25.0 526. Method Blank Parameter Unit DF Result Sulfate ND mg/L 1.00 Nitrate as Nitrogen 1.00 ND mg/L Duplicate Lab ID = 803084-001 Parameter Unit DF RPD Result Expected Acceptance Range Sulfate 50.0 mg/L 499. 500. 0.211 0 - 20Duplicate Lab ID = 803084-002 Parameter Unit DF Result **RPD** Expected Acceptance Range Nitrate as Nitrogen mq/L 5.00 3.09 3.13 1.25 0 - 20Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Sulfate mg/L 1.00 20.2 20.0 101. 90 - 110 Nitrate as Nitrogen mg/L 1.00 4.03 4.00 101. 90 - 110 Matrix Spike Lab ID = 803084-001 Parameter Unit DF Result Expected/Added Recovery Acceptance Range

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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Client: E2 Consulting Eng	ineers, Inc		Project Name: Project Number	PG&E Topock Pro: 456827.01.DM	ject	Page 2 of 37 Printed 9/4/2012
Matrix Spike						Lab ID = 803084-002
Parameter Nitrate as Nitrogen MRCCS - Secondary	Unit mg/L	ÐF 5.00	Result 23.2	Expected/Added 23.1(20.0)	Recovery 100.	Acceptance Range 85 - 115
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	20.2	20.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.03	4.00	101.	90 - 110
MRCVS - Primary						
Parameter	Unit	ÐF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110
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	100.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Anions By I.C EPA 30	0.00		Batch	08AN12I				
Parameter		Unit	Ana	lyzed l)F	MDL	RL	Result
803084-001 Fluoride		mg/L	08/09)/2012 15:07 5	.00	0.155	0.500	2.15
803084-002 Fluoride	A 1981/197	mg/L	08/09	9/2012 15:18 5	.00	0.155	0.500	2.59
Method Blank								
Parameter	Unit	DF	Result					
Fluoride	mg/L	1.00	ND					
Duplicate							Lab ID =	803084-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Fluoride	mg/L	5.00	2.57	2.59		0.658	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Fluoride	mg/L	1.00	4.11	4.00		103.	90 - 110	
Matrix Spike							Lab ID =	803084-002
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Fluoride	mg/L	5.00	22.6	22.6(20.0)		99.9	85 - 115	
MRCCS - Secondary	ý , , , , , , , , , , , , , , , , , , ,							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Fluoride	mg/L	1.00	4.13	4.00		103.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Fluoride	mg/L	1.00	3.17	3.00		106.	90 - 110	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM Printed 9/4/2012

Nitrite SM 4500-NO2 B			Batch	08NO212F				
Parameter		Unit	Anal	yzed [)F	MDL	RL	Result
803084-001 Nitrite as Nitrog	en	mg/L	08/08	/2012 12:03 1	.00	0.000540	0.0050	ND
803084-002 Nitrite as Nitrog	en	mg/L	08/08	/2012 12:04 1	.00	0.000540	0.0050	ND
Method Blank								
Parameter	Unit	DF	Result					
Nitrite as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID = 8	03092-001
Parameter	Unit	DF	Result	Expected	F	RPD	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0293	0.0308		95.1	90 - 110	
Matrix Spike							Lab ID = 8	03092-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0201	0.0200(0.0200)		100.	85 - 115	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0292	0.0308		94.8	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0201	0.0200		100.	90 - 110	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Alkalinity by SM 23	20B		Batch	08ALK12C				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803084-002 Alkalinity a	s CaCO3	mg/L	08/08	3/2012	1.00	0.555	5.00	137
Bicarbonat	e (Calculated)	mg/L	08/08	3/2012 ·	1.00	0.555	5.00	137
Carbonate	(Calculated)	mg/L	08/08	3/2012	1.00	0.555	5.00	ND
Method Blank								
Parameter	Unit	DF	Result					
Alkalinity as CaCO3	mg/L	1.00	ND					
Duplicate							Lab ID =	803084-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	136	137		0.733	0 - 20	
Lab Control San	nple							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	101	100.		101	90 - 110)
Lab Control San	nple Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Alkalinity as CaCO3	mg/L	1.00	103	100.		103	90 - 110)
Matrix Spike							Lab ID =	803084-002
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	236	237(100.)		99.0	75 - 125	5



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Specific Conductivity - El	PA 120.1		Batch	08EC12B				
Parameter		Unit	Ana	ılyzed	DF	MDL	RL	Result
803084-001 Specific Conductiv	vity	umhos/cn	n 08/10)/2012	1.00	0.116	2.00	7160
803084-002 Specific Conductiv	vity	umhos/cn	n 08/10)/2012	1.00	0.116	2.00	7650
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	803084-002
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7650	Expected 7650	F	RPD 0.00	Accepta 0 - 10	ince Range
Lab Control Sample								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 710.	Expected 706	F	Recovery 100.	Accepta 90 - 110	ince Range)
MRCCS - Secondary								
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 700.	Expected 706	F	Recovery 99.2	Accepta 90 - 110	nce Range)
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 983	Expected 998	F	Recovery 98.5	Accepta 90 - 110	ince Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803084-001 Chromium, Hex	avalent	ug/L	08/10)/2012 17:15 1	.00	0.0260	0.20	ND
803084-002 Chromium, Hex	avalent	ug/L	08/10)/2012 17:25 5	0.0	1.30	10.0	727.
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	802944-00
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Rang
Chromium, Hexavalent	ug/L	1.00	2.49	2.53		1.68	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Rang
Chromium, Hexavalent	ug/L	1.00	0.192	0.200		96.2	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Rang
Chromium, Hexavalent	ug/L	1.00	4.71	5.00		94.3	90 - 110)
Matrix Spike							Lab ID =	802944-00
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ince Rang
Chromium, Hexavalent	ug/L	1.00	7.99	7.53(5.00)		109.	90 - 110)
Matrix Spike							Lab ID =	802944-00
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Rang
Chromium, Hexavalent	ug/L	1.00	9.12	9.45(5.00)		93.4	90 - 110)
Matrix Spike							Lab ID =	802944-00
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Rang
Chromium, Hexavalent	ug/L	1.00	0.924	1.00(1.00)		92.4	90 - 110)
Matrix Spike							Lab ID =	802944-004
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Rang
Chromium, Hexavalent	ug/L	1.00	1.69	1.75(1.00)		94.4	90 - 110)
Matrix Spike							Lab ID =	802944-00
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	6.36	6.56(5.00)		96.0	90 - 110)
Matrix Spike							Lab ID =	802944-00
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Rang
Chromium, Hexavalent	ug/L	1.00	1.81	1.87(1.00)		93.7	90 - 110)



Client: E2 Consulting Er	ngineers, Inc		roject Name: roject Number	PG&E Topock Pro:: 456827.01.DM	nject	Page 8 of 37 Printed 9/4/2012
Matrix Spike						Lab ID = 803005-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.51	Expected/Added 1.57(1.00)	Recovery 93.6	Acceptance Range 90 - 110 Lab ID = 803025-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.86	Expected/Added 1.96(1.00)	Recovery 90.2	Acceptance Range 90 - 110 Lab ID = 803025-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.78	Expected/Added 1.85(1.00)	Recovery 93.9	Acceptance Range 90 - 110 Lab ID = 803047-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.27	Expected/Added 1.35(1.00)	Recovery 91.6	Acceptance Range 90 - 110 Lab ID = 803047-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.56	Expected/Added 1.63(1.00)	Recovery 92.6	Acceptance Range 90 - 110 Lab ID = 803083-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 15.5	Expected/Added 16.2(10.0)	Recovery 93.1	Acceptance Range 90 - 110 Lab ID = 803084-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.08	Expected/Added 1.18(1.00)	Recovery 90.9	Acceptance Range 90 - 110 Lab ID = 803084-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 50.0	Result 1440	Expected/Added 1480(750.)	Recovery 95.4	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.71	Expected 5.00	Recovery 94.2	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.83	Expected 10.0	Recovery 98.3	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.89	Expected 10.0	Recovery 98.9	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.83	Expected 10.0	Recovery 98.3	Acceptance Range 95 - 105

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Metals by EPA 200.7, T	otal		Batch	081612A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803084-001 Aluminum		ug/L	08/16	/2012 12:50	1.00	9.50	10.0	ND
Boron		ug/L	08/16	/2012 12:50	1.00	1.70	200.	929.
Iron		ug/L	08/16	/2012 12:50	1.00	5.10	20.0	ND
Zinc		ug/L	08/16	/2012 12:50	1.00	1.60	10.0	ND
803084-002 Aluminum		ug/L	08/16	/2012 12:56	1.00	9.50	10.0	ND
Boron		ug/L	08/16	/2012 12:56	1.00	1.70	200.	939.
Iron		ug/L	08/16	/2012 12:56	1.00	5.10	20.0	ND
Zinc		ug/L	08/16	/2012 12:56	1.00	1.60	10.0	ND
Method Blank			VIII.					
Parameter	Unit	DF	Result					
Aluminum	ug/L	1.00	ND					
Iron	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	803025-00
Parameter	Unit	DF	Result	Expected	1	RPD	Accepta	nce Rang
Aluminum	ug/L	1.00	ND	0.00		0	0 - 20	
Iron	ug/L	1.00	ND	0.00		0	0 - 20	
Zinc	ug/L	1.00	12.4	12.8		3.17	0 - 20	
Boron	ug/L	1.00	104.	105		0.669	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	nce Rang
Aluminum	ug/L	1.00	103.	100.		103.	85 - 115	5
Iron	ug/L	1.00	104.	100.		104.	85 - 115	5
Zinc	ug/L	1.00	98.5	100.		98.5	85 - 115	
Boron	ug/L	1.00	103.	100.		103	85 - 115	
Matrix Spike							Lab ID =	803025-00
Parameter	Unit	DF	Result	Expected/Ad	ded	Recovery	Accepta	nce Rang
Aluminum	ug/L	1.00	1920	2000(2000)		95.8	75 - 125	5
Iron	ug/L	1.00	2070	2000(2000)		103.	75 - 125	
Zinc	ug/L	1.00	1970	2010(2000)		98.0	75 - 125	
Boron	ug/L	1.00	2080	2100(2000)		98.9	75 - 125	5



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Metals by EPA 200.8, T	otal		Batch	081912B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803084-001 Arsenic		ug/L	08/20)/2012 06:32	5.00	0.265	0.50	ND
Barium		ug/L	08/20	/2012 06:32	5.00	0.205	5.0	10.6
Chromium		ug/L	08/20	/2012 06:32	5.00	0.195	1.0	ND
Copper		ug/L	08/20	/2012 06:32	5.00	0.235	5.0	ND
Nickel		ug/L	08/20	/2012 06:32	5.00	0.354	2.0	ND
803084-002 Arsenic		ug/L	08/20	/2012 06:39	5.00	0.265	0.50	3.1
Barium		ug/L	08/20)/2012 06:39	5.00	0.205	5.0	26.8
Chromium		ug/L	08/20	/2012 06:39	5.00	0.195	1.0	773.
Copper		ug/L	08/20	/2012 06:39	5.00	0.235	5.0	ND
Nickel		ug/L	08/20	/2012 06:39	5.00	0.354	2.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Barium	ug/L	1.00	ND					
Beryllium	ug/L	1.00	ND					
Cadmium	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Nickel	ug/L	1.00	ND					
Copper	ug/L	1.00	ND					
Vanadium	ug/L	1.00	ND					
Low Level Calibratio	n Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ince Range
Arsenic	ug/L	1.00	0.121	0.100		121	70 - 130)
Barium	ug/L	1.00	1.03	1.00		103	70 - 130)
Beryllium	ug/L	1.00	0.111	0.100		111.	70 - 130)
Cadmium	ug/L	1.00	0.200	0.200		100.	70 - 130)
Chromium	ug/L	1.00	0.190	0.200		95.0	70 - 130)
Nickel	ug/L	1.00	0.202	0.200		101.	70 - 130)
Copper	ug/L	1.00	0.761	1.00		76.1	70 - 130)



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Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	95.2	100.	95.2	85 - 115
Barium	ug/L	5.00	97.5	100.	97.5	85 - 115
Beryllium	ug/L	5.00	97.7	100.	97.7	85 - 115
Cadmium	ug/L	5.00	100.	100.	100.	85 - 115
Chromium	ug/L	5.00	93.5	100.	93.5	85 - 115
Nickel	ug/L	5.00	93.1	100.	93.1	85 - 115
Copper	ug/L	5.00	94.2	100.	94.2	85 - 115
Vanadium	ug/L	5.00	92.0	100.	92.0	85 - 115
Matrix Spike						Lab ID = 803025-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	103.	101.(100.)	102.	75 - 125
Barium	ug/L	5.00	157.	154.(100.)	102.	75 - 125
Beryllium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Cadmium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Chromium	ug/L	5.00	101.	101.(100.)	99.4	75 - 125
Nickel	ug/L	5.00	97.2	100.(100.)	97.2	75 - 125
Copper	ug/L	5.00	98.0	100.(100.)	98.0	75 - 125
Vanadium	ug/L	5.00	106	105.(100.)	100.	75 - 125
Matrix Spike Duplicate						Lab ID = 803025-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	102.	101.(100.)	101.	75 - 125
Barium	ug/L	5.00	156.	154.(100.)	102.	75 - 125
Beryllium	ug/L	5.00	101	100.(100.)	101	75 - 125
Cadmium	ug/L	5.00	100.	100.(100.)	100.	75 - 125
Chromium	ug/L	5.00	101.	101.(100.)	99.9	75 - 125
Nickel	ug/L	5.00	96.6	100.(100.)	96.6	75 - 125
Copper	ug/L	5.00	98.3	100.(100.)	98.3	75 - 125
Vanadium	ug/L	5.00	106.	105.(100.)	101.	75 - 125



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Interference Check St	andard AB					
Parameter Copper Interference Check St	Unit ug/L andard AB	DF 1.00	Result 9.26	Expected 10.0	Recovery 92.6	Acceptance Range 80 - 120
Parameter Vanadium Interference Check St	Unit ug/L andard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Parameter Vanadium Serial Dilution	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Parameter Barium Serial Dilution	Unit ug/L	DF 25.0	Result 156.	Expected 153	RPD 2.07	Acceptance Range 0 - 10 Lab ID = 803084-002
Parameter Chromium	Unit ug/L	DF 25.0	Result 777.	Expected 756	RPD 2.70	Acceptance Range 0 - 10



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Metals by EPA 200.8, To	tal		Batch	082312A				
Parameter		Unit	Ana	llyzed [)F	MDL	RL	Result
803084-001 Lead		ug/L	08/23	3/2012 13:00 5	.00	0.265	1.0	ND
Molybdenum		ug/L	08/23	3/2012 13:00 5	.00	0.150	5.0	18.3
803084-002 Lead		ug/L	08/23	3/2012 13:07 5	.00	0.265	1.0	ND
Molybdenum		ug/L	08/23	3/2012 13:07 5	.00	0.150	5.0	20.2
Method Blank								
Parameter	Unit	DF	Result					
Lead	ug/L	1.00	ND					
Thallium	ug/L	1.00	ND					
Uranium	ug/L	1.00	ND					
Molybdenum	ug/L	1.00	ND					
Duplicate							Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	nce Range
Lead	ug/L	5.00	ND	0.00		0	0 - 20	_
Thallium	ug/L	5.00	ND	0.00		0	0 - 20	
Uranium	ug/L	5.00	3.92	4.05		3.18	0 - 20	
Molybdenum	ug/L	5.00	4.17	4.52		8.13	0 - 20	
Low Level Calibration	Verification	1						
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ince Range
Lead	ug/L	1.00	0.190	0.200		95.2	70 - 130)
Thallium	ug/L	1.00	0.166	0.200		82.9	70 - 130)
Uranium	ug/L	1.00	0.197	0.200		98.7	70 - 130)
Molybdenum	ug/L	1.00	0.977	1.00		97.7	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Lead	ug/L	5.00	93.0	100.		93.0	85 - 115	;
Thallium	ug/L	5.00	87.8	100.		87.8	85 - 115	;
Uranium	ug/L	5.00	93.2	100.		93.2	85 - 115	;
Molybdenum	ug/L	5.00	101	100.		101	85 - 115	;
Matrix Spike							Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Adde	d R	ecovery	Accepta	nce Range
Lead	ug/L	5.00	88.0	100.(100.)		88.0	75 - 125	i
Thallium	ug/L	5.00	83.2	100.(100.)		83.2	75 - 125	i
Uranium	ug/L	5.00	94.6	104.(100.)		90.6	75 - 125	i
Molybdenum	ug/L	5.00	101.	104.(100.)		96.2	75 - 125	i

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803084-001 Antimony		ug/L	08/27	7/2012 14:16	5.00	0.420	2.0	ND
803084-002 Antimony		ug/L	08/27	/2012 14:23	5.00	0.420	2.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Selenium	ug/L	1.00	ND					
Antimony	ug/L	1.00	ND					
Duplicate							Lab ID =	803025-00
Parameter	Unit	DF	Result	Expected		RPD	Accepta	nce Range
Selenium	ug/L	5.00	ND	0.00		0	0 - 20	
Antimony	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration	on Verification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Selenium	ug/L	1.00	0.196	0.200		98.2	70 - 130)
Antimony	ug/L	1.00	0.241	0.200		121.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Selenium	ug/L	5.00	87.2	100.		87.2	85 - 115	5
Antimony	ug/L	5.00	103.	100.		103.	85 - 115	5
Matrix Spike							Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Add	led	Recovery	Accepta	ince Range
Selenium	ug/ L	5.00	83.6	100.(100.)		83.6	75 - 125	5
Antimony	ug/L	5.00	103	100.(100.)		103	75 - 125	j
Matrix Spike Duplica	ate						Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Add	led	Recovery	Accepta	ince Range
Selenium	ug/L	5.00	86.2	100.(100.)		86.2	75 - 125	j
Antimony	ug/L	5.00	105.	100.(100.)		105.	75 - 125	j
MRCCS - Secondar	у							
Parameter	Unit	DF	Result	Expected		Recovery	•	ince Range
Selenium	ug/L	1.00	9.27	10.0		92.7	90 - 110	
Antimony	ug/L	1.00	10.2	10.0		102.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Selenium	ug/L	1.00	9.57	10.0		95.7	90 - 110)

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Parameter		Unit	Anal	yzed DF	MDL	RL	Result
803084-001 Manganese		ug/L	08/22	/2012 00:42 5.0	0 0.270	0.50	0.66
803084-002 Manganese		ug/L	08/22	/2012 00:50 5.0	0 0.270	0.50	3.7
Method Blank							
Parameter Manganese	Unit ug/L	DF 1.00	Result ND				
Low Level Calibration	_						
	Unit	DF	Result	Expected	Recovery	Accents	ince Range
Parameter Manganese	ug/L	1.00	0.0946	0.100	94.6	70 - 130	_
Lab Control Sample							
Parameter Manganese	Unit ug/L	DF 5.00	Result 90.7	Expected 100.	Recovery 90.7	Accepta 85 - 115	ince Range
Matrix Spike						Lab ID =	803025-001
Parameter Manganese	Unit ug/L	DF 5.00	Result 90.8	Expected/Added 100.(100.)	Recovery 90.8	Accepta 75 - 125	ince Range
Matrix Spike Duplicat	е					Lab ID =	803025-001
Parameter Manganese	Unit ug/L	DF 5.00	Result 91.2	Expected/Added 100.(100.)	Recovery 91.2	Accepta 75 - 125	nce Range
MRCCS - Secondary							
Parameter Manganese	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Accepta 90 - 110	nce Range
MRCVS - Primary							
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.70	Expected 10.0	Recovery 97.0	Accepta 90 - 110	nce Range
MRCVS - Primary							
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.90	Expected 10.0	Recovery 99.0	Accepta 90 - 110	nce Range
The Charles and the Arabas and the Control of the Control	Unit	DF	Result	Expected	Recovery	Accents	nce Range
Parameter Manganese	ug/ L	1.00	9.97	10.0	99.7	90 - 110	_
MRCVS - Primary	evija u s						
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.72	Expected 10.0	Recovery 97.2	Accepta 90 - 110	nce Range

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803084-002 Silica	100.00	mg/L	08/13	3/2012	25.0	0.252	1.00	18.5
Method Blank								
Parameter	Unit	DF 1.00	Result ND					
Silica Duplicate	mg/L	1.00	ND.				I ah ID =	803153-001
The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	1.1	DE.	Danish	Cymantad		חחח		
Parameter Silica	Unit mg/L	DF 1.00	Result ND	Expected 0.00		RPD 0	0 - 20	ance Range
Lab Control Samp		1.00		0.00		J	0 20	
Parameter	Unit	DF	Result	Expected		Recovery	Accents	ance Range
Silica	mg/L	1.00	0.206	0.220		93.7	90 - 110	_
Matrix Spike		,,,,,	•					803153-001
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	Accepta	ance Range
Silica	mg/L	1.00	0.340	0.400(0.400		84.9	75 - 125	_
MRCCS - Second	_			,	,			
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Silica	mg/L	1.00	0.114	0.110		104.	90 - 110	_
MRCVS - Primary	Mariana di Leoni, mari							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Silica	mg/L	1.00	0.373	0.400		93.2	90 - 110)
			Datas	08TDS12B				
Total Dissolved Solid	as by SIVI 254	Unit		lyzed	DF	MDL	RL	Result
Parameter								
803084-001 Total Dissolv		mg/L	-	/2012	1.00		250.	4420
803084-002 Total Dissolv	ved Solids	mg/L	08/08	/2012	1.00	0.757	250.	4660
Method Blank								
Parameter	Unit	DF -	Result					
Total Dissolved Solids	mg/L	1.00	ND					000047 000
Duplicate							Lab ID =	803047-002
Parameter	Unit 	DF	Result	Expected		RPD	•	ince Range
Total Dissolved Solids	mg/L	1.00	306	301		1.65	0 - 10	
Lab Control Samp	ole							
Parameter	Unit	DF	Result	Expected		Recovery	•	ince Range
Total Dissolved Solids	mg/L	1.00	502	500.		100.	90 - 110)

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Total Organic Carbon (Ta	(DOC) SI	VI 5310 C	Batcl	n 08TOC12C				
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
803084-002 Total Organic Ca	ırbon	mg/L	08/0	8/2012 13:32	1.00	0.0309	0.300	ND
Method Blank								
Parameter	Unit	DF	Result					
Total Organic Carbon	mg/L	1.00	ND					
Dissolved Organic Carbon	mg/L	1.00	ND					
Duplicate							Lab ID =	802866-004
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	2.92	2.96		1.33	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	2.19	2.26		96.8	90 - 110	
Matrix Spike							Lab ID =	803084-002
Parameter	Unit	DF	Result	Expected/Add	ded F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	8.60	10.0(10.0)		86.0	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	2.29	2.26		101.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	9.47	10.0		94.7	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	9.27	10.0		92.7	90 - 110	



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Batch 08/TP12B Total Phosphate, SM 4500-PB,E DF MDL Unit RL Analyzed Result Parameter mg/L 08/13/2012 1.00 0.00650 0.0200 ND 803084-002 Phosphate, Total As P Method Blank DF Parameter Unit Result Phosphate, Total As P mg/L 1.00 ND Lab ID = 803084-002 Duplicate Expected **RPD** Acceptance Range Unit DF Result Parameter 0.00 0 0 - 201.00 ND Phosphate, Total As P mg/L Lab Control Sample DF Result Expected Recovery Acceptance Range Unit Parameter 0.130 90 - 110 Phosphate, Total As P mg/L 1.00 0.124 95.0 Lab ID = 803084-002Matrix Spike Expected/Added Parameter Unit DF Result Recovery Acceptance Range 75 - 125 Phosphate, Total As P mg/L 1.00 0.0680 0.0650(0.0650)105. MRCCS - Secondary Recovery DF Result Expected Acceptance Range Parameter Unit 0.0650 94.5 90 - 110 mg/L 1.00 0.0614 Phosphate, Total As P MRCVS - Primary DF Expected Recovery Acceptance Range Unit Result Parameter 99.5 0.0647 0.0650 90 - 110 mg/L 1.00 Phosphate, Total As P



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Ammonia Nitrogen by SM4500-NH3D		Batch 08NH312B						
Parameter		Unit	Ana	ılyzed C	F	MDL	RL	Result
803084-001 Ammonia as N		mg/L	08/15	5/2012 1.	00	0.00980	0.500	ND
803084-002 Ammonia as N		mg/L	08/15	5/2012 1.	00	0.00980	0.500	ND
Method Blank								
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Duplicate							Lab ID =	803084-001
Parameter	Unit	DF	Result	Expected	R	RPD	Accepta	nce Range
Ammonia as N	mg/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	lecovery	Acceptance Rang	
Ammonia as N	mg/L	1.00	9.61	10.0		96.1	90 - 110	
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	9.93	10.0		99.3	90 - 110	
Matrix Spike							Lab ID = 8	803084-002
Parameter	Unit	DF	Result	Expected/Added	i R	lecovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.75	6.23(6.00)		109.	75 - 125	
Matrix Spike Duplicat	te						Lab 1D = 8	303084-002
Parameter	Unit	DF	Result	Expected/Added	i R	ecovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	7.35	6.23(6.00)		119.	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.25	6.00		104.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	•	nce Range
Ammonia as N	mg/L	1.00	6.10	6.00		102.	90 - 110	



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Parameter		Unit	Anal	yzed D	F MDL	RL	Result
803084-002 Manganese		ug/L		/2012 23:30 5.0	00 0.270	0.50	3.4
Method Blank							
Parameter	Unit	DF	Result				
Manganese	ug/L	1.00	ND				
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	1.00	0.0946	0.100	94.6	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	5.00	90.7	100.	90.7	85 - 115	5
Matrix Spike						Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ince Range
Manganese	ug/L	5.00	92.5	100.(100.)	92.5	75 - 125	5
Matrix Spike Duplicate						Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ince Range
Manganese	ug/L	5.00	92.5	100.(100.)	92.5	75 - 125	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	•	nce Range
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery		nce Range
Manganese	ug/L	1.00	9.42	10.0	94.2	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	•	nce Range
Manganese	ug/L	1.00	9.90	10.0	99.0	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	•	nce Range
Manganese	ug/L	1.00	9.97	10.0	99.7	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	•	nce Range
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110)



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Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
303084-002 Iron		ug/L	08/16	6/2012 13:02 1.	00 5.10	20.0	ND
Method Blank							
Parameter	Unit	DF	Result				
Iron	ug/L	1.00	ND				
Duplicate						Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20	
Lab Control Sam	ple						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	104.	100.	104.	85 - 11	5
Matrix Spike						Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accepta	ance Range
Iron	ug/L	1.00	114.	100.(100.)	114	75 - 12	5
MRCCS - Second	dary						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	5120	5000	102.	90 - 110	0
MRCVS - Primar	y						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	5490	5000	110.	90 - 110)
MRCVS - Primar	y King G						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	5360	5000	107.	90 - 110	כ
Interference Che	ck Standard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	2230	2000	111.	80 - 120	כ
Interference Che	ck Standard A						
Parameter	Unit	DF	Result	Expected	Recovery	•	ance Range
Iron	ug/L	1.00	2290	2000	114.	80 - 120	כ
Interference Che	ck Standard AB						
Parameter	Unit	DF	Result	Expected	Recovery		ance Range
Iron	ug/L	1.00	2210	2000	110.	80 - 120)



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	△ ().	Ot	40
Interference	Check	Standard	AB.

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2310	2000	115.	80 - 120

Turbidity by SM 2130 B			Batcl	n 08TUC12E				
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
803084-001 Turbidity		NTU	08/0	8/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	803084-001
Parameter	Unit	DF	Result	Expected	ı	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.55	8.00		107.	90 - 110	
Lab Control Sample Du	ıplicate							
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.30	8.00		104.	90 - 110	

Turbidity by SM 2130 B			Batc	h 08TUC12F				
Parameter		Unit	An	Analyzed		MDL	RL	Result
803084-002 Turbidity		NTU	08/0	08/08/2012		0.0140	0.100	0.198
Method Blank	46 y y i							
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	803084-002
Parameter	Unit	DF	Result	Expected		RPD	Accepta	nce Range
Turbidity	NTU	1.00	0.197	0.198		0.506	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.15	8.00		102.	90 - 110)
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.03	8.00		100.	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 products authorization from Truesdail Laboratories.



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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

€ - Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12B Date Analyzed: 8/7/12

Laboratory Number	Sample volume, ml	lnitial 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	69.5608	69.5608	69.5608	0.0000	No	0.0000	0.0	25.0	ND	1
803041-17	50	74.7315	74.7677	74.7675	0.0002	No	0.0360	720.0	50.0	720.0	1
803047-1	100	67.7734	67.8077	67.8075	0.0002	No	0.0341	341.0	25.0	341.0	1
803047-2	100	72.3899	72.4202	72.42	0.0002	No	0.0301	301.0	25.0	301.0	1
803062-14	100	68.8713	68,9302	68.9301	0.0001	No	0.0588	588.0	25.0	588.0	1
803063	20	51.4702	51.5676	51.5676	0.0000	No	0.0974	4870.0	125.0	4870.0	1
803064	20	50.9443	51.0435	51.0435	0.0000	No	0.0992	4960.0	125.0	4960.0	1
803065	10	47.5288	47.5875	47.5874	0.0001	No	0.0586	5860.0	250.0	5860.0	1
803066	10	47.7639	47.8229	47.8228	0.0001	No	0.0589	5890.0	250.0	5890.0	1
803067	10	48.0074	48.0756	48.0752	0.0004	No	0.0678	6780.0	250.0	6780.0	1
803068	10	49.2718	49.3842	49.384	0.0002	No	0.1122	11220.0	250.0	11220.0	1
803047-2D	100	108.5218	108.5525	108.5524	0.0001	No	0.0306	306.0	25.0	306.0	1
LCS	100	76.1937	76.2443	76.2439	0.0004	No	0.0502	502.0	25.0	502.0	1
803069	20	49.5165	49.6104	49.6099	0.0005	No	0.0934	4670.0	125.0	4670.0	1
803070	20	51.4242	51.5215	51.5215	0.0000	No	0.0973	4865.0	125.0	4865.0	1
803083-1	20	49.2865	49.3443	49.3439	0.0004	No	0.0574	2870.0	125.0	2870.0	1
803083-2	10	51.5073	51.5631	51.563	0.0001	No	0.0557	5570.0	250.0	5570.0	1
803084-1	10	48.5862	48.6306	48.6304	0.0002	No	0.0442	4420.0	250.0	4420.0	1
803084-2	10	49.2010	49.2476	49.2476	0.0000	No	0.0466	4660.0	250.0	4660.0	1
803092-1	50	71.3279	71.4014	71.401	0.0004	No	0.0731	1462.0	50.0	1462.0	1
803116	100	74.6790	74.737	74.7369	0.0001	No	0.0579	579.0	25.0	579.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	502	500	100.4%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803047-2	0.0301	0.0306	0.8%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12B
Date Analyzed: 8/7/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
803041-17	1296	0.56	842.4	0.85
803047-1	530	0.64	344.5	0.99
803047-2	482	0.62	313.3	0.96
803062-14	935	0.63	607.75	0.97
803063	6730	0.72	4374.5	1.11
803064	6490	0.76	4218.5	1.18
803065	7850	0.75	5102.5	1.15
803066	8240	0.71	5356	1.10
803067	8090	0.84	5258.5	1.29
803068	17000	0.66	11050	1.02
803047-2D	482	0.63	313.3	0.98
LCS				
803069	6190	0.75	4023.5	1.16
803070	6330	0.77	4114.5	1.18
803083-1	4840	0.59	3146	0.91
803083-2	8340	0.67	5421	1.03
803084-1	7190	0.61	4673.5	0.95
803084-2	7650	0.61	4972.5	0.94
803092-1	2330	0.63	1514.5	0.97
803116	920	0.63	598	0.97







Alkalinity by SM 2320B

62 SC

Analytical Batch: 08ALK12C
Matrix: Water
Date of Analysis: 8/8/12

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 CaCO₃ (ppm)	as CaCO₃ (ppm)		Low Alkalinity as CaCO ₃ (<20ppm)
BLANK	5.87	50	0.02		0.0	0,00		0.0	5	ND	ND	ND	ND	
803084-2	7.50	50	0.02		0.0	6.85		137.0	5	137.0	137.0	ND	ND	
803084-2 DUP	7.49	50	0.02	·	0.0	6.80	i	136.0	5	136.0	136.0	ND	ND	
803084-2 MS	8.96	50	0.02	1,70	34.0	11.80		236.0	5	236.0	168.0	68	ND	
LCS	10.18	50	0.02	المحاصة فتروه والمراد والماسات	46.0	5.05	Î	101.0	5	101.0	9.0	92	ND	
LCSD	10.26	50	0.02	SALANING AND AND AND STREET STATE	46.0	5.15		103.0	5	103.0	11.0	92	ND	
	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de l	İ	†	1										
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		†	1	1		1								1

Calculations as follows:

Tor P=

Where:

 $A \times N \times 50000$

mL sample

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

(2 x B - C) x N x 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)

Laboratory Control Sample (LCS/LCSD) Summary

Accept Limit

<5

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	%Recovery	Accetance Limit	QC Within Control?
LCS	101	100	101.0%	90-110	Yes
LCSD	103	100	103.0%	90-110	Yes

QC Within

Control?

Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
803084-2	137	136	0.7%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Sample Mauri	v ohive (is	IO/IVIOD) O	ullillary									
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?
	137	1	100	100	236	237.00	99%	75-125	Yes			
803084-2		1	, 100 ,	7 100 /				70 120				j

Melissa S.
Analyst Printed Name

Blank Summary

Reporting

Limit, RL

5 ppm

080812c

Measured

Value, ppm

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Committee annual	*
3000	
	ě
1	

TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462 www.truesdail.com

CHAIN OF CUSTODY RECORD

COC Number

TURNAROUND TIME DATE 8/07/12

10 Days

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PROJECT NAME	PG&E Topock	IM3										/	\$				1 46		Q2/5/		/ /	СОММІ	ENTS	
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P.O. NUMBER	456827.01.DM		_), Lab	20'B	/ ,	/_		(30)	2005		16.	/	/s _{tets}	\ \frac{\dagger}{\dagger}	/ş²		R OF CONTAINERS				
SAMPLERS (SIGNA	ATURE					Alkalin: (218.6) Lab Fili	EC (12)	(20.1)	Turb (c)	70fall 1	4mm. (200.7).5	Total C (4500-NUS)	Anjo-	70C/F (300.0) F, NO.	Dissol.	Solust.	NO2 (A. Sillica - A	14500-NO2B)	NUMBE	OER OF				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	\£	Alka	F_{C}	1/8	1/1/1		Am	101	A. J.	/2) Diss	80/1	/ ò							
SC-700B-V	VDR-373	8/07/12	10:00		Х	-	Х	Х	Х	Х	Х		Х				Х		4		DH	=2	_	1:
SC-100B-V	WDR-373	8/07/12	10:00		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х		9		pu	1=2,	DH=	7
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										<u> </u>	Arrange page 1		•		***************************************				13	TOTA	L NUMBER	R OF CONTA	AINERS	1

CH	IAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name HONFIELD	Company/ Z-Agency Own	Date/ 8-7-12 Time 15:30	RECEIVED COOL WARM 3,1
Signature (Received) Harack Dav	Printed Rafael	Company/ Agency 7.4-T	Date/ 8 - 7 - 1 2 Time 3:30	CUSTODY SEALED YES NO D
Signature (Relinquished)	Printed A Land	Company/ Agency /- A-I	Date/ 8-7-/2	SPECIAL REQUIREMENTS:
Signature (Received) And R	Printed Shabunma	Company/ 77	Date/ 8/7/12 2/13/	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Tìme	IVIO, IVI, FB, ZII
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

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
08/08/12	803084-1	7	2 ml	9-5	9:00 AM	HAV
1	1 -2	1	1	1,	1	1,
08/09/12		9.5	NIA	NIA	HIA	HAV
08/09/12	803114	9.5	NIA	NIA	HIA	HAV
08/10/12	803142-1	9.5	NIA	NIA	NIA	HAV
1	-2	`				
	-3					
	_4					
	-5					
	_6	<u> </u>	1,	1,	1	J
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G 8/14/12 MM 132



Turbidity/pH Check

				Turbio	iity/pH C	heck			
	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
5	803047 (1,Z)	حر	12	8-7-12	BE	30 \0 A		,	
	80304861-30	< 1	72	T T	\.	NO	14200		
-6	0.03055(1-6)	>1	>2	,,	BI	30 HALTTE	13	36	Aciditing a
	503059	71	< 2	8-8-12	BE	301cA			
	803083(1-2)	۲١	72		1		14(100	32-	A Fter Labt
<u> </u>	803084(1-2)	<u> ۲۱</u>	< 2				BL	_	
-	803084(2)	1	> 2				14:00	BE	Aciditial at
-	803063)	42						
	8.3.64	1							
-	803065			,					
	803068								
- 1	803067								
-	803068					,	ł		
-	803069								
	803070					- 1			
	803092(+92)								
-	8.3060		BE >2<2				15-1636	<u> </u>	
	303078(1-2)	۷ ۱	72			NO.	15:40		
	803080U-3)	ì	1			1			
	803081							-	
_	80 30 88 (1-7)	 							-
	803114	الخ	42	8-9-12	Br	3-1.A			
	803103	71	J	1	1	, ,			
	803105 (10-12)	Z i	72	8/9/12	ES	NO	9:00 am		
	803111 (1-15)	Zi	22	1	1	i			
	(21-1) 111 (B)	d_	1						
	20317	>1	<2	8-9-12	BE	3010 A			
	203143-47=9792		₹2	8-10-12	BE	301.4			
	803142 L1-6)	1				3-(
<u> </u>	80384	<u> </u>							
	803135	1			1				
-	803136								
\vdash	8c 31 37								
-	803139				1				
-	803140								
\vdash	803140		1/4			, Y			
\vdash	80 3159	71	42	8-13-12	B Z-	30101			
-	803160	1	72						-
-	803161						·		
-									
·	803162								
	803163				_				-
-	803164								
-	803165	_							
	803166	\		<u> </u>		4			

- Notes:

 1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.

 2. All Total Recoverable Analytes must be pH adjusted and digested.

 3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.

Sample Integrity & Analysis Discrepancy Form

C	lient: <u>E2</u>	Lab # <u>\$030\$4</u>
Di	ate Delivered: 8 / 子 / 12 Time: थैं। 30 By: ロMail め	Field Service
1.	Was a Chain of Custody received and signed?	ØYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÞÍN/A
3 .	Are there any special requirements or notes on the COC?	□Yes □No BN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No DN/A
5 .	Were all requested analyses understood and acceptable?	ØYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>3. / ° C</u>	AYes DNo DN/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Axes ONO ONA
<i>8.</i>	Were sample custody seals intact?	□Yes □No ph/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?	ZeYes □No □N/A
1 1.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☑ Truesdail □ Client	ØYes □No □N/A
12.	Were samples pH checked? pH = Sel C. o. e	✓ ✓ Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	úYes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	Æ(Yes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground W	.11 /
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	d Steaburn

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

September 5, 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 IM3PLANT-WDR-374A PROJECT,

GROUNDWATER MONITORING, TLI NO.: 803181

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-374a project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on August 13, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

The method blank internal standards Germanium (#'s 2 and 3) for Total Chromium and Manganese by EPA 200.8 analyzed in batch 082112A exceeded the recovery limits of 70 % -130%. The method blank was also analyzed in batches 081912B, 082312A, and 082712A and the internal standard recoveries were within the acceptance limits and the raw data is attached. All other QA/QC was within acceptable limits, therefore, the data was accepted.

No other violations or nonconformance 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.

tu - Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

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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: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 803181

Date: August 24, 2012 Collected: August 13, 2012

Received: August 13, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

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Laboratory No.: 803181

Date Received: August 13, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM **P.O. No.:** 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803181-001	SC-700B-WDR-374a	F120 1	NONE	8/13/2012	7:00	EC	7400	umhos/cm	2.00
803181-001	SC-700B-WDR-374a		NONE	8/13/2012	7:00	Chromium	ND	ug/L	1.0
803181-001	SC-700B-WDR-374a		NONE	8/13/2012	7:00	Manganese	1.2	ug/L	0.50
803181-001	SC-700B-WDR-374a		LABFLT	8/13/2012	7:00	Chromium, Hexavalent	ND	ug/L	0.20
803181-001	SC-700B-WDR-374a		NONE	8/13/2012	7:00	Turbidity	ND	NTU	0.100
803181-001	SC-700B-WDR-374a	SM2540C	NONE	8/13/2012	7:00	Total Dissolved Solids	4280	mg/L	250

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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Page 1 of 7

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Printed 8/24/2012

Laboratory No. 803181

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:

Samples Received on 8/13/2012 9:30:00 PM

 Field ID
 Lab ID
 Collected
 Matrix

 SC-700B-WDR-374a
 803181-001
 08/13/2012 07:00
 Water

Specific Conductivity -	EPA 120.1		Batch	08EC12C				
Parameter		Unit Analyzed		DF	MDL	RL	Result	
803181-001 Specific Condu	uctivity	umhos/	umhos/cm 08/15/2012		1.00	0.116	2.00	7400
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	803181-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7390	Expected 7400	R	RPD 0.135	Accepta 0 - 10	ance Range
Lab Control Sample		55		- -1.1				Б.
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 703	Expected 706	K	ecovery 99.6	90 - 110	ance Range)
MRCCS - Secondar	У							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 705	Expected 706	R	decovery 99.8	Accepta 90 - 110	ance Range)
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 969	Expected 998	R	decovery 97.1	Accepta 90 - 110	ance Range)

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 8/24/2012

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Chrome VI by EPA 21	8.6		Batch	08CrH12N				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803181-001 Chromium, H	lexavalent	ug/L	08/14/2012 12:49		1.00	0.0260	0.20	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	803142-005
Parameter	Unit	DF	Result	Expected		RPD	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	36.6	36.7		0.301	0 - 20	
Low Level Calibrat	tion Verification							
Parameter	Unit	ÐF	Result	Expected		Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200		96.0	70 - 130)
Lab Control Samp	le							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	4.74	5.00		94.8	90 - 110)
Matrix Spike							Lab ID =	803142-001
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	6.85	7.16(5.00)		93.7	90 - 110)
Matrix Spike							Lab ID =	803142-002
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	14.2	15.0(10.0)		91.9	90 - 110	
Matrix Spike							Lab ID =	803142-003
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	-	ince Range
Chromium, Hexavalent	ug/L	1.00	14.3	15.0(10.0)		92.5	90 - 110)
Matrix Spike							Lab ID =	803142-004
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery		ince Range
Chromium, Hexavalent	ug/L	1.00	9.68	9.96(5.00)		94.5	90 - 110	
Matrix Spike							Lab ID =	803181-001
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery		ınce Range
Chromium, Hexavalent	ug/L	1.00	1.11	1.18(1.00)		93.2	90 - 110	
Matrix Spike							Lab ID =	803181-001
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	-	ince Range
Chromium, Hexavalent	ug/L	5.00	4.79	5.17(5.00)		92.3	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803181-001 Chromium		ug/L	08/22/	2012 00:28 5	.00	0.195	1.0	ND
Manganese		ug/L			.00	0.270	0.50	1.2
Method Blank								
	Unit	DF	Result					
Parameter Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.176	0.200		87.8	70 - 130	•
Manganese	ug/L	1.00	0.0914	0.100		91.4	70 - 130	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	92.3	100.		92.3	85 - 11	5
Manganese	ug/L	5.00	90.7	100.		90.7	85 - 11	5
Matrix Spike							Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Adde	ed l	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	92.9	101.(100.)		91.7	75 - 12	5
Manganese	ug/L	5.00	90.8	100.(100.)		90.8	75 - 12	5
Matrix Spike Duplicat	te						Lab ID =	803025-001
Parameter	Unit	DF	Result	Expected/Adde	ed l	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	92.9	101.(100.)		91.6	75 - 12	5
Manganese	ug/L	5.00	91.2	100.(100.)		91.2	75 - 12	5
MRCCS - Secondary	Nacional V Xoras e aperes							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Chromium	ug/L	1.00	10.4	10.0		104.	90 - 110	כ
Manganese	ug/L	1.00	10.2	10.0		102.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	1	Recovery	•	ance Range
Chromium	ug/L	1.00	9.74	10.0		97.4	90 - 110	כ
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium	ug/L	1.00	9.78	10.0		97.8	90 - 110	כ



Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Project Project Number: 424973.01.DM			Page 6 of 7 Printed 8/24/2012		
Interference Check S	Standard A							
Parameter Manganese	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Interference Check S		1,00		0.00				
Parameter Manganese	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Interference Check S	Standard AB							
Parameter Chromium Interference Check S	Unit ug/L Standard AB	DF 1.00	Result 9.99	Expected 10.0	Recovery 99.9	Acceptance Range 80 - 120		
Parameter Chromium	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 80 - 120		
Interference Check S					gana a fator de	granda da da da 1915. Antonio		
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.30	Expected 10.0	Recovery 93.0	Acceptance Range 80 - 120		
Interference Check S	Standard AB							
Parameter Manganese	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 80 - 120		
Total Dissolved Solids Parameter	by SM 2540) C Unit		08TDS12C lyzed	DF M D	L RL Result		
803181-001 Total Dissolved	Solids	mg/L	08/14	/2012	1.00 0.757	250. 4280		
Method Blank		14. 7						
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate						Lab ID = 803142-002		
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 1290	Expected 1320	RPD 2.30	Acceptance Range 0 - 5		
Lab Control Sample								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 493	Expected 500.	Recovery 98.6	Acceptance Range 90 - 110		



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Turbidity by SM 2130 B			Bato	h 08TUC12M					
Parameter		Unit	An	alyzed	DF	MDL	RL	Result	
803181-001 Turbidity		NTU	08/1	4/2012	1.00	0.0140	0.100	ND	
Method Blank									
Parameter Turbidity	Unit NTU	DF 1.00	Result ND						
Duplicate							Lab ID =	803181-001	
Parameter Turbidity	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	ince Range	
Lab Control Sample									
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.99	Expected 8.00	F	Recovery 99.9	Accepta 90 - 110	ince Range	
Lab Control Sample	Duplicate								
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.02	Expected 8.00	F	Recovery 100.	Accepta 90 - 110	ince Range	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12C Date Analyzed: 8/13/12

Laboratory Number	Sample volume, ml	lnitial 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,	Reported Value, ppm	DF
Blank	100	72.3862	72.3865	72.3864	0.0001	No	0.0002	2.0	25.0	ND	1
803134	10	47.5150	47.5653	47.565	0.0003	No	0.0500	5000.0	250.0	5000.0	1
803135	10	47.2217	47.2671	47.2671	0.0000	No	0.0454	4540.0	250.0	4540.0	1
803136	5	50.9914	51.0596	51.0595	0.0001	No	0.0681	13620.0	500.0	13620.0	1
803137	10	51.0532	51.1190	51.1186	0.0004	No	0.0654	6540.0	250.0	6540.0	1
803138	10	50.1268	50.1822	50.1821	0.0001	No	0.0553	5530.0	250.0	5530.0	1
803139	10	51.2499	51.3058	51.3058	0.0000	No	0.0559	5590.0	250.0	5590.0	1
803140	10	47.9496	47.9990	47.9990	0.0000	No	0.0494	4940.0	250.0	4940.0	1
803141	10	48.1385	48.2126	48.2122	0.0004	No	0.0737	7370.0	250.0	7370.0	1
803142-1	50	77.5548	77.6105	77.6103	0.0002	No	0.0555	1110.0	50.0	1110.0	1
803142-2	50	68.1284	68.1942	68.1942	0.0000	No	0.0658	1316.0	50.0	1316.0	1
803142-2D	50	68.8042	68.8687	68.8687	0.0000	No	0.0645	1290.0	50.0	1290.0	1
LCS	100	70.8919	70.9415	70.9412	0.0003	No	0.0493	493.0	25.0	493.0	1
803142-3	50	68.1920	68.2593	68.2589	0.0004	No	0.0669	1338.0	50.0	1338.0	1
803142-4	50	78.3996	78.4643	78.4643	0.0000	No	0.0647	1294.0	50.0	1294.0	1
803142-5	50	72.4951	72.5477	72.5476	0.0001	No	0.0525	1050.0	50.0	1050.0	1
803142-6	50	73.5926	73.6527	73.6526	0.0001	No	0.0600	1200.0	50.0	1200.0	1
803181	10	50.4949	50.5378	50.5377	0.0001	No	0.0428	4280.0	250.0	4280.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

Laborator	y Control 3	y Summai	<u>y</u>		
QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	493	500	98.6%	90-110%	Yes
LCSD					

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?	
803142-2	0.0658	0.0645	1.0%	≤5%	Yes	

Jenny T.

Analyst Printed Name

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) \times 10$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

where

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12C
Date Analyzed: 8/13/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803134	6540	0.76	4251	1.18
803135	6180	0.73	4017	1.13
803136	22000	0.62	14300	0.95
803137	8830	0.74	5739.5	1,14
803138	7280	0.76	4732	1.17
803139	7680	0.73	4992	1.12
803140	6720	0.74	4368	1.13
803141	9160	0.80	5954	1.24
803142-1	1720	0.65	1118	0.99
803142-2	1980	0.66	1287	1.02
803142-2D	1980	0.65	1287	1.00
LCS				
803142-3	2000	0.67	1300	1.03
803142-4	1950	0.66	1267.5	1.02
803142-5	1570	0.67	1020.5	1.03
803142-6	1780	0.67	1157	1.04
803181	7400	0.58	4810	0.89
~				





	TRUESDAIL LABORATORIES, INC.
Personal Assessed	14201 Franklin Avenue, Tustin, CA 92780-7008
	(714)730-6239 FAX: (714) 730-6462 www.truesdail.com

DATE

08/13/12

TIME

DESCRIPTION

Water

SAMPLE I.D.

SC-700B-WDR-374a

CHAIN OF CUSTODY RECORD

COC Number

TURNAROUND TIME	10	Days			
DATE 08/13/12	PAGE	1	OF	1	
	TAINERS.	сомм	ENTS		

TOTAL NUMBER OF CONTAINERS

www.	v.truesdail.com	[IMOFIGHT-SYDT-S/44]	303	18	DATE 08/13/12	PAGE 1 OF 1
COMPANY	E2		777	1/		
PROJECT NAME	PG&E Topock				///////////////////////////////////////	COMMENTS
PHONE	(530) 229-3303 FAX (530) 339-3303		/ / / /	/ / ,	///////	/
ADDRESS	155 Grand Ave Ste 1000			//		/
	Oakland, CA 94612	88 / 5' 021/		/ /		
P.O. NUMBER	456827.01.DM TEAM 1	(2007) (400) (400) (400) (400) (400)	(8)	/ / ,		
SAMPLERS (SIGN	ATURE	(2186) Lab 11 Metals (200 off c Conducts (5002540C)	7 (342130)	//	WBER O	



For Sample Conditions See Form Attached

3

CHAIN OF C	USTODY SIGNATURE RECORD			SAMPLE COND	ΠIONS
Signature Printed Name Review	Company/ AGEUPS Agency	Date/ 8-/3-/2 15:30 Time 17:30 200	RECEIVED COO	DL 🗹 WA	RM 1 4.38
Signature Printed Printed Name	Rafa Rompany/ - L - I	Date/8-/3-/2 Time 73-/2	CUSTODY SEALED	YES 🔲	NO 🗹
Signature Printed (Relinquished) Raftec	Ra Lau Agency T-L.	Date/ 8-13-12	SPECIAL REQUIREMENT	S:	
Signature Printed Signature Name Signature	aleuning Agency TL 2	Date/ 2/- 3/12 2/- Time #//3/12 2/-	20		
OBignature Printed (Relinquished) Name	Company/ Agency	Date/ Time			
Signature Printed (Received) Name	Company/ Agency	Date/ Time			

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number		Buffer Added (mL)	Final pH	Time Buffered	Initials
8/14/12	803181	17	2 ml/100 ml	9.5	6:50 Am	(Lu)
						•
						•
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C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

8/17/12 039



Turbidity/pH Check

			Turbic	lity/pH C	heck			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
503156	71	>2	8-13-12	BE	TCLP	Bionn		after filt
203179	٦٠	<2	8-14-12	BE	3010A			
803181	<u> </u>	72	l			10 VALAR		
803188	>1	42						·
803215	>1 21	<u> </u>	8/15/12	ES	ND	10:00 am	8/16/12	PH LZ
803194	フ ١	12	8-15-12	BE	30 loA			
803195								
803196								
803197								
803198								
F=3199			1					
80320761-4	<1	72	T T		No	11 : a AM		
803204	72	12			3010A			
803229	b	1				,		
80 3230 (1-6)	ζ1	72			No	13:00		
803235(1-2)	>1	<2	7		Ades			
803249	1	i.	8-16-12	BŁ	T			
803232(4,8-9)	₹\	72			Ne	10:30		
80322711-31	1							
803237					i			
803238								
803242								
803250	>1				3040A			
803256	1				L	11.00		
86326911-2	くい	72	8-17-12	BE	No	7:30 A	n	
st 5 3227 803272		42	1		3010A			
803275	1							
803280								
893281				- -				
8 0 3 2 8 3								
803217	ار کا	72	 	1	No	12:30		
8-3304	<1	72	8-20-12	13 E-	3010 A	9:30 AM		
(03315	21	42	8-20-12	ES	3010 A	_		
		42				**************************************		N. 1124.0
803316(1-4)	41	72	8/2/1/2	ES		11:van		
803321	71	12	8-21-12		-3 = 10 A			
803376	1	1		7	1			
803327								
8-3328	 		-			-		
503329	· — —		-		 			
8 - 3330	4	4	8-22-12	36	3010A			1
\$03349 (1,2)		12	8-66-16	75	1			
803348 (1-15)	<1					10:00 A	m Aciditizi	after lab
80 33 47 (1-9,11)	<1	>2	10100110	1	20104	10 . 51 11 11	T. ACIONESIA	TOWER CONT.
803 358	71	12_	8/22/12	ES	3010A		<u> </u>	

Notes:

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

Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E2</u>	Lab # <u>80381</u>
Date	Delivered: <u>08</u> 1 <u>13</u> 1 12 Time: <u>2/: 30</u> By: □Mail	科Field Service 口Client
1.	Was a Chain of Custody received and signed?	ØYes □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?	⊈Ŷes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>% 3° C</u>	ØYes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)?	Yes □No □N/A
	Were sample custody seals intact?	OCTYES ONO ANA
	Does the number of samples received agree with COC?	Yes DNo DN/A
)	Did sample labels correspond with the client ID's?	EXYes □No □N/A
	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ÆN/A
	Were samples pH checked? pH = <u>SU</u> C. O. C.	ØYes □No □N/A
	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ସYes □No □N/A
	Have Project due dates been checked and accepted? Furn Around Time (TAT): □ RUSH ☑ Std	ØYes □No □N/A
	Sample Matrix:	
	ISludge □Soil □Wipe □Paint □Solid ,	X10ther Water
С	comments:	· .
S	ample Check-In completed by Truesdail Log-In/Receiving	· Luda Glalen



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

September 11, 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-WDR-374B PROJECT, GROUNDWATER

MONITORING, TLI NO.: 803304

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-374b project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on August 17, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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.

A. Mona Nassimi

Manager, Analytical Services

Michael Ngo

Militaal

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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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: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 803304

Date: September 11, 2012 **Collected:** August 17, 2012

Received: August 17, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Kim Luck
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Himani Vaishnav



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Laboratory No.: 803304

Date Received: August 17, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM **P.O. No.:** 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
		E400.4	NONE	8/17/2012	14:11	EC	7700	umhos/cm	2.00
803304-001 803304-001	SC-700B-WDR-374b SC-700B-WDR-374b		NONE	8/17/2012	14:11	Chromium	1.2	ug/L	1.0
803304-001	SC-700B-WDR-374b		NONE	8/17/2012	14:11	Manganese	1.4	ug/L	1.0
803304-001	SC-700B-WDR-374b		LABFLT	8/17/2012	14:11	Chromium, Hexavalent	1.2	ug/L	0.20
803304-001	SC-700B-WDR-374b		NONE	8/17/2012	14:11	Turbidity	0.105	NTU	0.100
803304-001	SC-700B-WDR-374b		NONE	8/17/2012	14:11	Total Dissolved Solids	4650	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

TRUESDAIL LABORATORIES, INC.

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Printed 9/11/2012

Laboratory No. 803304

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: 456827.01.DM P.O. Number: 456827.01.DM

Release Number:

Samples Received on 8/17/2012 7:50:00 PM

 Field ID
 Lab ID
 Collected
 Matrix

 SC-700B-WDR-374b
 803304-001
 08/17/2012 14:11
 Water

Specific Conductivity -	EPA 120.1		Batch	08EC12E				
Parameter		Unit	Unit Analyzed		DF	MDL	RL	Result
803304-001 Specific Condu	ıctivity	umhos	/cm 08/20	/2012	1.00	0.116	2.00	7700
Method Blank								
Parameter	Unit	DF	Result					
Specific Conductivity	umhos	1.00	ND					
Duplicate							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Specific Conductivity	umhos	1.00	7710	7700		0.130	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	710.	706		100.	90 - 110	ס
MRCCS - Secondar	y							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	707	706		100.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	980.	998		98.2	90 - 110	0

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Printed 9/11/2012

Page 2 of 7

Chrome VI by EPA 218.6	Chrome VI by EPA 218.6			h 08CrH12P				
Parameter		Unit	Ana	alyzed l	DF	MDL	RL	Result
803304-001 Chromium, Hexa	avalent	ug/L	08/2	3/2012 10:58 1	.00	0.0260	0.20	1.2
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	803369-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.284	0.294		3.35	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.186	0.200		92.8	70 - 130	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00		97.1	90 - 110	כ
Matrix Spike							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected/Adde	ed f	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	5.00	25.7	26.1(25.0)		98.2	90 - 110	כ
Matrix Spike							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected/Adde	ed l	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	6.06	6.18(5.00)		97.5	90 - 110)
Matrix Spike							Lab ID =	803348-001
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.956	1.04(1.00)		91.8	90 - 110)
Matrix Spike							Lab ID =	803348-002
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.951	1.03(1.00)		92.3	90 - 110)
Matrix Spike							Lab ID =	803348-003
Parameter	Unit	DF	Result	Expected/Adde	ed l	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.03(1.00)		95.7	90 - 110	כ
Matrix Spike							Lab ID =	803348-004
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.960	1.02(1.00)		94.3	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Page 4 of 7 Printed 9/11/2012

Metals by EPA 200.8, To	otal		Batch	083012A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803304-001 Chromium		ug/L	08/30	/2012 22:38	00.	0.195	1.0	1.2
Manganese		ug/L	08/30	/2012 22:38	00.	0.270	1.0	1.4
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected	F	RPD		ance Range
Chromium	ug/L	5.00	1.05	1.22		14.8	0 - 20	
Manganese	ug/L	5.00	1.40	1.44		2.82	0 - 20	
Low Level Calibration	Nerification	kulling in						
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.164	0.200	82.0		70 - 130	
Manganese	ug/L	1.00	0.188	0.200	94.2		70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accept	ance Range
Chromium	ug/L	5.00	104.	100.		104.	85 - 11	5
Manganese	ug/L	5.00	104.	100.		104.	85 - 11	5
Matrix Spike							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected/Adde	ed f	Recovery	Accept	ance Range
Chromium	ug/L	5.00	112.	101.(100.)		111.	75 - 12	5
Manganese	ug/L	5.00	111.	101.(100.)		110.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accept	ance Range
Chromium	ug/L	1.00	10.7	10.0		107	90 - 11	0
Manganese	ug/L	1.00	10.6	10.0		106.	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accept	ance Range
Chromium	ug/L	1.00	9.86	10.0		98.6	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	İ	Recovery	Accept	ance Range
Chromium	ug/L	1.00	9.95	10.0		99.5	90 - 11	



Report Continued

Client: E2 Consulting	Engineers, Inc.		Project Name: Project Number		PG&E Topock Project 456827.01.DM			Page 6 of 7 Printed 9/11/2012	
Interference Check	Standard AB								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range	
Chromium	ug/L	1.00	10.1	10.0		101.	80 - 120)	
Interference Check	Standard AB								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range	
Chromium	ug/L	1.00	10.0	10.0		100.	80 - 120)	
Interference Check	Standard AB								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range	
Manganese	ug/L	1.00	10.5	10.0		105	80 - 120		
Interference Check	s Standard AB								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range	
Manganese	ug/L	1.00	10.0	10.0		100.	80 - 120	0	
Total Dissolved Solid	s by SM 2540			08TDS12E					
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result	
803304-001 Total Dissolve	ed Solids	mg/L	08/20/	2012	1.00	0.757	250.	4650	
Method Blank									
Parameter	Unit	DF	Result						
Total Dissolved Solids	mg/L	1.00	ND						
Duplicate							Lab ID =	803201-010	
Parameter	Unit	DF	Result	Expected	RPD		Accepta	ance Range	
Total Dissolved Solids	mg/L	1.00	1140	1180		3.10	0 - 10		
Lab Control Sampl	e								
Parameter	Unit	DF	Result	Expected		Recovery		ance Range	
Total Dissolved Solids	mg/L	1.00	490.	500.		98.0	90 - 11	0	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Printed 9/11/2012

Page 7 of 7

Turbidity by SM 2130 B			Batc	h 08TUC12M					
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result	
803304-001 Turbidity		NTU	08/18/2012		1.00	0.0140	0.100	0.105	
Method Blank									
Parameter	Unit	DF	Result						
Turbidity	NTU	1.00	ND						
Duplicate							Lab ID =	803304-001	
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range	
Turbidity	NTU	1.00	0.105	0.105		0.00	0 - 20		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	8.55	8.00		107.	90 - 110)	
Lab Control Sample Du	plicate								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	8.54	8.00		107.	90 - 110		

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12E Date Analyzed: 8/16/12

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	111.3976	111.3981	111.3980	0.0001	No	0.0004	4.0	25.0	ND	1
803201-1	50	74.7084	74.7667	74.7665	0.0002	No	0.0581	1162.0	50.0	1162.0	11
803201-2	50	68.0111	68.0553	68.0553	0.0000	No	0.0442	884.0	50.0	884.0	1
803201-3	50	72.7774	72.8244	72.824	0.0004	No	0.0466	932.0	50.0	932.0	1
803201-4	50	67.2145	67.262	67.2618	0.0002	No	0.0473	946.0	50.0	946.0	11
803201-5	50	75.2050	75.2621	75.262	0.0001	No	0.0570	1140.0	50.0	1140.0	1
803201-6	50	71.3100	71.3449	71.3449	0.0000	No	0.0349	698.0	50.0	698.0	1
803201-7	50	65.6682	65.7206	65.7206	0.0000	No	0.0524	1048.0	50.0	1048.0	1
803201-8	50	67.7023	67.753	67.7526	0.0004	No	0.0503	1006.0	50.0	1006.0	1
803201-9	50	69.5093	69.5711	69.5711	0.0000	No	0.0618	1236.0	50.0	1236.0	1
803201-10	50	76.6767	76.7355	76.7355	0.0000	No	0.0588	1176.0	50.0	1176.0	1
803201-10D	50	69.3409	69.3983	69.3981	0.0002	No	0.0572	1144.0	50,0	1144.0	11
LCS	100	78.3848	78.4339	78.4338	0.0001	No	0.0490	490.0	25.0	490.0	1
803232-10	100	67.1935	67.2315	67.2311	0.0004	No	0.0376	376.0	25.0	376.0	1
803235-1	50	69.4143	69.4744	69.4743	0.0001	No	0.0600	1200.0	50.0	1200.0	1
803238	100	76.5443	76.5644	76.5641	0.0003	No	0.0198	198.0	25.0	198.0	1
803264-1	1000	92.0966	92.1033	92.103	0.0003	No	0.0064	6.4	2.5	6.4	1
803264-2	1000	112.8925	112.8982	112.8981	0.0001	No	0.0056	5.6	2.5	5.6	1
803304	10	47.9500	47.9967	47.9965	0.0002	No	0.0465	4650.0	250.0	4650.0	1
803313	200	103.7342	103.7378	103.7378	0.0000	No	0.0036	18.0	12.5	18.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

LUDOIGIOI	<i>y</i>	1111pic 1200	, caiiiii	<i>z</i>		
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						

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?	
803201-10	0.0588	0:0572	1.4%	≤5%	Yes	

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

% Difference =
$$\frac{\left|\frac{1}{A \text{ or } B - C}\right|}{C} \times 100$$

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12E

Date Analyzed: 8/16/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803201-1	1670	0.70	1085.5	1.07
803201-2	1330	0.66	864.5	1.02
803201-3	1380	0.68	897	1.04
803201-4	1410	0.67	916.5	1.03
803201-5	1510	0.75	981.5	1.16
803201-6	1140	0.61	741	0.94
803201-7	1440	0.73	936	1.12
803201-8	1710	0.59	1111.5	0.91
803201-9	1750	0.71	1137.5	1.09
803201-10	1690	0.70	1098.5	1.07
803201-10D	1690	0.68	1098.5	1.04
LCS				
803232-10	642	0.59	417.3	0.90
803235-1	1947	0.62	1265.55	0.95
803238	331	0,60	215.15	0.92
803264-1	10	0.64	6.5	0.98
803264-2	9.67	0.58	6.2855	0.89
803304	7740	0.60	5031	0.92
803313	33	0.55	21.45	0.84



Sy

_	TRUESDAIL LABORATORIES, INC.
	14201 Franklin Avenue, Tustin, CA 92780-7008
	(714)730-6239 FAX: (714) 730-6462 www.truesdail.com
	WWW.tidesudii.com

CHAIN OF CUSTODY RECORD [IM3Plant-WDR-374b]

803304

COC Number

TURNAROUND TIME	10	Days		
DATE 08/17/12	PAGE		OF	1

											0											<u>.</u>
COMPANY	E2					***************************************	7	\overline{I}	7	$\overline{\mathcal{I}}$	7	7	7	7	7	$\overline{}$	7	7	//	7	·	7
PROJECT NAME	PG&E Topock									/				,	,	,	/			/	COMMENTS	
PHONE	(530) 229-3303		fax <u>(53</u> 0)) 339-3303		/	/ /	/ /	/ /	/	/	Rec'o	[!] 08	/17/1 3 3	2	<u> </u>	, /	/	/ / /	/		
ADDRESS	155 Grand Ave	Ste 1000	anandikaan.					s /=			/	323 0	ν υ ' /	/	/	/			CONTAINERS			
	Oakland, CA 94	1612	nautracopyda.			/ 2	/ 🗻	Z \ 25		/	/ /	/ /					/	/				
P.O. NUMBER	456827.01.DM		TEAM	1	/	5 Fillered	76.0%	tance /	/ /		(jg /			/ ,	/ ,	/ /	/	/	[§			
SAMPLERS (SIGNA	ATURE	·Kmqu	t			Total Metal.	Sin / 5	TDS (SMp.c.)	30 /	Turbidity (Suc.		/ /	/ /						6 4			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	Cr6 (218 F.)	OBI/M	Pecific	85/80	/ /	urbidity	/ /	' /				/ /	/ .	NUMBE				
SAMI CE I.D.		DATE	T		1 -			/ 		~/			4	4	-			<u> </u>	<i>{</i>	<u> </u>		ᅪ
SC-700B-WDI	R-374b	08/17/12	14:11	Water	х	х	Х	х		Х								3		pu	=6(20	0.7
																		3	TOTAL NU	MBER OF	CONTAINERS	



For Sample Conditions See Form Altached

CHAIN	OF CUSTODY SIG	SAMPLE CONDITIONS				
Signature (Relinquished) C-Kung ut Print		Company/ Agency CH2Mft7CL	Date/ 8.17-12- Time 14:15	RECEIVED COOL WARM 1 4. P.C		
Signature Printe (Received) Name	///////////////////////////////////////	Company/ Agency	Date/ 8-17-12 Time 8-17-12	CUSTODY SEALED YES NO		
Signature Printe (Relinquished) Nam	741 /12/163	Company/ //// Agency	Date/ 8-17-13-8	SPECIAL REQUIREMENTS:		
		Company/ TZJ Agency	Date/ 8/14/2 19/	$ \mathcal{C}_{\mathcal{O}} $		
Bignature Printe (Relinquished) Name		Company/ Agency	Date/ Time	11 -		
Signature Printe (Received) Name		Company/ Agency	Date/ Time			

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

D-4-	I a la Mariante	1	5 6 4 11 17 18	T		T
Date	Lab Number		Buffer Added (mL)		Time Buffered	Initials
08/08/12		7	2 ml	9-5	9:00 AM	HAV
<u> </u>	1 -2	7	L 4	1,	4	1
08/09/12	803005	9.5	NIA	NIA	HIA	HAV
08/09/12	803114	9.5	NIA	NIA	NIA	HAV
08/10/12	803142-1	9.5	NNA	NIA	NIA	HAV
	72	Ì	·			1
	-3		·			
	-4					
	-5					
	-6		J.	J,	J.	
8/14/12	803/91-1	7) mL	9.5	17:00	Mig
<i>'</i> ‡ .	+ -2	+	1	+	17-70	1
8/15/12	803238	7	ImL	9.5	18:00	49
8/17/12	803304	7	5 ml/250 ml	9.5	8 pm	H.L
08/22/12	80 3347-1	7	2 ml	9.5	8:40 AM	HAV
	-2				8: 50 AM)
	-3				8: 55 AM	
	-4				9:05 AM	
	- 3				9:10 Am	
	-6		·		9:20 AM	
	~ 7				9:25 AM	
	-8				9:30 AM	
	-9				9:210 AM	
	-10				9:50 AM	
ا را	J11	J	<u> </u>		10:00 AM	
08/22/12	803348-1	9.5	HIA	NA		HAV
	-2					1
	-3					
	-4					
	-5					
J,	1, -6	J.	<u> </u>	1	1.	1

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

Q 8/27/12

1AV 08124112 138





Turbidity/pH Check

Turbidity/pH Check									
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments	
503156	71	>2	8-13-12	BE	TCLP	8:00Am		after filt	
303179	۲۱	<2	8-14-12	BE	3010A				
803181	1.	72				to large	.		
803188	>1	12							
803215	>1 21	<u> </u>	8/15/12	E)	No	10:00 am	8/16/12	PHL2	
803194	71	42	8-15-12	BE	30 10A				
803195									
803196									
803197									
803198									
8-3199		J.							
80320761-4	<1	72			No	11 La AM			
803204	72	22			3010A				
803229	4	,			4				
80 3230 L1-6)	<u> ۲</u> ۱	72			No	13:40			
8032341-2)	>1	42	1	V	A44S				
803249		1	8-16-12	BŁ	T				
803232(4,8-9)	Κί	72			No	10:30			
80322711-31									
803237					i				
803238									
803242					7				
803250	>1				3040A				
803256	7.	1	7			00-11			
86326911-2	ا	72	8-17-12	BE	No	7:30 A	n		
t 50 3227 803272		42			3010A				
803275									
803280									
803281									
803283									
803297	۲۱	72	1.		₩ 0	12:30			
813304	<1	72	8-20-12	Bt-	3010 A	9:30 AM			
803315	41	42	8-20-12	ES	3010 A	_			
803316(1-15)	1	L 2	T	T					
803721	41	72	8/21/12	ES		11:00 an			
803376	71	12	8-21-12		3-101				
8 6 3 3 2 7	1								
8-3328									
803329	+ + -								
803330	4	. <2	8-22-12	36	3010A				
803349 (1,2)	7	12	10000	1					
803348 (1-15)					-	10:00 A	m Aciditial	after lab	
80 33 47 C1-9,11		<u>}</u> 2	8/22/12	ES	3010 A	<i>n</i>			
803 358	71	42	1816616	(C)	701079	1	<u> </u>		

- Notes:

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

Sample Integrity & Analysis Discrepancy Form

C	lient: <u>E2</u>	Lab # <u>803309</u>
Da	ate Delivered: ビミノ <u>パ</u> ナ 12 Time: <u>/タ゚ 5</u> ♡ By: ロMail 女F	Field Service
1.	Was a Chain of Custody received and signed?	AYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÞNA
<i>3.</i>	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 ØN/A
5.	Were all requested analyses understood and acceptable?	₽ŶYes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? 46°C	AYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	
8.	Were sample custody seals intact?	□Yes □No ŒNA
9.	Does the number of samples received agree with COC?	₽Ŷes □No □N/A
10.	Did sample labels correspond with the client ID's?	र्द्धYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: Matrices dail □ Client	Yes ONO ON/A
2.	Were samples pH checked? pH = <u>\$\frac{1}{2}C_0C_0C_0C_0C_0C_0C_0C_0C_0C_0C_0C_0C_0C</u>	ÆYes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	✓Yes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	Yes □No □N/A
5 .	Sample Matrix: □Liquid □Drinking Water □Ground Wa	
i.	Comments:	
,	Sample Check-In completed by Truesdail Log-In/Receiving	1. Shabyuir

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

October 4, 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-WDR-375 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 803349

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-375 project groundwater monitoring. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on August 21, 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 internal standards for sample SC-701-WDR-375 analyzed at a 5x dilution for Total Beryllium, Cobalt, Selenium, and Vanadium by EPA 200.8 in batch 092712A were outside the recovery limits of 70% - 130%. Therefore, the sample was re-analyzed at a 10x dilution and the internal standards were within acceptable limits. Due to the dilution, the reporting limit for these metals exceed the Contract Required Detection Limit. All other QA/QC was within acceptable limits.

No other violations or nonconformance 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.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters Project Name: PG&E Topock Project

Project No.: 456827.01.DM

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

Laboratory No.: 803349

Date: October 4, 2012 Collected: August 21, 2012 Received: August 21, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST				
EPA 120.1	Specific Conductivity	Gautam Savani				
SM 2540C Total Dissolved Solids		Jenny Tankunakorn				
SM 2130B Turbidity		Gautam Savani				
EPA 300.0	Anions	Giawad Ghenniwa				
EPA 200.7	Metals by ICP	Ethel Suico				
EPA 200.8 Metals by ICP/MS		Katia Kiarashpoor / Bita Emami				
EPA 218.6 Hexavalent Chromium		Himani Vaishnav				



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

Laboratory No.: 803349

Date Received: August 21, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM **P.O. No.:** 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803349-001	SC-700B-WDR-375	E120.1	NONE	8/21/2012	13:00	EC	7410	umhos/cm	2.00
803349-001	SC-700B-WDR-375	E200.8	NONE	8/21/2012	13:00	Chromium	ND	ug/L	1.0
803349-001	SC-700B-WDR-375	E200.8	NONE	8/21/2012	13:00	Manganese	2.2	ug/L	1.0
803349-001	SC-700B-WDR-375	E218.6	LABFLT	8/21/2012	13:00	Chromium, Hexavalent	0.27	ug/L	0.20
803349-001	SC-700B-WDR-375	SM2130B	NONE	8/21/2012	13:00	Turbidity	ND	NTU	0.100
803349-001	SC-700B-WDR-375	SM2540C	NONE	8/21/2012	13:00	Total Dissolved Solids	4790	mg/L	250



		Analysis	Extraction	Sample	Sample	_			ъ.
Lab Sample ID	Field ID	Method	Method	Date	Time	Parameter	Result	Units	RL
803349-002	SC-701-WDR-375	E120.1	NONE	8/21/2012	13:00	EC	43800	umhos/cm	2.00
803349-002	SC-701-WDR-375	E200.7	NONE	8/21/2012	13:00	Zinc	ND	ug/L	10.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Antimony	ND	ug/L	5.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Arsenic	0.74	ug/L	0.50
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Barium	85.6	ug/L	5.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Beryllium	ND	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Cadmium	ND	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Chromium	4.3	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Cobalt	ND	ug/L	10.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Copper	ND	ug/L	5.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Lead	ND	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Manganese	23.7	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Mercury	ND	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Molybdenum	148	ug/L	5.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Nickel	7.0	ug/L	2.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Selenium	27.0	ug/L	10.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Silver	ND	ug/L	5.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Thallium	1.1	ug/L	1.0
803349-002	SC-701-WDR-375	E200.8	NONE	8/21/2012	13:00	Vanadium	ND	ug/L	10.0
803349-002	SC-701-WDR-375	E218.6	LABFLT	8/21/2012	13:00	Chromium, Hexavalent	3.0	ug/L	2.0
803349-002	SC-701-WDR-375	E300	NONE	8/21/2012	13:00	Fluoride	15.5	mg/L	0.500
803349-002	SC-701-WDR-375	SM2540C	NONE	8/21/2012	13:00	Total Dissolved Solids	35100	mg/L	1250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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Printed 10/4/2012

Laboratory No. 803349

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: 456827.01.DM P.O. Number: 456827.01.DM

Release Number:

Field ID

SC-700B-WDR-375

SC-701-WDR-375

Samples Received on 8/21/2012 9:30:00 PM

 Lab ID
 Collected
 Matrix

 803349-001
 08/21/2012 13:00
 Water

 803349-002
 08/21/2012 13:00
 Water

Anions By I.C EPA		Unit						
Parameter	Parameter		Ana	lyzed	DF	MDL	RL	Result
803349-002 Fluoride		mg/L	08/22	2/2012 11:33	5.00	0.155	0.500	15.5
Method Blank								
Parameter	Unit	DF	Result					
Fluoride	mg/L	1.00	ND					
Nitrate as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID =	803318-005
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Fluoride	mg/L	1.00	ND	0.218		0	0 - 20	
Duplicate							Lab ID = 803348-001	
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Nitrate as Nitrogen	mg/L	1.00	ND	0.337		0	0 - 20	
Lab Control Samp	le							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Fluoride	mg/L	1.00	4.13	4.00		103.	90 - 110	
Nitrate as Nitrogen	mg/L	1.00	4.04	4.00		101.	90 - 110	
Matrix Spike							Lab ID = 8	803318-005
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range
Fluoride	mg/L	1.00	2.30	2.22(2.00)		104.	85 - 115	
Matrix Spike							Lab ID =	803348-001
Parameter	Unit	DF	Result	Expected/Adde	ed f	Recovery	Accepta	nce Range
Nitrate as Nitrogen	mg/L	1.00	2.42	2.34(2.00)		104.	85 - 115	

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 production from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

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Project Number: 456827.01.DM

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Specific Conductivity - E		Batch	08EC12F					
Parameter 803349-001 Specific Conductivity 803349-002 Specific Conductivity		Unit	Ana	lyzed	DF	MDL	RL	Result
		umhos/c	m 08/24	/2012	1.00	0.116	2.00	7410
		umhos/c	m 08/24	08/24/2012		0.116	2.00	43800
Method Blank								
Parameter	Unit	ÐF	Result					
Specific Conductivity	umhos	1.00	ND					
Duplicate							Lab ID =	803348-007
Parameter	Unit	DF	Result	Expected	F	RPD	•	ance Range
Specific Conductivity	umhos	1.00	891	890.		0.112	0 - 10	
Duplicate							Lab ID = 803349-00	
Parameter	Unit	DF	Result	esult Expected		RPD		ance Range
Specific Conductivity	umhos	1.00	43800	43800	0.00		0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Specific Conductivity	umhos	1.00	710.	706		100.	90 - 110	ס
Lab Control Sample D	Ouplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Specific Conductivity	umhos	1.00	709	706		100.	90 - 110	כ
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	712	706	101.		90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	980.	998		98.2	90 - 110	ס
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Specific Conductivity	umhos	1.00	972	998		97.4	90 - 11)



Client: E2 Consulting Engineers, Inc.

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Parameter	Unit	Ana	lyzed	DF	MDL	RL	Result	
803349-001 Chromium, Hexavalent 803349-002 Chromium, Hexavalent		ug/L	08/29	08/29/2012 10:34		0.0250 0.250	0.20	0.27 3.0
		ug/L	08/29/2012 12:19		10.0		2.0	
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	803349-00
Parameter	Unit	DF	Result	Expected		RPD	•	ance Rang
Chromium, Hexavalent	ug/L	1.00	0.290	0.274		5.84	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	0.194	0.200		96.9	70 - 130	כ
Lab Control Sample								
Parameter	arameter Unit		Result	Expected		Recovery	Acceptance Ran	
Chromium, Hexavalent	ug/L	1.00	4.92	5.00		98.3	90 - 110	
Matrix Spike							Lab ID =	803347-00
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	5.69	6.01(5.00)		93.6	90 - 110	ס
Matrix Spike							Lab ID =	803347-00
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	•	ance Rang
Chromium, Hexavalent	ug/L	1.00	1.07	1.11(1.00)		95.7	90 - 110	ס
Matrix Spike							Lab ID =	803347-00
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	0.991	1.00(1.00)		99.1	90 - 110	0
Matrix Spike							Lab ID =	803347-00
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	9.01	9.09(5.00)		98.3	90 - 110	0
Matrix Spike							Lab ID =	803347-00
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	1.58	1.62(1.00)		96.4	90 - 11	0
Matrix Spike							Lab ID =	803347-00
Parameter	Unit	DF	Result	Expected/Ad	dded	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	1.80	1.80(1.00)		101.	90 - 11	0



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Matrix Spike						Lab ID = 803347-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.19	Expected/Added 1.21(1.00)	Recovery 98.0	Acceptance Range 90 - 110 Lab ID = 803347-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.34	Expected/Added 1.34(1.00)	Recovery 99.9	Acceptance Range 90 - 110 Lab ID = 803347-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.27	Expected/Added 1.28(1.00)	Recovery 98.4	Acceptance Range 90 - 110 Lab ID = 803347-010
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 15.4	Expected/Added 15.6(10.0)	Recovery 97.9	Acceptance Range 90 - 110 Lab ID = 803347-011
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.86	Expected/Added 1.87(1.00)	Recovery 99.2	Acceptance Range 90 - 110 Lab ID = 803349-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.26	Expected/Added 1.27(1.00)	Recovery 98.3	Acceptance Range 90 - 110 Lab ID = 803349-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 8.03	Expected/Added 8.08(5.00)	Recovery 99.0	Acceptance Range 90 - 110 Lab ID = 803349-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 10.0	Result 12.2	Expected/Added 13.0(10.0)	Recovery 91.5	Acceptance Range 90 - 110 Lab ID = 803349-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.00	Expected/Added 1.00(1.00)	Recovery 0.00	Acceptance Range 90 - 110 Lab ID = 803486-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.19	Expected/Added 1.24(1.00)	Recovery 95.3	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.94	Expected 5.00	Recovery 98.8	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105

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Project Name: PG&E Topock Project

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Parameter 303349-002 Zinc		Unit	Ana	alyzed	DF	MDL	RL	Result
		ug/L	08/28/2012 14:42		1.00	1.60	10.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Iron	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected		RPD	•	ance Range
Iron	ug/L	1.00	ND	0.00		0	0 - 20	
Zinc	ug/L	1.00	ND	0.00		0	0 - 20	
Boron	ug/L	1.00	912.	956		4.75	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Iron	ug/L	1.00	102.	100.		102.	85 - 11	5
Zinc	ug/L	1.00	104.	100.		104.	85 - 11	5
Boron	ug/L	1.00	99.0	100.		99.0	85 - 11	5
Matrix Spike							Lab ID =	803304-00
Parameter	Unit	DF	Result	Expected/Ad	lded	Recovery	Accepta	ance Range
Iron	ug/L	1.00	109.	100.(100.)		109.	75 - 12	5
Zinc	ug/L	1.00	123.	100.(100.)		123.	75 - 12	5
Boron	ug/L	1.00	2720	2960(2000)		88.2	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Iron	ug/L	1.00	5240	5000		105.	95 - 10	5
Zinc	ug/L	1.00	5140	5000		103.	95 - 10	5
Boron	ug/L	1.00	5210	5000		104.	95 - 10	5
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Iron	ug/L	1.00	5320	5000		106.	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Iron	ug/L	1.00	5130	5000		102.	90 - 11	0



Client: E2 Consulting Engineers, Inc.

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Metals by EPA 200.8, Tota			1 082312B				
Parameter 803349-002 Mercury		Unit	Ana	alyzed [OF MDL	RL	Result
		ug/L	08/24/2012 01:03		.00 0.120	1.0	ND
Method Blank							
Parameter	Unit	DF	Result				
Mercury	ug/L	1.00	ND				
Duplicate						Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected	RPD		ance Range
Mercury	ug/L	5.00	ND	0.00	0	0 - 20	
Low Level Calibration Ve	erification						
Parameter	Unit	DF	Result	Expected	Recovery	•	ance Range
Mercury	ug/L	1.00	0.180	0.200	89.8	70 - 130	כ
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Mercury	ug/L	5.00	18.8	20.0	93.8	85 - 11	5
Matrix Spike						Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected/Adde	-	•	ance Range
Mercury	ug/L	5.00	16.2	20.0(20.0)	81.0	75 - 12	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery		ance Range
Mercury	ug/L	1.00	2.12	2.00	106.	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	•	ance Range
Mercury	ug/L	1.00	1.90	2.00	95.1	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Mercury	ug/L	1.00	1.93	2.00	96.4	90 - 11	0
Interference Check Star	idard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Mercury	ug/L	1.00	ND	0.00			
Interference Check Star	ndard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Mercury	ug/L	1.00	ND	0.00			



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Metals by EPA 200.8, To	otal		Batch	083012A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803349-001 Chromium		ug/L	08/30	/2012 23:06	5.00	0.195	1.0	ND
Manganese		ug/L	08/30	/2012 23:06	5.00	0.270	1.0	2.2
803349-002 Barium		ug/L	08/30	/2012 23:21	5.00	0.205	5.0	85.6
Chromium		ug/L	08/30	/2012 23:21	5.00	0.195	1.0	4.3
Lead		ug/L	08/30	/2012 23:21	5.00	0.265	1.0	ND
Manganese		ug/L	08/30	/2012 23:21	5.00	0.270	1.0	23.7
Method Blank	Par Journal							
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Lead	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	803304-001
Parameter	Unit	DF	Result	Result Expected RPD		Accept	ance Range	
Barium	ug/L	5.00	ND	0.00		0	0 - 20	
Chromium	ug/L	5.00	1.05	1.22		14.8	0 - 20	
Lead	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	1.40	1.44		2.82	0 - 20	
Low Level Calibratio	n Verification	1						
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accept	ance Range
Barium	ug/L	1.00	1.04	1.00		104.	70 - 13	0
Chromium	ug/L	1.00	0.164	0.200		82.0	70 - 13	0
Lead	ug/L	1.00	0.182	0.200		90.8	70 - 13	0
Manganese	ug/L	1.00	0.188	0.200		94.2	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Barium	ug/L	5.00	110.	100.		110.	85 - 11	5
Chromium	ug/L	5.00	104.	100.		104.	85 - 11	5
Lead	ug/L	5.00	111	100.		111	85 - 11	5
Manganese	ug/L	5.00	104.	100.		104.	85 - 11	5
5								



Client: E2 Consulting Engineers, Inc.

Project Name:

PG&E Topock Project

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		PI	oject Mumber	1. 4000Z1.U1.DN	ı	Printed 10/4/2012
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	1.00	ND	0.00		
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	1.00	ND	0.00		
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.5	10.0	105	80 - 120
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.0	10.0	100.	80 - 120
Serial Dilution						Lab ID = 803349-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	88.9	85.6	3.83	0 - 10
Manganese	ug/L	25.0	22.3	23.7	6.04	0 - 10



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Parameter		Unit	Ana	lyzed [DF	MDL	RL	Result
803349-002 Arsenic		ug/L	09/06	/2012 01:38 5	.00	0.265	0.50	0.74
Copper		ug/L	09/06	/2012 01:38 5	.00	0.235	5.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Copper	ug/L	1.00	ND					
Duplicate							Lab ID =	803304-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	ance Range
Arsenic	ug/L	5.00	ND	0.00		0	0 - 20	
Copper	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibrati	on Verification							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Arsenic	ug/L	1.00	0.127	0.100		127.	70 - 130	כ
Copper	ug/L	1.00	1.05	1.00		105.	70 - 130)
Lab Control Sample	e //////////							
Parameter	Unit	DF	Result	Expected	R	ecovery	•	ance Range
Arsenic	ug/L	5.00	104.	100.		104.	85 - 11	5
Copper	ug/L	5.00	107.	100.		107.	85 - 11	5
Matrix Spike							Lab ID =	803304-00
Parameter	Unit	DF	Result	Expected/Adde	ed R	lecovery	•	ance Range
Arsenic	ug/L	5.00	105.	100.(100.)		105.	75 - 12	5
Copper	ug/L	5.00	103.	100.(100.)		103.	75 - 12	5
Matrix Spike Duplic	cate						Lab ID =	803304-00
Parameter	Unit	DF	Result	Expected/Adde	ed R	Recovery	· ·	ance Range
Arsenic	ug/L	5.00	104.	100.(100.)		104.	75 - 12	5
Copper	ug/L	5.00	104.	100.(100.)		104.	75 - 12	5
MRCCS - Seconda	ary de la company							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Arsenic	ug/L	1.00	9.89	10.0		98.9	90 - 11	
Copper	ug/L	1.00	10.0	10.0		100.	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Range
Arsenic	ug/L	1.00	9.78	10.0		97.8	90 - 11	0



Client: E2 Consulting Engineers, Inc.

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90 - 110

103.

Batch 092012A Metals by EPA 200.8, Total MDL Result DF RL Unit Analyzed Parameter 5.0 ND 09/20/2012 21:30 5.00 0.420 803349-002 Antimony ug/L 7.0 5.00 0.355 2.0 09/20/2012 21:30 ug/L Nickel Method Blank Unit DF Result Parameter ND ug/L 1.00 Nickel ND ug/L 1.00 Antimony Low Level Calibration Verification DF Expected Recovery Acceptance Range Result Unit Parameter 0.400 99.5 70 - 130 0.398 1.00 ug/L Nickel 70 - 130 0.883 1.00 88.3 1.00 ug/L Antimony Lab Control Sample Acceptance Range Expected Recovery Unit DF Result Parameter 94.6 85 - 115 100. ug/L 5.00 94.6 Nickel 103. 85 - 115 100. 103. ug/L 5.00 Antimony Lab ID = 803859-001 Matrix Spike Acceptance Range Expected/Added Recovery DF Result Unit Parameter 75 - 125 101. 100.(100.) 101. 5.00 ug/L Nickel 75 - 125 109. 100.(100.) 5.00 109. ug/L Antimony Lab ID = 803859-001 Matrix Spike Duplicate Recovery Acceptance Range Result Expected/Added Unit DF Parameter 100.(100.) 99.4 75 - 125 99.4 ug/L 5.00 Nickel 75 - 125 103. 100.(100.) 5.00 103. ug/L Antimony MRCCS - Secondary Acceptance Range Recovery DF Result Expected Unit Parameter 90 - 110 103. 51.7 50.0 1.00 ug/L Nickel 105. 90 - 110 50.0 1.00 52.4 ug/L Antimony MRCVS - Primary Recovery Acceptance Range DF Result Expected Unit Parameter 90 - 110 106 50.0 ug/L 1.00 53.0 Nickel MRCVS - Primary Acceptance Range Recovery Result Expected Unit DF Parameter 109. 90 - 110 1.00 54.6 50.0 ug/L Nickel

50.0

51.6

1.00

ug/L

Antimony



Client: E2 Consulting Engineers, Inc.

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Metals by EPA 200.8, To	itai			092112A		MDI	וח	Dogult
Parameter		Unit		yzed	DF	MDL	RL	Result
303349-002 Molybdenum	,	ug/L	09/21	/2012 16:28	5.00	0.150	5.0	148
Method Blank								
Parameter	Unit	DF	Result					
Molybdenum	ug/L	1.00	ND					
Duplicate							Lab ID =	803859-00
Parameter	Unit	DF	Result	Expected		RPD	•	ance Rang
Molybdenum	ug/L	5.00	20.8	20.3		2.29	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Rang
Molybdenum	ug/L	1.00	0.963	1.00		96.3	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	-		Acceptance R		
Molybdenum	ug/L	5.00	101.	100. 101.		85 - 11		
Matrix Spike							Lab ID =	= 803859-00
Parameter	Unit	DF	Result	Expected/Add	led	Recovery	•	ance Rang
Molybdenum	ug/L	5.00	120.	120.(100.)		99.8	75 - 12	
Matrix Spike Duplica	te							= 803859-00
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	•	ance Rang
Molybdenum	ug/L	5.00	121.	120.(100.)		101.	75 - 12	5
MRCCS - Secondary	filika ya							
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Rang
Molybdenum	ug/L	1.00	46.6	50.0		93.1	90 - 11	U
MRCVS - Primary								11.
Parameter	Unit	DF	Result	Expected		Recovery		ance Rang
Molybdenum	ug/L	1.00	52.2	50.0		104.	90 - 11	U .
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Rang
Molybdenum	ug/L	1.00	53.8	50.0		108.	90 - 11	U
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	tance Ranç
Molybdenum	ug/L	1.00	52.4	50.0		105.	90 - 11	U



Report Continued

Client: E2 Consulting Eng	jineers, Ind		Project Name: Project Number:	PG&E Topock I 456827.01.DM	Project	Page 23 of 32 Printed 10/4/2012
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	51.7	50.0	103.	90 - 110
Interference Check Sta	andard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0.00		
Interference Check Sta	andard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0.00		
Interference Check Sta	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0.00		
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0.00		
Serial Dilution						Lab ID = 803349-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Molybdenum	ug/L	25.0	157.	148	6.16	0 - 10



Client: E2 Consulting Engineers, Inc.

PG&E Topock Project Project Name:

Project Number: 456827.01.DM

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Metals by EPA 200.8, T	otal		Batch	092712A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803349-002 Beryllium		ug/L	09/27	/2012 20:24	10.0	0.280	1.0	ND
Cadmium		ug/L	09/27	/2012 20:10	5.00	0.135	1.0	ND
Cobalt		ug/L	09/27	/2012 20:24	10.0	0.540	10.0	ND
Selenium		ug/L	09/27	/2012 20:24	10.0	0.710	10.0	27.0
Thallium		ug/L	09/27	/2012 20:10	5.00	0.265	1.0	1.1
Vanadium		ug/L	09/27	/2012 20:24	10.0	0.650	10.0	ND
Method Blank	taya ya ka da ka ka ka ka ka ka ka ka ka ka ka ka ka							
Parameter	Unit	DF	Result					
Beryllium	ug/L	1.00	ND					
Cadmium	ug/L	1.00	ND					
Cobalt	ug/L	1.00	ND					
Selenium	ug/L	1.00	ND					
Thallium	ug/L	1.00	ND					
Vanadium	ug/L	1.00	ND					
Duplicate							Lab ID =	803980-001
Parameter	Unit	DF	Result	Expected	F	RPD	•	ance Range
Beryllium	ug/L	5.00	ND	0.00		0	0 - 20	
Cadmium	ug/L	5.00	ND	0.00		0	0 - 20	
Cobalt	ug/L	5.00	ND	0.00		0	0 - 20	
Selenium	ug/L	5.00	ND	0.00		0	0 - 20	
Thallium	ug/L	5.00	ND	0.00		0	0 - 20	
Vanadium	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration	on Verification	North Addition						
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Beryllium	ug/L	1.00	0.100	0.100		100.	70 - 13	
Cadmium	ug/L	1.00	0.196	0.200		98.0	70 - 13	
Cobalt	ug/L	1.00	1.00	1.00		100.	70 - 13	
Selenium	ug/L	1.00	0.989	1.00		98.9	70 - 13	
Thallium	ug/L	1.00	0.208	0.200		104.	70 - 13	
Vanadium	ug/L	1.00	0.999	1.00		99.9	70 - 13	D



Client: E2 Consulting Engineers, Inc.	Project Name:	PG&E Topock Project	Page 25 of 32
	Project Number:	: 456827.01.DM	Printed 10/4/2012

Lab Cantual Canada						
Lab Control Sample	in en en jeder de jeder. Benedikanski	PE	D14	Type stad	Doogyony	Accontance Bange
Parameter	Unit	DF 5.00	Result 96.7	Expected 100.	Recovery 96.7	Acceptance Range 85 - 115
Beryllium	ug/L		96.7 96.5	100.	96.5	85 - 115
Cadmium	ug/L	5.00	94.2	100.	94.2	85 - 115
Cobalt	ug/L	5.00		100.	94.8	85 - 115
Selenium	ug/L	5.00	94.8		94.0 96.4	85 - 115
Thallium	ug/L	5.00	96.4	100.		85 - 115
Vanadium	ug/L	5.00	92.4	100.	92.4	
Matrix Spike						Lab ID = 803980-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Beryllium	ug/L	5.00	94.0	100.(100.)	94.0	75 - 125
Cadmium	ug/L	5.00	83.4	100.(100.)	83.4	75 - 125
Cobalt	ug/L	5.00	93.8	100.(100.)	93.8	75 - 125
Selenium	ug/L	5.00	97.7	100.(100.)	97.7	75 - 125
Thallium	ug/L	5.00	87.3	100.(100.)	87.3	75 - 125
Vanadium	ug/L	5.00	99.7	100.(100.)	99.7	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	18.9	20.0	94.6	90 - 110
Cadmium	ug/L	1.00	18.4	20.0	92.0	90 - 110
Cobalt	ug/L	1.00	18.4	20.0	92.0	90 - 110
Selenium	ug/L	1.00	18.6	20.0	93.0	90 - 110
Thallium	ug/L	1.00	18.2	20.0	90.8	90 - 110
Vanadium	ug/L	1.00	18.6	20.0	93.0	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	18.9	20.0	94.5	90 - 110
MRCVS - Primary	San San San San San San San San San San					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	19.1	20.0	95.6	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	19.2	20.0	95.8	90 - 110
MRCVS - Primary	iga -					
and the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second o	Unit	DF	Result	Expected	Recovery	Acceptance Range
Parameter Beryllium	ug/L	1.00	18.9	20.0	94.4	90 - 110
Derymum	~g, _		. = . =			

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 products.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Metals by EPA 200.8, T			100212B					
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
03349-002 Silver		ug/L	10/02	/2012 23:48	5.00	0.125	5.0	ND
Method Blank								
Parameter Silver	Unit ug/L	DF 1.00	Result ND					
Duplicate							Lab ID =	803980-001
Parameter Silver	Unit ug/L	DF 5.00	Result ND	Expected 0.00	1	RPD 0	Accepta 0 - 20	ance Range
Low Level Calibratio	n Verification							
Parameter Silver	Unit ug/L	DF 1.00	Result 1.10	Expected 1.00		Recovery 110.	Accept 70 - 13	ance Range 0
Lab Control Sample								
Parameter Silver	Unit ug/L	DF 5.00	Result 91.0	Expected 100.		Recovery 91.0	85 - 11	
Matrix Spike							Lab ID =	803980-001
Parameter Silver	Unit ug/L	DF 5.00	Result 76.0	Expected/Add 100.(100.)	led	Recovery 76.0	Accept 75 - 12	ance Range 5
MRCCS - Secondar	ý							
Parameter Silver	Unit ug/L	DF 1.00	Result 21.7	Expected 20.0		Recovery 108.	Accept 90 - 11	ance Range 0
MRCVS - Primary								
Parameter Silver	Unit ug/L	DF 1.00	Result 20.8	Expected 20.0		Recovery 104.	Accept 90 - 11	ance Range 0
MRCVS - Primary								
Parameter Silver	Unit ug/L	DF 1.00	Result 20.5	Expected 20.0		Recovery 102.	Accept 90 - 11	ance Range 0
MRCVS - Primary								
Parameter Silver	Unit ug/L	DF 1.00	Result 20.1	Expected 20.0		Recovery 100.	Accept 90 - 11	ance Range 0
MRCVS - Primary								_
Parameter Silver	Unit ug/L	DF 1.00	Result 20.0	Expected 20.0		Recovery 100.	Accept 90 - 11	ance Range 0



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Interference Check St	andard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	ND	0.00		
Interference Check St	andard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	ND	0.00		
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	23.1	20.0	115.	80 - 120
Interference Check St	andard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	22.4	20.0	112.	80 - 120

Total Dissolved Solids	by SM 2540) C	Batch	08TDS12F				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803349-001 Total Dissolved	l Solids	mg/L	08/23	3/2012	1.00	0.757	250.	4790
803349-002 Total Dissolved	Solids	mg/L	08/23	3/2012	1.00	0.757	7 1250 35	
Method Blank		āļieties.						
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	803357-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	1080	1100		1.46	0 - 10.0	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	490.	500.		98.0	90 - 110)



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Turbidity by SM 2130 E	1		Bate					
Parameter		Unit	Ar	nalyzed	DF	MDL	RL	Result
803349-001 Turbidity		NTU	08/2	08/22/2012		0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	803349-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.28	8.00		104.	90 - 110)
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	ŀ	Recovery	Accepta	ince Range
Turbidity	NTU	1.00	8.15	8.00		102.	90 - 110)

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services





Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12F Date Analyzed: 8/22/12

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,	Reported Value, ppm	DF
Blank	100	70.3203	70.3205	70.3204	0.0001	No	0.0001	1.0	25.0	ND	1
803357-1	50	50.8868	50.942	50.9417	0.0003	No	0.0549	1098.0	50.0	1098.0	1
803369	100	74.6799	74.7110	74.7108	0.0002	No	0.0309	309.0	25.0	309.0	1
803349-1	10	51.4500	51.4983	51.4979	0.0004	No	0.0479	4790.0	250.0	4790.0	1
803349-2	2	47.5293	47.5995	47.5995	0.0000	No	0.0702	35100.0	1250.0	35100.0	1
803367-1	10	47.7634	47.8909	47.8908	0.0001	No	0.1274	12740.0	250.0	12740.0	1
803367-4	20	49.2721	49.3303	49.3301	0.0002	No	0.0580	2900.0	125.0	2900.0	1
803367-5	20	48.5863	48.6442	48.6441	0.0001	No	0.0578	2890.0	125.0	2890.0	1
803367-6	20	75.2926	75.3475	75.3475	0.0000	No	0.0549	2745.0	125.0	2745.0	1
803367-7	20	51.4319	51.4791	51.4789	0.0002	No	0.0470	2350.0	125.0	2350.0	1
803367-8	20	47.2216	47.2752	47.2751	0.0001	No	0.0535	2675.0	125.0	2675.0	1
803357-1D	50	72.6460	72.7003	72.7002	0.0001	No	0.0542	1084.0	50.0	1084.0	1
LCS	100	78.3848	78.4339	78.4338	0.0001	No	0.0490	490.0	25.0	490.0	1
803367-9	20	47.5152	47.5675	47.5674	0.0001	No	0.0522	2610.0	125.0	2610.0	1
803367-10	20	49.2008	49.2681	49.268	0.0001	No	0.0672	3360.0	125.0	3360.0	1
803367-11	20	49.5173	49.6097	49.6096	0.0001	No	0.0923	4615.0	125.0	4615.0	1
803367-12	20	50.1589	50.245	50.2448	0.0002	No	0.0859	4295.0	125.0	4295.0	1
803367-13	20	48.0077	48.0571	48.0569	0.0002	No	0.0492	2460.0	125.0	2460.0	1
803367-14	20	51.4707	51.5332	51.5328	0.0004	No	0.0621	3105.0	125.0	3105.0	11
803371-1	100	76.1934	76,2215	76.2215	0.0000	No	0.0281	281.0	25.0	281.0	1
803371-2	100	72.4966	72.5351	72.5347	0.0004	No	0.0381	381.0	25.0	381.0	1
803405-2	100	71.3278	71.3595	71.3593	0.0002	No	0.0315	315.0	25.0	315.0	1
803431	50	73.5947	73.6902	73.6899	0,0003	No	0.0952	1904.0	50.0	1904.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

$$\label{eq:A} \begin{split} A &= \text{weight of dish} + \text{residue in grams}. \\ B &= \text{weight of dish in grams}. \\ C &= \text{mL of sample filtered}, \end{split}$$

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

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

Laboratory (Control Sa	imple (LCS) Summar	У
QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit

QC Within 98.0% 90-110% Yes LCS1 LCSD

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803357-1	0.0549	0.0542	0.6%	≤5%	Yes

Jenny T.

Analyst Printed Name

LCS Recovery
$$P = \left(\frac{LC}{LT}\right) x \, 100$$

P = Percent recovery.LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

% Difference =
$$\frac{\left| \frac{A \text{ or } B - C}{A} \right|}{C} \times 10^{-3}$$

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12F

Date Analyzed: 8/22/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803357-1	1830	0.60	1189.5	0.92
803369	519	0.60	337.35	0.92
803349-1	7420	0.65	4823	0.99
803349-2	44100	0.80	28665	1.22
803367-1	15750	0.81	10237.5	1.24
803367-4	3850	0.75	2502.5	1.16
803367-5	4000	0.72	2600	1.11
803367-6	3970	0.69	2580.5	1.06
803367-7	3410	0.69	2216.5	1.06
803367-8	3780	0.71	2457	1.09
803357-1D	1830	0.59	1189.5	0.91
LCS				
803367-9	3550	0.74	2307.5	1.13
803367-10	4530	0.74	2944.5	1.14
803367-11	5710	0.81	3711.5	1.24
803367-12	5300	0.81	3445	1.25
803367-13	3740	0.66	2431	1.01
803367-14	4060	0.76	2639	1.18
803371-1	451	0.62	293.15	0.96
803371-2	617	0.62	401.05	0.95
803405-2	476	0.66	309.4	1.02
803431	3140	0.61	2041	0.93
	MATERIAL TO			





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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-WDR-375]

803349

TURNAROUND TIME

10 Days

PAGE 1 OF

														Mar.							
COMPANY	CH2M HILL /E2)					$\overline{}$	/.	5.7	$\overline{}$	7	7	$\overline{}$	7	7			7	7		COMMENTS
PROJECT NAME	PG&E Topock I	M3						8,	. <45			1/2/2	. /							////	COMMENT O
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	Oakland, CA 94	612 /	1			/ 1	\mathbb{E}/\mathbb{S}	$\mathbb{Y}/$			/ \$	×/غِ	2/	//>	? /	/2	\ <u></u>	$\cdot /$		[]	
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SAMPLERS (SIGNA	ATURE	us for	<u>ų </u>			Title 32 (218.6) Lab Ein	EC (13)	(1,02,1)	Turh (<540 c)	Total 1.	Ammon (200,7/20	Anion (4500-NH2)	Anjon (300.0) t		70tal M) / (C	(4500-NO2B)			THER OF CONTAINERS	
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/ &	/ jž		<u> </u>	/ 12	/ $^{\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	\ \ \	\ \{	/ ₹	<u> </u>	/2	/ >	_		<u> </u>		
SC-700B-V	VDR-375	08/21/12	13:00		Х		Х	Х	Х	Х									4		BU=2,
																					2003/100
SC-701-W	DR-375	08/21/12	13:00		Х	Х	Х	Х				Х			Х				4		m-2
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							0.70 3 8		W.D.		35.	A).		B	21 4 28						
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() CHAIN	OF CUSTODY SIG	NATURE RECORD		SAMPLE CONDITIONS				
Signature (Relinquished) W W Nan	Property of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the	Company/ Agency CHZMHIL	Date/ 8/2///2 Time /5:30	RECEIVED COOL Y WARM 1 4.5°C				
Signature Prin (Received) Nan		Company/ Agency	Date/ B 72 12 Time	CUSTODY SEALED YES NO TO				
Signature Prin (Relinquished) Nan	TT 11/5 / / \	Agency	Date/8 2/-/2 Time 2/30	SPECIAL REQUIREMENTS:				
(Received) Auda Nan	7/1 . //	Company/ 772	Date/ 8/21/12 21:36	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn				
Signature Prin (Relinquished) Nam		Company/ Agency	Date/ Time	100, 10, 10, 211				
Signature Prin (Received) Nan		Company/ Agency	Date/ Time					

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

-					_	
Date	Lab Number	~ 	Buffer Added (mL)	Final pH	Time Buffered	Initials
08/22/12	803348-7		HIA	NIA	NIA	HAV
	-8				1	
	-9	 				
	-10	1				
	-11					•
	-12					
-	-13					
	-14	1	J,		<u></u>	1,
2 8 03349						
08/22/12	803349-1	7	2 ml	9.5	10:15 AM	HAV
	1, -2	<u> </u>		4		1
08/23/12	803366 -1	9-3	NIA	MA	MIA	HAV
	-2			·		
	-3					
	-4					
	-5		·			
	-6					
	-7					
	-8					
	-9					
	-10		·			
1	1. ~11		1,			La
08/23/12	803369	9.5	NIA	NIA	HIA	HAV
	803405-1	9.5	NIA	NIA	NIA	HAV
1	.1 -2	→	1	1	7	4
08/29/12	803486	7	2 ml	9.5	9:00 AM	HAV
			<u> </u>			
			·			

08/30/12 099





Turbidity/pH Check

Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
503156	71	>2	8-13-12	BE	TCLP	8:mm		after filt
303179	く!	<2	8-14-12	BE	3010A			
803181		72				10 VALAN		
803188	١<	12						
803215	41	72 72	8/15/12	ES	No	(0:0) em	8/16/12	PH LZ
803194	7.1	~~~	8-15-12	BE	3010A			
803195								
803196								
803197								
803198								
¢≈3199	V	/						
80320761-4	<1	72			No	11 120 AM		
803204	71	22			3010A			
803229	¢	J						
80 3230 L1-6)	۷١	72			No	13:00		
8032341-2)	71	42	1	\ \ \	A44S			
803249	l	1	8-16-12	BŁ	<u> </u>			
203232(4,8-9)	くい	72			Ne	10:30		
80322711-31								
803237					4			
803238								
803242					7			
803250	71				3040A			
803256	7		1	T.		1/.00		
30326911-2	٧١	72	8-17-12	BE	No	7:30 A	n	
ten 3227803272		42			30 10 A			
803275								
803280								
803281								
8 0 3 2 8 3								
803297	۲۱	72	1	7	√ o	12:30		
8 3304	<1	72	8-20-12	BE-	A olo E	9:30 AM		
803315	21	42	8-20-12	ES	3010 A			
803316(1-15)		<u> </u>	L	T				
803321	41	72	8/21/12	ES		11:00 am		
803326	71	12	8-21-12	BE	3-101			
803327	i							
803328								
803329	. \							
8 3330	-			1				
\$0334 9 (1,2)	<u>۲</u> ۱	\	8-22-12	36	30101			
803348 (1-15)	<1	12	1		1			
80 33 47 CI-3,11		72		-		10:00 4	m Aciditial	after Lab
803758	71	22	8/22/12	ES	7010 A	ļ		

- Notes:

 1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.

 2. All Total Recoverable Analytes must be pH adjusted and digested.

 3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.

Sample Integrity & Analysis Discrepancy Form

Client:	E2	Lab # 803343
Date De	elivered: <u>08 / 21 /</u> 12 Time: <u>21:30</u> By: □Mail ØF	Field Service
1. И	as a Chain of Custody received and signed?	ØYes □No □N/A
2. D	oes Customer require an acknowledgement of the COC?	□Yes □No ÞÁN/A
. A i	re there any special requirements or notes on the COC?	☐Yes ☐No ☐N/A
i If	a letter was sent with the COC, does it match the COC?	□Yes □No □N/A
W	ere all requested analyses understood and acceptable?	⊈Yes □No □N/A
	ere samples received in a chilled condition? mperature (if yes)? <u>كَانَةُ C</u>	Yes □No □N/A
	ere samples received intact e. broken bottles, leaks, air bubbles, etc)?	adYes □No □N/A
We	ere sample custody seals intact?	□Yes □No ÆN/A
Do	es the number of samples received agree with COC?	₽Yes □No □N/A
Dia	sample labels correspond with the client ID's?	AYes DNo DNA
	sample labels indicate proper preservation? served (if yes) by: Druesdail Client	☐Yes □No □N/A
We	re samples pH checked? pH = <u>S-ee</u> C. O. e.	☑Yes □No □N/A
	re all analyses within holding time at time of receipt? ot, notify Project Manager.	ØYes □No □N/A
	e Project due dates been checked and accepted? n Around Time (TAT): □ RUSH	⊿iYes □No □N/A
San	ple Matrix: DLiquid Drinking Water DGround W	
	udge □Soil □Wipe □Paint □Solid ໑૦	Other Water
Com	ments:	
Sam	ple Check-In completed by Truesdail Log-In/Receiving:	Luda Steal.

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

September 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-WDR-376 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 803486

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-376 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on August 28, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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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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: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 803486

Date: September 17, 2012 Collected: August 28, 2012 Received: August 28, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Himani Vaishnav



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Laboratory No.: 803486

Date Received: August 28, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM P.O. No.: 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803486-001	SC-700B-WDR-376	E120.1	NONE	8/28/2012	13:30	EC	7300	umhos/cm	2.00
803486-001	SC-700B-WDR-376	E200.8	NONE	8/28/2012	13:30	Chromium	ND	ug/L	2.00 1.0
803486-001	SC-700B-WDR-376	E200.8	NONE	8/28/2012	13:30	Manganese	1.3	ug/L	0.50
803486-001	SC-700B-WDR-376	E218.6	LABFLT	8/28/2012	13:30	Chromium, Hexavalent	0.24	ug/L	0.20
803486-001	SC-700B-WDR-376	SM2130B	NONE	8/28/2012	13:30	Turbidity	ND	NTU	0.100
803486-001	SC-700B-WDR-376	SM2540C	NONE	8/28/2012	13:30	Total Dissolved Solids	4160	mg/L	250

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: 456827.01.DM

P.O. Number: 456827.01,DM

Release Number:

Samples Received on 8/28/2012 9:30:00 PM

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Laboratory No. 803486

Printed 9/17/2012

Field ID		Lab ID	Co	llected	Mat	rix
SC-700B-WDR-376		803486-00	1 08/28	3/2012 13:30	Wa	ter
Specific Conductivity - EPA 120		Batch 08EC12I				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803486-001 Specific Conductivity	umhos/cm	08/30/2012	1.00	0.116	2.00	7300
Adams of Diams						

Parameter		Unit	Ana	ılyzed	DF	MDL	RL	Result
803486-001 Specific Conduct	ivity	umhos/cm	umhos/cm 08/30/2012		1.00	0.116	2.00	7300
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	803486-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7300	Expected 7300	F	0.00	Accepta 0 - 20	nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 712	Expected 706	F	Recovery 101.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 705	Expected 706	F	Recovery 99.8	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 982	Expected 998	R	ecovery 98.4	Accepta 90 - 110	nce Range

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 009 written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Printed 9/17/2012

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Chrome VI by EPA 218.	6		Batch	08CrH12S				
Parameter		Unit	Ana	lyzed l)F	MDL	RL	Result
303486-001 Chromium, Hex	xavalent	ug/L	08/29	/2012 11:27 1	.00	0.0250	0.20	0.24
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	803349-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	0.290	0.274		5.84	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200		96.9	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	4.92	5.00		98.3	90 - 110)
Matrix Spike							Lab ID =	803347-001
Parameter	Unit	DF	Result	Expected/Adde	d I	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	5.69	6.01(5.00)		93.6	90 - 110)
Matrix Spike							Lab ID =	803347-002
Parameter	Unit	DF	Result	Expected/Adde	d l	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	1.07	1.11(1.00)		95.7	90 - 110)
Matrix Spike							Lab ID =	803347-003
Parameter	Unit	DF	Result	Expected/Adde	d I	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	0.991	1.00(1.00)		99.1	90 - 110	1
Matrix Spike							Lab ID =	803347-004
Parameter	Unit	DF	Result	Expected/Adde	d I	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	9.01	9.09(5.00)		98.3	90 - 110	١
Matrix Spike							Lab ID =	803347-005
Parameter	Unit	DF	Result	Expected/Adde	d I	Recovery		nce Range
Chromium, Hexavalent	ug/L	1.00	1.58	1.62(1.00)		96.4	90 - 110	١
Matrix Spike							Lab ID =	803347-006
Parameter	Unit	DF	Result	Expected/Adde	d I	Recovery	-	nce Range
Chromium, Hexavalent	ug/L	1.00	1.80	1.80(1.00)		101.	90 - 110	1



Client: E2 Consulting	Engineers, Inc.		oject Name: oject Number	PG&E Topock Pro : 456827.01.DM	ject	Page 3 of 9 Printed 9/17/2012
Matrix Spike						Lab ID = 803347-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.19	Expected/Added 1.21(1.00)	Recovery 98.0	Acceptance Range 90 - 110 Lab ID = 803347-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.34	Expected/Added 1.34(1.00)	Recovery 99.9	Acceptance Range 90 - 110
Matrix Spike Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.27	Expected/Added 1.28(1.00)	Recovery 98.4	Lab ID = 803347-009 Acceptance Range 90 - 110 Lab ID = 803347-010
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 15.4	Expected/Added 15.6(10.0)	Recovery 97.9	Acceptance Range 90 - 110 Lab ID = 803347-011
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.86	Expected/Added 1.87(1.00)	Recovery 99.2	Acceptance Range 90 - 110 Lab ID = 803349-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.26	Expected/Added 1.27(1.00)	Recovery 98.3	Acceptance Range 90 - 110 Lab ID = 803349-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 8.03	Expected/Added 8.08(5.00)	Recovery 99.0	Acceptance Range 90 - 110 Lab ID = 803349-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 10.0	Result 12.2	Expected/Added 13.0(10.0)	Recovery 91.5	Acceptance Range 90 - 110 Lab ID = 803349-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.00	Expected/Added 1.00(1.00)	Recovery 0.00	Acceptance Range 90 - 110 Lab ID = 803486-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.19	Expected/Added 1.24(1.00)	Recovery 95.3	Acceptance Range 90 - 110
MRCCS - Seconda					_	A 1 5 5
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.94	Expected 5.00	Recovery 98.8	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Parameter		Unit	Anal	yzed D	F MDL	RL	Result
803486-001 Chromium		ug/L	09/11	/2012 01:57 5.0	0.195	1.0	ND
Method Blank		27.4					
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Duplicate						Lab ID =	803486-00
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Rang
Chromium	ug/L	5.00	ND	0.00	0	0 - 20	
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	0.234	0.200	117.	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	98.8	100.	98.8	85 - 115	5
Matrix Spike						Lab ID =	803486-00°
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125	5
Matrix Spike Duplicate	esi.					Lab ID =	803486-00
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ınce Rangı
Chromium	ug/L	5.00	103.	100.(100.)	103.	75 - 125	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ınce Rangı
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ınce Range
Chromium	ug/L	1.00	10.2	10.0	102	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	10.8	10.0	108.	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Metals by EPA 200.8, To Parameter		Unit	Anal	vzed	DF	MDL	RL	Result
803486-001 Manganese		ug/L		J	5.00	0.270	0.50	1.3
Method Blank				ACTA GARAGEMENT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTRACT AND ACTA CONTR				
Parameter	Unit	DF	Result					
Manganese	ug/L	1.00	ND					
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ance Range
Manganese	ug/L	1.00	0.0936	0.100		93.6	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ince Range
Manganese	ug/L	5.00	106.	100.		106.	85 - 115	j.
Matrix Spike							Lab ID =	803486-001
Parameter	Unit	DF	Result	Expected/Adde	ed R	lecovery	Accepta	nce Range
Manganese	ug/L	5.00	106.	101.(100.)		104.	75 - 125	5
Matrix Spike Duplicate	.						Lab ID =	803486-001
Parameter	Unit	DF	Result	Expected/Adde	ed R	ecovery	Accepta	ince Range
Manganese	ug/L	5.00	109.	101.(100.)		108.	75 - 125	j
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ince Range
Manganese	ug/L	1.00	9.72	10.0		97.2	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Manganese	ug/L	1.00	9.87	10.0		98.7	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ince Range
Manganese	ug/L	1.00	10.0	10.0		100.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Manganese	ug/L	1.00	9.97	10.0		99.7	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Manganese	ug/L	1.00	9.91	10.0		99.1	90 - 110)



Client: E2 Consulting E	ngineers, Inc		Project Name: Project Number:	PG&E Topo 456827.01.[-	ect	F Printed 9 Revised	Page 8 of 9 0/18/2012
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Manganese	ug/L	1.00	9.89	10.0		98.9	90 - 110)
Interference Check 8	Standard A							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Manganese	ug/L	1.00	ND	0.00				
Interference Check 8	Standard A							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Manganese	ug/L	1.00	ND	0.00				
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Manganese	ug/L	1.00	9.36	10.0		93.6	80 - 120	כ
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Manganese	ug/L	1.00	9.96	10.0		99.6	80 - 120)
Total Dissolved Solids	by SM 2540	C	Batch (08TDS12G				
Parameter		Unit	Analy	zed	DF	MDL	RL	Result
803486-001 Total Dissolved	Solids	mg/L	08/29/2	.012	1.00	0.757	250.	4160
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	803486-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range

1.00

DF

1.00

mg/L

Unit

mg/L

Total Dissolved Solids

Total Dissolved Solids

Parameter

Lab Control Sample

4350

Result

488

4160

500.

Expected

4.46

Recovery

97.6

0 - 10

90 - 110

Acceptance Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Printed 9/17/2012

Page 9 of 9

Turbidity by SM 2130 B			Batch 08TUC12R					
Parameter		Unit	Ana	ılyzed	DF	MDL	RL	Result
803486-001 Turbidity		NTU	08/29	9/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	803486-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.50	8.00		106.	90 - 110	
Lab Control Sample [Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.35	8.00		104.	90 - 110	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

. - Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12G
Date Analyzed: 8/29/12

Laboratory Number	Sample volume, ml	lnitial 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,	Reported Value, ppm	DF
Blank	100	68.8421	68.8422	68.8421	0.0001	No	0.0000	0.0	25.0	ND	1
803486	10	50.1278	50.1698	50.1694	0.0004	No	0.0416	4160.0	250.0	4160.0	_# 1
803494-1	50	67.7720	67.8149	67.8149	0.0000	No	0.0429	858.0	50.0	858.0	1
803530	100	72.4170	72.4536	72.4532	0.0004	No	0.0362	362.0	25.0	362.0	11
803571-1	50	49.6803	49.7881	49.788	0.0001	No	0.1077	2154.0	50.0	2154.0	1
803571-2	20	51.1850	51.2315	51.2311	0.0004	No	0.0461	2305.0	125.0	2305.0	1
803579	20	46.9887	47.0397	47.0397	0.0000	No	0.0510	2550.0	125.0	2550.0	1
803486D	10	51.2035	51.2474	51.247	0.0004	No	0.0435	4350.0	250.0	4350.0	1
LCS	100	72.3899	72.4392	72.4387	0.0005	Yes	0.0488	488.0	25.0	488.0	1

Calculation as follows:

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)

Laboratory Control Sample (LCS) Summary

Laboratory	COINT OF C	1111 pic /200	Juninar	<i>3</i>	
QC Std	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	488	500	97.6%	90-110%	Yes
LCSD					

Dunlicate Determinations Difference Summary

Duplicate Determinations Difference Summary										
Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?					
803486	0.0416	0.0435	2.2%	≤5%	Yes					

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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).

Hope T.

Reviewer Printed Name

Reviewer Signature

Jenny T

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12G
Date Analyzed: 8/29/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803486	7410	0.56	4816.5	0.86
803494-1	1460	0.59	949	0.90
803530	622	0.58	404.3	0.90
803571-1	3670	0.59	2385.5	0.90
803571-2	4100	0.56	2665	0.86
803579	4670	0.55	3035.5	0.84
803486D	7410	0.59	4816.5	0.90
LCS				
				A-0-2
	1 data 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da 10 da			



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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-WDR-376] 902 41 96

COC Number

TURNAROUND TIME 10 Days DATE 08/28/12 PAGE 1 ΩE

											O					•		******					<u> </u>		
COMPANY	E2						7	7	$\overline{}$	7	7	7	1	7	7	7	7	7	7	7	77	<i>T</i>			
PROJECT NAME	PG&E Topock											/	/_				_	•		//	/ /	(COMMENTS	3	
PHONE	(530) 229-3303		fax (530)	339-3303				/ /	/ ,	/ ,	/ /	/ /	/ R	ec'd	08/	128/1 3 4	² 8	6	1	/ /					
ADDRESS	155 Grand Ave	Ste 1000	no comality page					.e. /F	\downarrow				S ≥2	4d /	/	/	/	/	/	CONTAINERS	7				İ
	Oakland, CA 94	1612				/\$	- / 3	(120 t)				/			/	/				TE	/				:
P.O. NUMBER	456827.01.DM		TEAM	_1_		Lab Fillered	70.77	stance /		/ /	/ _{kg} /	/	/ /	/ /		/	/ /	/ ,	/ ,						
SAMPLERS (SIGNA	TURE			W	C/6 (27,8 E.	3/ Mat / Ca	Specific 6	TDS (SM2,)	080/	Turbidin.	(5/1/2/30)					/			NUMBE	10 A300					
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/ઙ૿	/ 20	/ 🕉	/ Ř		1/2/			/	/_/		/		_	[\ge 2						
SC-700B-WDF	t-376	08/28/12	1330	Water	x	х	х	х		х									3		1	DH:	-6 Cz	<i>©</i> 0,	7)
																			3	тота			CONTAINE	1	/



For Sample Conditions See Form Attached

CHAIN OF CUSTODY SIG	SAMPLE CONDITIONS					
Signature Printed Name Name	Company/ Agency OM/	Date/ 8-28-/2 Time 535	RECEIVED COOL [WARM [46°C		
Signaturé (Received) Au Name Rafar	Company/ T. L. I	Date/8-28-17 Time 75,30	CUSTODY SEALED	YES NO D		
Signature (Relinquished) Rafaul Day Parinted (Relinquished)	Agency L.CT	Date/8-28-72 Time 27:30	SPECIAL REQUIREMENTS:			
(Received) Makeuman Name Lucia	Company/ Agency 742	Date/ 8/28/12 Time 2/12				
Signature Printed (Relinquished) Name	Company/ Agency	Date/ Time				
Signature Printed (Received) Name	Company/ Agency	Date/ Time				

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

	Date	Lab	Number	Initial pH	Buffer Added (m	L) Final pH	Time Buffered	Initials
05	8/22/12	803	348-7	9.5	HIA	NIA	NIA	HAV
<u> </u>			1 -8					
			-9					
			~10					
		ļ	-11					-
			-12					
			-13					
<u> </u>		-	-14				1.	
	3349-					·		
08	122/12	8033	349-1	7	2 ml	9-5	10:15 AM	HAV
	1,	<i></i>	-2			ale		1,
081	23112	803	366 -1	9-3	NIA	MIA	NIA	HAV
			-2		Î	1		1177
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			-4					
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ļ			-6					
<u> </u>			-7					
-			-8					
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			-10				·	
	1		, ~11	ا و	1,	1		1,9
	23/12	803	369	9.5	NIA	NIA	MIA	HAV
		803	405-1	9.5	NIA	NIA	NIA	HAV
	<u> </u>		-2	-↓		1	7	4
08/	29/12	80 31	186	7	2 ml	9.5	9:00 AM	HAV
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						,		

Q 8/31/12

HAY 08/30/12



Turbidity/pH Check

			Turbic	lity/pH C	песк			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
803 340 (1-3)	<1.	72	8-22-12	36	NC	15,00	8-23-12	PH<2
	7	12						
803342-1	71				3010A			
803357(192)	<1	<u> </u>	8-23-12	BL	30 10 A			
80 336 9 (1-11)	7	-i $-$	1	7			,	
					1.			
803368 (1-2)	4	<u> </u>			No			
80 33 64 (10-12)	<1	1			1	13:00	8-27-12	PHEZ
80 336 5LI-7)						1	8-27-12	PHZZ
803370					· · · · · · · · · · · · · · · · · · ·		1	10-2
803371			<u> </u>				- V	**
80337461-5)								
80337611-2)	*				4	+ +		
803381(1-5)	7	1	-		٠	<u> </u>		,
80 3382	>1	₹2			30101			
803383					<u> </u>	٠. س	A	8-27-
503392	۲١.	1		4		15100	Apomi Acidi	
2034024-20)	<1	>2	8-27-12	BE	W 0	8100	8-28-12	PHCZ
803443 (1-5)		くて			3º 10A			
8~3405L1-2)								
803445	71	√ 2	8-28-12	BE	3010A			· .
803446		I	1		1			
503453	41	72			No	11 Am	70	
803468		42			30 10 A	80 AM	5-29-12	PH<2
803462	71							
803463								
803465								
803466	 							
803467								
80 3486	41	>2	8-29-12	BE	30 10 A	8:00 Am		
803515		72		1		14:00		
	7)	12	1	+ - 1 -				
80349411-21)		>2			Na	15:0-	8-30 <2	6x -2939
	 	1		+	1-1			0,9-
8035184-31			 					
203519 (1-3)		- 	E-30-(2	35-	No	14:	8/31/12 0/	DO MLZ
8035550-3)		>2	1 36-16	1		+-(
803561(1-5)			Blattia.	ES	ide	3/1/1/1		
803578	Z i	12	914112	167	<u>yy</u>	190 2071		
817579		 			- 1-	+1		
847580	 	<u> </u>		+ 1	<u> </u>	$+\mathcal{T}$		
817583	L	<u> </u>	<u> </u>		11:			
873584 (1-15)	1 41	12	914/12	ES	NU			
10 32K W	61	42			yu	701 VA		· · · · · · · · · · · · · · · · · · ·
807590	41	42		- k		MIUA		
803 591	41	42	1			70 (0 A		

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



Sample Integrity & Analysis Discrepancy Form

Client	: <u>E2</u>	Lab # <u>803486</u>
Date I		ield Service □Client
). 1.	Was a Chain of Custody received and signed?	A⊈Yes □No □N/A
	Does Customer require an acknowledgement of the COC?	□Yes □No ⊅N/A
	Are there any special requirements or notes on the COC?	□Yes □No ☑N/A
•	If a letter was sent with the COC, does it match the COC?	□Yes □No ŒÂVA
	Were all requested analyses understood and acceptable?	∡Yes □No □N/A
5. }.	Were samples received in a chilled condition? Temperature (if yes)? 4.6 ° C	⊈iYes □No □N/A
·	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Ø(Yes □No □N/A
) <u>.</u>	Were sample custody seals intact?	□Yes □No ØN/A
).	Does the number of samples received agree with COC?	ØYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ziyes □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 = <u>See</u> e. Ø. e.	o⊊rýes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	dYes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH	ÆlYes □No □N/A
15.	- • • • • □ Ground □ □ Drinking Water □ Ground	d Water □ Waste Water ☑Other <u>Wullk</u>
16.	Comments:	101.0
17.	Comments:Sample Check-In completed by Truesdail Log-In/Receiving:	J. Sua emis

045

Analytical Bench Log Book

WDR pH Results

	Date	Time	Date	Time	pH Meter	Date	Time	Slope	at down until the problem	
Sample Name	of	of sampling	of	óf	#1, #2, or #3 etc. See cover Sheet for Serial Number	pH meter Calibrated	pH meter Calibrated	of the Curve	Analyst N _{ame} (for the pH result)	pH Result
3C-700B	8-7-10	10:00	87-12	10:04	METER#1	8-7-12	00:50	-55.7	Thousand and	7/
ies.					· · · · · · · · · · · · · · · · · · ·					1 7 7
Se-10013	8-7-12	10:00	8-7-17	10:06	METERAL	8-7-12	00:50	-55.7	They like to	10/
tes:							L		- we reps	119
SC-70013	8-13-12	7:00	8-13-12	7:05	METERKI	8-13-12	1:15	55.3	Thou Trees	7.2
tes:						•			ELIDS	11.2
SC-700B.	8-17-12	14:77	14:15	日·17·12	METER #1	8-17-12	13:04	-55.3	C. Kinght	7.4
tes:						<u>, </u>				1 7 4
SC- 700 B	8-21-12	13:00	8-21-12	i3:05	MBOEN#1	8-21-12	Ø{:00	-S5.3	CHICIS LEMZ	7.5
tes:			·			<u> </u>	· · · · · · · · · · · · · · · · · · ·		ME	71.3
SC- 701	8-21-12	13:00	8-21-12	13:05	messe to	8-21-12	01:00	-55,3	CHRIS LENTE	
tes:										7.7
50-70013	8-28-12	1330	8-28-12	1335	METER#1	828-12	01:00	-55.2	Kan I de De	7-1
tes:						<u> </u>	······································		73	7 */
man to 1		Domi	nder WDF	Damalua	l pH Range for the	FM				

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

October 5, 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 IM3PLANT-WDR-377 PROJECT,

GROUNDWATER MONITORING,

TLI No.: 803609

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-377 project groundwater monitoring. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on September 4, 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 method blank internal standard Germanium #2 for Total Nickel by EPA 200.8 analyzed in batch 100212B exceeded the recovery limits of 70% - 130%. The method blank was also analyzed in batches 092712B and 100112A and the internal standard recovery was within the acceptance range. All other QA/QC was within acceptable limits, therefore, the data was accepted.

The method blank internal standard Germanium #3 for Total Manganese by EPA 200.8 analyzed in batch 092712A exceeded the recovery limits of 70% - 130%. The method blank was also analyzed in batch 100112A and the internal standard recovery was within the acceptance range. All other QA/QC was within acceptable limits, therefore, the data was accepted.

The Laboratory Control Sample (LCS) recovery for Total Antimony by EPA 200.8 analyzed in batch 100112A just exceeded the recovery limits of 85% - 115%. Because all sample results were below the reporting limit and all other QA/QC were within acceptable limits, the data was accepted.

For Ammonia as N by SM 4500-NH3 D, there was insufficient sample volume to run a sample duplicate and matrix spike, therefore, the laboratory control sample and laboratory control sample duplicate were analyzed to determine precision and accuracy.

No other violations or nonconformance 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.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters Project Name: PG&E Topock Project

Project No.: 456827.01.DM

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

Laboratory No.: 803609

Date: October 3, 2012 Collected: September 4, 2012 Received: September 4, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Melissa Scharfe
SM 4500-Si D	Soluble Silica	Jenny Tankunakorn
SM 4500-P B,E	Total Phosphorus	Jenny Tankunakorn
SM 5310C	Total Organic Carbon	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Melissa Scharfe
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

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

Laboratory No.: 803609

Date Received: September 4, 2012

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

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 456827.01.DM

P.O. No.: 456827.01.DM

Analytical Results Summary

		Analysis	Extraction	Sample	Sample				
Lab Sample ID	Field ID	Method	Method	Date	Time	Parameter	Result	Units	RL
803609-001	SC-700B-WDR-377	E120.1	NONE	9/4/2012	13:19	EC	7250	umhos/cm	2.00
803609-001	SC-700B-WDR-377	E200.7	NONE	9/4/2012	13:19	Aluminum	ND	ug/L	10.0
803609-001	SC-700B-WDR-377	E200.7	NONE	9/4/2012	13:19	BORON	948	ug/L	200
803609-001	SC-700B-WDR-377	E200.7	NONE	9/4/2012	13:19	Iron ·	ND	ug/L	20.0
803609-001	SC-700B-WDR-377	E200.7	NONE	9/4/2012	13:19	Zinc	ND	ug/L	10.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Antimony	ND	ug/L	2.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Arsenic	ND	ug/L	0.50
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Barium	9.5	ug/L	5.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Chromium	ND	ug/L	1.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Copper	ND	ug/L	5.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Lead	ND	ug/L	1.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Manganese	0.80	ug/L	0.50
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Molybdenum	19.7	ug/L	5.0
803609-001	SC-700B-WDR-377	E200.8	NONE	9/4/2012	13:19	Nickel	2.3	ug/L	2.0
803609-001	SC-700B-WDR-377	E218.6	LABFLT	9/4/2012	13:19	Chromium, Hexavalent	ND	ug/L	0.20
803609-001	SC-700B-WDR-377	E300	NONE	9/4/2012	13:19	Fluoride	2.06	mg/L	0.500
803609-001	SC-700B-WDR-377	E300	NONE	9/4/2012	13:19	Nitrate as N	2.98	mg/L	1.00
803609-001	SC-700B-WDR-377	E300	NONE	9/4/2012	13:19	Sulfate	490	mg/L	25.0
803609-001	SC-700B-WDR-377	SM2130B	NONE	9/4/2012	13:19	Turbidity	ND	NTU	0.100
803609-001	SC-700B-WDR-377	SM2540C	NONE	9/4/2012	13:19	Total Dissolved Solids	4070	mg/L	250
803609-001	SC-700B-WDR-377	SM4500NH3D	NONE	9/4/2012	13:19	Ammonia-N	ND	mg/L	0.500
803609-001	SC-700B-WDR-377	SM4500NO2B	NONE	9/4/2012	13:19	Nitrite as N	ND	mg/L	0.0050
803609-001	SC-700B-WDR-377	SM5310C	NONE	9/4/2012	13:19	Total Organic Carbon	ND	mg/L	0.300

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

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample	Davamatau	Danieli		
					Time	Parameter	Result	Units	RL
803609-002	SC-100B-WDR-377	E120.1	NONE	9/4/2012	14:55	EC	7600	umhos/cm	2.00
803609-002	SC-100B-WDR-377	E200.7	NONE	9/4/2012	14:55	Aluminum	ND	ug/L	10.0
803609-002	SC-100B-WDR-377	E200.7	NONE	9/4/2012	14:55	BORON	989	ug/L	200
803609-002	SC-100B-WDR-377	E200.7	NONE	9/4/2012	14:55	Iron	ND	ug/L	20.0
803609-002	SC-100B-WDR-377	E200.7	LABFLT	9/4/2012	14:55	Iron	ND	ug/L	20.0
803609-002	SC-100B-WDR-377	E200.7	NONE	9/4/2012	14:55	Zinc	ND	ug/L	10.0
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Antimony	ND	ug/L	2.0
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Arsenic	3.4	ug/L	0.50
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Barium	25.6	ug/L	5.0
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Chromium	773	ug/L	5.0
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Copper	ND	ug/L	5.0
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Lead	ND	ug/L	1.0
803609-002	SC-100B-WDR-377	E200.8	LABFLT	9/4/2012	14:55	Manganese	4.2	ug/L	0.50
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Manganese	6.2	ug/L	0.50
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Molybdenum	20.9	ug/L	5.0
803609-002	SC-100B-WDR-377	E200.8	NONE	9/4/2012	14:55	Nickel	7.2	ug/L	2.0
803609-002	SC-100B-WDR-377	E218.6	LABFLT	9/4/2012	14:55	Chromium, Hexavalent	764	ug/L	10.0
803609-002	SC-100B-WDR-377	E300	NONE	9/4/2012	14:55	Fluoride	2.51	mg/L	0.500
803609-002	SC-100B-WDR-377	E300	NONE	9/4/2012	14:55	Nitrate as N	3.13	mg/L	1.00
803609-002	SC-100B-WDR-377	E300	NONE	9/4/2012	14:55	Sulfate	522	mg/L	25.0
803609-002	SC-100B-WDR-377	SM2130B	NONE	9/4/2012	14:55	Turbidity	0.153	NTU	0.100
803609-002	SC-100B-WDR-377	SM2320B	NONE	9/4/2012	14:55	Alkalinity	145	mg/L	5.00
803609-002	SC-100B-WDR-377	SM2320B	NONE	9/4/2012	14:55	Alkalinity, Bicarbonate (As CaCO3)	145	mg/L	5.00
803609-002	SC-100B-WDR-377	SM2320B	NONE	9/4/2012	14:55	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
803609-002	SC-100B-WDR-377	SM2540C	NONE	9/4/2012	14:55	Total Dissolved Solids	4360	mg/L	250
803609-002	SC-100B-WDR-377	SM4500NH3D	NONE	9/4/2012	14:55	Ammonia-N	ND	mg/L	0.500
803609-002	SC-100B-WDR-377	SM4500NO2B	NONE	9/4/2012	14:55	Nitrite as N	ND	mg/L	0.0050
803609-002	SC-100B-WDR-377	SM4500-PB_E	NONE	9/4/2012	14:55	Total Phosphorous-P	ND	mg/L	0.0200
803609-002	SC-100B-WDR-377	SM4500SI	LABFLT	9/4/2012	14:55	Silica, dissolved	19.4	mg/L	4.00
803609-002	SC-100B-WDR-377	SM5310C	NONE	9/4/2012	14:55	Total Organic Carbon	ND	mg/L	0.300

ND: Non Detected (below reporting limit)

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.

mg/L: Milligrams per liter.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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Laboratory No. 803609

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: 456827.01.DM P.O. Number: 456827.01.DM

Release Number:

Samples Received on 9/4/2012 11:00:00 PM

Field ID	Lab ID	Collected	Matrix	
SC-700B-WDR-377	803609-001	09/04/2012 13:19	Water	
SC-100B-WDR-377	803609-002	09/04/2012 14:55	Water	

Anions By I.C EPA	300.0		Batch	09AN12C				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803609-001 Fluoride		mg/L	09/05	/2012 12:05	5.00	0.155	0.500	2.06
Nitrate as Ni	trogen	mg/L	09/05	/2012 12:05	5.00	0.135	1.00	2.98
Sulfate	_	mg/L	09/05	/2012 14:33	50.0	5.70	25.0	490.
803609-002 Fluoride		mg/L	09/05	/2012 12:16	5.00	0.155	0.500	2.51
Nitrate as Ni	trogen	mg/L	09/05	/2012 12:16	5.00	0.135	1.00	3.13
Sulfate		mg/L	09/05	/2012 14:44	50.0	5.70	25.0	522.
Method Blank		- 1						
Parameter	Unit	DF	Result					
Chloride	mg/L	1.00	ND					
Fluoride	mg/L	1.00	ND					
Sulfate	mg/L	1.00	ND					
Nitrate as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID =	803599-016
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Chloride	mg/L	25.0	55.3	56.4		1.89	0 - 20	
Sulfate	mg/L	25.0	48.6	49.2		1.27	0 - 20	
Duplicate							Lab ID =	803609-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Fluoride	mg/L	5.00	2.52	2.51		0.358	0 - 20	
Nitrate as Nitrogen	mg/L	5.00	3.16	3.13		1.11	0 - 20	

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 products authorization from Truesdail Laboratories.



Client:E2 Consulting Engineers, Inc.Project Name:PG&E Topock ProjectPage 2 of 40Project Number:456827.01.DMPrinted 10/3/2012

Lab Control Sample Recovery Acceptance Range Expected Unit DF Result Parameter 90 - 110 98.3 mg/L 1.00 3.93 4.00 Chloride 90 - 110 4.00 103. 1.00 4.12 mq/L Fluoride 90 - 110 20.0 100. mg/L 1.00 20.0 Sulfate 4.00 100. 90 - 110 mg/L 1.00 4.00 Nitrate as Nitrogen Lab ID = 803599-016 Matrix Spike Result Expected/Added Recovery Acceptance Range Parameter Unit DF 156.(100.) 98.2 85 - 115 25.0 154. mg/L Chloride 101. 85 - 115 99.9 99.2(50.0) 25.0 Sulfate mg/L Lab ID = 803609-002 Matrix Spike Expected/Added Recovery Acceptance Range DF Result Unit Parameter 5.00 22.9 22.5(20.0) 102. 85 - 115 mg/L Fluoride 104. 85 - 115 5.00 24.0 23.1(20.0) mg/L Nitrate as Nitrogen MRCCS - Secondary Recovery Acceptance Range DF Result Expected Unit Parameter 4.00 99.0 90 - 110 3.96 mg/L 1.00 Chloride 90 - 110 4.00 104. 1.00 4.14 mg/L Fluoride 101. 90 - 110 20.2 20.0 1.00 mg/L Sulfate 4.02 4.00 100. 90 - 110 1.00 mg/L Nitrate as Nitrogen MRCVS - Primary Result Expected Recovery Acceptance Range Unit DF Parameter 90 - 110 99.4 3.00 1.00 2.98 Chloride mg/L MRCVS - Primary Recovery Acceptance Range Unit DF Result Expected Parameter 99.0 90 - 110 3.00 1.00 2.97 Chloride mg/L MRCVS - Primary Acceptance Range Expected Recovery DF Result Unit Parameter 90 - 110 99.4 1.00 2.98 3.00 mg/L Chloride MRCVS - Primary Acceptance Range Recovery Unit DF Result Expected Parameter 99.0 90 - 110 2.97 3.00 1.00 Chloride mg/L MRCVS - Primary Expected Recovery Acceptance Range DF Result Unit Parameter 90 - 110 105 1.00 3.15 3.00 mg/L Fluoride



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Nitrite SM 4500-NO2 E	3		Batch	09NO212A				
Parameter		Unit	Anal	yzed I	DF	MDL	RL	Result
803609-001 Nitrite as Nitro	ogen	mg/L	09/05/	/2012 18:17 1	.00	0.000540	0.0050	ND
803609-002 Nitrite as Nitro	ogen	mg/L	09/05/	/2012 18:22 1	.00	0.000540	0.0050	ND
Method Blank								
Parameter	Unit	DF	Result					
Nitrite as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID = 8	03609-002
Parameter	Unit	DF	Result	Expected	F	RPD	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sampl	e							
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0280	0.0308		90.9	90 - 110	
Matrix Spike							Lab ID = 8	03609-002
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0197	0.0200(0.0200)	98.5	85 - 115	
MRCCS - Seconda	nry							
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0281	0.0308		91.2	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200		98.0	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200		98.0	90 - 110	



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Alkalinity by SM 23	20B		Batch	09ALK12A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803609-002 Alkalinity a	as CaCO3	mg/L	09/05	/2012	1.00	0.555	5.00	145
Bicarbona	te (Calculated)	mg/L	09/05	/2012	1.00	0.555	5.00	145
Carbonate	(Calculated)	mg/L	09/05	/2012	1.00	0.555	5.00	ND
Method Blank								
Parameter	Unit	DF	Result					
Alkalinity as CaCO3	mg/L	1.00	ND					
Duplicate							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected	F	RPD Accepta		ance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.		1.00	0 - 20	
Lab Control Sar	mple							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	101	100.		101	90 - 11	ס
Lab Control Sar	mple Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.		99.0	90 - 11)
Matrix Spike							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	202	200.(100.)		102	75 - 12	5



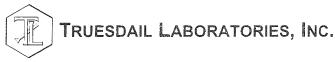
Client: E2 Consulting Engineers, Inc.

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Specific Conductivity - E	PA 120.1		Batch	n 09EC12B				
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
803609-001 Specific Conducti	vity	umhos/cm 09/07		7/2012	1.00	0.116	2.00	7250
803609-002 Specific Conducti	vity	umhos/cm	umhos/cm 09/07		1.00	0.116	2.00	7600
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	803609-002
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7590	Expected 7600	F	RPD 0.132	Accepta 0 - 10	ance Range
Lab Control Sample								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 704	Expected 706	F	Recovery 99.7	Accepta 90 - 110	ance Range)
MRCCS - Secondary								
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 712	Expected 706	F	Recovery 101.	Accepta 90 - 110	ance Range)
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 986	Expected 998	F	Recovery 98.8	Accepta 90 - 110	ance Range



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Chrome VI by EPA 218.0	3		Batch	09CrH12B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803609-001 Chromium, Hex	avalent	ug/L	09/07	/2012 13:29	1.00	0.0250	0.20	ND
803609-002 Chromium, Hex	avalent	ug/L	09/07	/2012 13:39	50.0	1.25	10.0	764.
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	803605-002
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.07		1.51	0 - 20	
Low Level Calibration	Verification	pilitin L						
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200		100.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.99	5.00		99.7	90 - 110)
Matrix Spike							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.40	1.40(1.00)		99.9	90 - 110)
Matrix Spike							Lab ID =	803605-002
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	6.20	6.07(5.00)		102.	90 - 110)
Matrix Spike							Lab ID =	803605-003
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.40	1.40(1.00)		100.	90 - 110)
Matrix Spike							Lab ID =	803605-004
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.91	1.91(1.00)		100.	90 - 110)
Matrix Spike							Lab ID =	803606-001
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	15.2	15.4(10.0)		98.9	90 - 110)
Matrix Spike							Lab ID =	803606-002
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	15.6	15.6(10.0)		99.9	90 - 110	_



Client: E2 Consulting Eng	ineers, Inc		oject Name: oject Number	PG&E Topock Pro :: 456827.01.DM	ject	Page 8 of 40 Printed 10/3/2012
Matrix Spike						Lab ID = 803607-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.21	Expected/Added 1.19(1.00)	Recovery 102.	Acceptance Range 90 - 110 Lab ID = 803608-001
Parameter	Unit	DF	Result	Expected/Added 16.8(10.0)	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.8		99.9	90 - 110
Matrix Spike						Lab ID = 803609-001
Parameter	Unit	DF	Result	Expected/Added 1.19(1.00)	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.18		98.9	90 - 110
Matrix Spike						Lab ID = 803609-002
Parameter	Unit	DF	Result	Expected/Added 1760(1000)	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1760		99.6	90 - 110
Matrix Spike						Lab ID = 803629-001
Parameter	Unit	DF	Result	Expected/Added 7.42(5.00)	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.56		103.	90 - 110
MRCCS - Secondary					_	_
Parameter	Unit	DF	Result	Expected 5.00	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.92		98.3	90 - 110
MRCVS - Primary	Vezeri de 1989					
Parameter Chromium, Hexavalent MRCVS - Primary	Unit	DF	Result	Expected	Recovery	Acceptance Range
	ug/L	1.00	10.2	10.0	102.	95 - 105
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105
MRCVS - Primary Parameter Chromium, Hexavalent	Unit	DF	Result	Expected	Recovery	Acceptance Range
	ug/L	1.00	10.2	10.0	102.	95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Metals by EPA 200.7, To	tal			091012A-Th2				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803609-001 Aluminum		ug/L	09/10	/2012 11:35	1.00	2.00	10.0	ND
Boron		ug/L	09/10	/2012 11:35	1.00	2.30	200.	948.
Iron		ug/L	09/10	/2012 11:35	1.00	0.900	20.0	ND
Zinc		ug/L	09/10	/2012 11:35	1.00	0.300	10.0	ND
803609-002 Aluminum		ug/L	09/10	/2012 12:00	1.00	2.00	10.0	ND
Boron		ug/L	09/10	/2012 12:00	1.00	2.30	200.	989.
Iron		ug/L	09/10	/2012 12:00	1.00	0.900	20.0	ND
Zinc		ug/L	09/10	/2012 12:00	1.00	0.300	10.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Aluminum	ug/L	1.00	ND					
Iron	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected	I	RPD	Accepta	ance Range
Aluminum	ug/L	1.00	ND	0.00		0	0 - 20	
Iron	ug/L	1.00	ND	0.00		0	0 - 20	
Zinc	ug/L	1.00	ND	0.00		0	0 - 20	
Boron	ug/L	1.00	107.	107		0.374	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	į	Recovery	Accepta	ance Range
Aluminum	ug/L	1.00	2180	2000		109.	85 - 115	5
Iron	ug/L	1.00	2130	2000		107.	85 - 115	5
Zinc	ug/L	1.00	2090	2000		104.	85 - 115	
Boron	ug/L	1.00	2040	2000		102.	85 - 115	5
Matrix Spike							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected/A		Recovery	Accepta	ance Range
Aluminum	ug/L	1.00	2020	2000(2000)		101.	75 - 125	5
Iron	ug/L	1.00	2030	2000(2000)		102.	75 - 125	5
Zinc	ug/L	1.00	2070	2000(2000)		104.	75 - 125	5
Boron	ug/L	1.00	2180	2110(2000)	1	103.	75 - 125	5



Client: E2 Consulting Engineers, Inc.

PG&E Topock Project Project Name:

Project Number: 456827.01.DM

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Metals by EPA 200.8, To	otal		Batch	091912A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803609-001 Arsenic		ug/L	09/19/	/2012 16:18	5.00	0.265	0.50	ND
Chromium		ug/L	09/19/	/2012 16:18	5.00	0.195	1.0	ND
803609-002 Arsenic		ug/L	09/19/	/2012 16:32	5.00	0.265	0.50	3.4
Chromium		ug/L	09/19/	/2012 16:39	25.0	0.975	5.0	773.
Manganese		ug/L	09/19/	/2012 16:32	5.00	0.270	0.50	6.2
Method Blank		Service 1	a li kirt 4 ĝistokki. Li kir	las sila				
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Beryllium	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Arsenic	ug/L	1.00	0.0912	0.100		91.2	70 - 130)
Beryllium	ug/L	1.00	0.0932	0.100		93.2	70 - 130)
Chromium	ug/L	1.00	0.215	0.200		107.	70 - 130)
Manganese	ug/L	1.00	0.130	0.100		130.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Arsenic	ug/L	5.00	97.3	100.		97.3	85 - 118	5
Beryllium	ug/L	5.00	92.0	100.		92.0	85 - 115	5
Chromium	ug/L	5.00	102.	100.		102.	85 - 115	5
Manganese	ug/L	5.00	98.8	100.		98.8	85 - 115	5
Matrix Spike							Lab ID =	803605-00
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Range
Arsenic	ug/L	5.00	93.2	100.(100.)		93.2	75 - 12	5
Beryllium	ug/L	5.00	93.4	100.(100.)		93.4	75 - 12	5
Chromium	ug/L	5.00	98.0	100.(100.)		98.0	75 - 12	5
Manganese	ug/L	5.00	97.9	100.(100.)		97.9	75 - 12	5



Project Name: PG&E Topock Project Page 13 of 40 Client: E2 Consulting Engineers, Inc. Project Number: 456827.01.DM Printed 10/3/2012 Lab ID = 803605-001 Matrix Spike Duplicate DF Result Expected/Added Recovery Parameter Unit Acceptance Range 96.1 75 - 125 5.00 100.(100.) 96.1 Arsenic ug/L 87.9 87.9 75 - 125 ug/L 5.00 100.(100.) Beryllium 101. 75 - 125 ug/L 5.00 101. 100.(100.) Chromium 90.9 75 - 125 5.00 90.9 100.(100.) Manganese ug/L MRCCS - Secondary Unit DF Result Expected Recovery Acceptance Range Parameter 10.2 10.0 102. 90 - 110 1.00 ug/L Arsenic 9.98 10.0 99.8 90 - 110 Beryllium ug/L 1.00 10.0 100. 90 - 110 1.00 10.0 Chromium ug/L ug/L 1.00 9.76 10.0 97.6 90 - 110 Manganese MRCVS - Primary Unit DF Result Expected Recovery Acceptance Range Parameter 10.0 93.4 90 - 110 ug/L 1.00 9.34 Arsenic MRCVS - Primary DF Expected Acceptance Range Unit Result Recovery Parameter 10.0 94.9 90 - 110 ug/L 1.00 9.49 Arsenic MRCVS - Primary DF Expected Recovery Acceptance Range Unit Result Parameter 10.0 95.7 90 - 110 9.57 Arsenic ug/L 1.00 MRCVS - Primary DF Result Expected Recovery Acceptance Range Unit Parameter 9.94 10.0 99.4 90 - 110 1.00 ug/L Arsenic MRCVS - Primary Unit DF Result Expected Recovery Acceptance Range Parameter 10.0 98.3 90 - 110 1.00 9.83 ug/L Arsenic ug/L 92.0 90 - 110 10.0 Beryllium 1.00 9.20 MRCVS - Primary Acceptance Range Unit DF Result Expected Recovery Parameter 10.0 92.0 90 - 110 9.20 ug/L 1.00 Beryllium MRCVS - Primary Acceptance Range DF Expected Recovery Unit Result Parameter

9.32

ug/L

Beryllium

1.00

10.0

93.2

90 - 110



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Metals by EPA 200.8, Total	al		Batch	091312A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803609-001 Barium		ug/L	09/14	/2012 01:48	5.00	0.205	5.0	9.5
803609-002 Barium		ug/L	09/14	/2012 02:02	5.00	0.205	5.0	25.6
Method Blank								
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Uranium	ug/L	1.00	ND					
Vanadium	ug/L	1.00	ND					
Duplicate							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Barium	ug/L	5.00	108.	107		0.559	0 - 20	
Uranium	ug/L	5.00	ND	0.00		0	0 - 20	
Vanadium	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration V	/erification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Barium	ug/L	1.00	0.974	1.00		97.4	70 - 130	
Uranium	ug/L	1.00	0.214	0.200		107.	70 - 130	כ
Vanadium	ug/L	1.00	1.09	1.00		109.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Barium	ug/L	5.00	108.	100.		108.	85 - 118	5
Uranium	ug/L	5.00	104.	100.		104.	85 - 118	5
Vanadium	ug/L	5.00	109.	100.		109.	85 - 118	5
Matrix Spike							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range
Barium	ug/L	5.00	204.	207(100.)		97.2	75 - 12	5
Uranium	ug/L	5.00	100.0	100.(100.)		100.0	75 - 125	5
Vanadium	ug/L	5.00	104.	100.(100.)		104.	75 - 12	5
Matrix Spike Duplicate							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range
Barium	ug/L	5.00	206.	207(100.)		98.9	75 - 12	5
Uranium	ug/L	5.00	101.	100.(100.)		101.	75 - 12	5
Vanadium	ug/L	5.00	99.4	100.(100.)		99.4	75 - 12	5



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Metals by EPA 200.8, To	tal		Batch	092112A				
Parameter	e, en graphica en esperante de Profession (ESPA)	Unit	Anal	yzed	DF	MDL	RL	Result
803609-001 Lead		ug/L	09/21	/2012 17:28	5.00	0.265	1.0	ND
Molybdenum		ug/L	09/21	/2012 17:28	5.00	0.150	5.0	19.7
303609-002 Lead		ug/L	09/21	/2012 17:35	5.00	0.265	1.0	ND
Molybdenum		ug/L	09/21	/2012 17:35	5.00	0.150	5.0	20.9
Method Blank		Satisfie in						
Parameter	Unit	DF	Result					
Lead	ug/L	1.00	ND					
Thallium	ug/L	1.00	ND					
Molybdenum	ug/L	1.00	ND					
Low Level Calibration	Verification	EWA solu						
Parameter	Unit	DF	Result	Expected	I	Recovery	Accept	ance Range
Lead	ug/L	1.00	0.240	0.200		120.	70 - 13	0
Thallium	ug/L	1.00	0.256	0.200		128.	70 - 13	0
Molybdenum	ug/L	1.00	0.963	1.00		96.3	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result Expected		I	Recovery	Accept	ance Range
Lead	ug/L	5.00	106.	100.		106.	85 - 11	5
Thallium	ug/L	5.00	103.	100.		103.	85 - 11	5
Molybdenum	ug/L	5.00	114	100.		114	85 - 11	5
Matrix Spike							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Add	led l	Recovery	•	ance Range
Lead	ug/L	5.00	102	100.(100.)		102	75 - 12	5
Thallium	ug/L	5.00	99.0	100.(100.)		99.0	75 - 12	5
Molybdenum	ug/L	5.00	115.	106.(100.)		109.	75 - 12	5
Matrix Spike Duplicat	e						Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Add	ied l	Recovery	Accept	ance Range
Lead	ug/L	5.00	93.8	100.(100.)		93.8	75 - 12	5
Thallium	ug/L	5.00	92.8	100.(100.)		92.8	75 - 12	5
Molybdenum	ug/L	5.00	107.	106.(100.)		102.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accept	ance Range
Lead	ug/L	1.00	45.8	50.0		91.5	90 - 11	0
Thallium	ug/L	1.00	45.0	50.0		90.1	90 - 11	0
Molybdenum	ug/L	1.00	46.6	50.0		93.1	90 - 11	0

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



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Metals by EPA 200.8, Total		Unit		092712A lyzed	DF	MDL	RL	Result
Parameter								
803609-001 Copper		ug/L			5.00	0.235	5.0	ND
Manganese		ug/L			5.00	0.270	0.50	0.80
803609-002 Copper		ug/L	09/27	/2012 22:47	5.00	0.235	5.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Copper	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration Ve	rification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Copper	ug/L	1.00	0.760	1.00		76.0	70 - 130)
Manganese	ug/L	1.00	0.118	0.100		118.	70 - 130	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Copper	ug/L	5.00	89.1	100.		89.1	85 - 115	5
Manganese	ug/L	5.00	89.7	100.		89.7	85 - 115	5
Matrix Spike							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accepta	ance Range
Copper	ug/L	5.00	94.0	100.(100.)		94.0	75 - 125	5
Manganese	ug/L	5.00	93.8	100.(100.)		93.8	75 - 125	5
Matrix Spike Duplicate							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accepta	ance Range
Copper	ug/L	5.00	94.3	100.(100.)		94.3	75 - 12	5
Manganese	ug/L	5.00	95.4	100.(100.)		95.4	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Copper	ug/L	1.00	19.0	20.0		95.0	90 - 110	כ
Manganese	ug/L	1.00	19.0	20.0		95.2	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Copper	ug/L	1.00	20.4	20.0		102.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Copper	ug/L	1.00	19.2	20.0		96.2	90 - 110	כ

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Metals by EPA 200.8, To	otai			100112A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803609-001 Antimony		ug/L	10/01	/2012 16:08 5	5.00	0.420	2.0	ND
803609-002 Antimony		ug/L	10/01	/2012 16:15 5	5.00	0.420	2.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Antimony	ug/L	1.00	ND					
Duplicate							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	ance Range
Antimony	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Antimony	ug/L	1.00	0.492	0.400		123.	70 - 13	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Antimony	ug/L	5.00	115.	100.		115.	85 - 11	5
Matrix Spike							Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected/Adde	ed R	ecovery	Accepta	ance Range
Antimony	ug/L	5.00	112.	100.(100.)		112.	75 - 12	5
Matrix Spike Duplica	ite						Lab ID =	803607-001
Parameter	Unit	DF	Result	Expected/Adde	ed R	ecovery	Accepta	ance Range
Antimony	ug/L	5.00	119.	100.(100.)		119.	75 - 12	5
MRCCS - Secondary	y (1981)							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	ance Range
Antimony	ug/L	1.00	19.9	20.0		99.6	90 - 110	כ
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ance Range
Antimony	ug/L	1.00	20.2	20.0		101.	90 - 11	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ance Range
Antimony	ug/L	1.00	20.4	20.0		102.	90 - 11	o -
Interference Check 5	Standard A							
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ance Range
Antimony	ug/L	1.00	ND	0.00		•		



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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803609-001 Nickel		ug/L	10/02	/2012 20:45	5.00	0.355	2.0	2.3
803609-002 Nickel		ug/L	10/02	/2012 20:52	5.00	0.355	2.0	7.2
Method Blank		- 14 () - 2 ()						
Parameter	Unit	DF	Result					
Nickel	ug/L	1.00	ND					
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	ı	Recovery		ance Rang
Nickel	ug/L	1.00	0.470	0.400		117.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	ſ	Recovery	-	ance Rang
Nickel	ug/L	5.00	108.	100.		108.	85 - 11	-
Matrix Spike							Lab ID = 80360	
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	•	ance Rang
Nickel	ug/L	5.00	103.	100.(100.)		103.	75 - 125	
Matrix Spike Duplicat	е						Lab ID =	803607-00
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	•	ance Rang
Nickel	ug/L	5.00	109.	100.(100.)		109.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	ı	Recovery		ance Rang
Nickel	ug/L	1.00	21.7	20.0		108.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	-	Recovery		ance Rang
Nickel	ug/L	1.00	21.6	20.0		108	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	١	Recovery	•	ance Rang
Nickel	ug/L	1.00	21.8	20.0		109	90 - 110)
Interference Check S	tandard A							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Nickel	ug/L	1.00	ND	0.00				
Interference Check S	tandard A							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Nickel	ug/L	1.00	ND	0.00				



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Interference	Chack	Standar	$A \Delta R$
much eternice.	CHECK	Sianuai	$u \wedge u$

Witch of Chicon Chicon Chicon						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	22.7	20.0	114.	80 - 120
Interference Check St	tandard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	23.7	20.0	119.	80 - 120

Reactive Silica by SM45	00-Si D		Bato	th 09Si12A				
Parameter		Unit	An	alyzed	DF	MDL	RL	Result
803609-002 Silica		mg/L	09/1	11/2012	100	1.01	4.00	19.4
Method Blank								
Parameter Silica	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	803645-001
Parameter Silica	Unit mg/L	DF 1.00	Result ND	Expected 0.00	ļ	RPD 0	Accepta 0 - 20	ance Range
Lab Control Sample								
Parameter Silica	Unit mg/L	DF 1.00	Result 0.228	Expected 0.220	ļ	Recovery 104.	Accepta 90 - 110	ance Range
Matrix Spike							Lab ID =	803645-001
Parameter Silica	Unit mg/L	DF 1.00	Result 0.344	Expected/Add 0.400(0.400)		Recovery 85.9	Accepta 75 - 129	ance Range
MRCCS - Secondary								
Parameter Silica	Unit mg/L	DF 1.00	Result 0.120	Expected 0.110		Recovery 109.	Accepta 90 - 110	ance Range
MRCVS - Primary								
Parameter Silica	Unit mg/L	DF 1.00	Result 0.418	Expected 0.400		Recovery 104.	Accepta 90 - 110	ance Range)



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Total Dissolved Solid	s by SM 2540	C	Batch	09TDS12A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
803609-001 Total Dissolve	ed Solids	mg/L	09/06/	/2012	1.00	0.757	250.	4070
803609-002 Total Dissolve	ed Solids	mg/L	09/06/	/2012	1.00	0.757	250.	4360
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	803609-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	4580	4360		4.92	0 - 10	
Lab Control Sampl	e jiji ika a su							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	504	500.		101.	90 - 110)



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Total Organic Carbon (T/DOC) SN	1 5310 C	Batch	09TOC12A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
803609-002 Total Organic (Carbon	mg/L	09/07	/2012 14:44 1.0	0.0309	0.300	ND
Method Blank							
Parameter	Unit	DF	Result				
Total Organic Carbon	mg/L	1.00	ND				
Duplicate						Lab ID =	803609-002
Parameter	Unit	DF	Result	Expected	RPD	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	ND	0.00	0	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	2.98	3.22	92.5	90 - 110	
Matrix Spike						Lab ID =	803609-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	8.42	10.0(10.0)	84.2	75 - 125	
MRCCS - Secondar	y						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	3.06	3.22	95.1	85 - 115	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	9.35	10.0	93.5	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	9.80	10.0	98.0	90 - 110	



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Parameter		Unit	Án	alyzed	DF	MDL	RL	Result
803609-001 Total Organic Car	bon	mg/L	09/2	24/2012 14:11	1.00	0.0309	0.300	ND
Method Blank	754. j. 15	Fure of the so,						
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	803609-001
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result ND	Expected 0.00		RPD 0	Accepta 0 - 20	nce Range
Lab Control Sample								
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 3.00	Expected 3.22		Recovery 93.2	90 - 110	
Matrix Spike							Lab ID =	803609-001
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 8.31	Expected/Ac 10.0(10.0)	dded	Recovery 83.1	Accepta 75 - 125	nce Range
MRCCS - Secondary								
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 3.03	Expected 3.22		Recovery 94.2	Accepta 85 - 115	nce Range
MRCVS - Primary								
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 9.66	Expected 10.0		Recovery 96.6	Accepta 90 - 110	ince Range
MRCVS - Primary								
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 9.52	Expected 10.0		Recovery 95.2	Accepta 90 - 110	nce Range



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Batch 09TP12A Total Phosphate, SM 4500-PB,E Unit DF MDL RL Result Parameter Analyzed 0.0200 09/07/2012 1.00 0.00650 ND 803609-002 Phosphate, Total As P mg/L Method Blank Parameter Unit DF Result Phosphate, Total As P mg/L 1.00 ND Lab ID = 803607-001 Duplicate **RPD** Unit DF Result Expected Acceptance Range Parameter 0.0699 8.81 0 - 201.00 0.0640 Phosphate, Total As P mg/L Lab Control Sample DF Result Expected Recovery Acceptance Range Unit Parameter 1.00 0.140 0.130 108. 90 - 110 Phosphate, Total As P mg/L Lab ID = 803607-001 Matrix Spike Expected/Added Recovery Acceptance Range Unit DF Result Parameter 0.135(0.0650)106. 75 - 125 1.00 0.138 mg/L Phosphate, Total As P MRCCS - Secondary Expected Recovery Acceptance Range Unit DF Result Parameter 1.00 0.0688 0.0650 106. 90 - 110 Phosphate, Total As P mg/L MRCVS - Primary DF Expected Recovery Acceptance Range Unit Result Parameter 0.0644 0.0650 99.1 90 - 110 1.00 mg/L Phosphate, Total As P



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Ammonia Nitrogen by SI	VI4500-NH	13D	Batch	09NH312B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
803609-001 Ammonia as N		mg/L	09/10	/2012	1.00	0.00980	0.500	ND
803609-002 Ammonia as N		mg/L	09/10	/2012	1.00	0.00980	0.500	ND
Method Blank	Herrich							
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	8.61	8.00		108.	90 - 110	_
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	8.02	8.00		100.	90 - 110	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.37	6.00		106.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.43	6.00		107.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.58	6.00		110.	90 - 110	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
303609-002 M anganese		ug/L	09/19	/2012 14:44 5	5.00 0	.270	0.50	4.2
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	803605-00
Parameter	Unit	DF	Result	Expected	RPD)	Accepta	ance Range
Chromium	ug/L	5.00	ND	0.00	0		0 - 20	
Manganese	ug/L	5.00	ND	0.00	0		0 - 20	
Low Level Calibra	ation Verification							
Parameter	Unit	DF	Result	Expected	Rec	overy	Accepta	ance Range
Chromium	ug/L	1.00	0.215	0.200	10	7.	70 - 130	כ
Manganese	ug/L	1.00	0.130	0.100	13	0.	70 - 130	כ
Lab Control Sam	ple							
Parameter	Unit	DF	Result	Expected	Rec	overy	Accepta	ance Range
Chromium	ug/L	5.00	102.	100.	10	2.	85 - 115	5
Manganese	ug/L	5.00	98.8	100.	98	.8	85 - 115	5
Matrix Spike							Lab ID =	803605-00
Parameter	Unit	DF	Result	Expected/Adde	ed Rec	overy	Accepta	ance Range
Chromium	ug/L	5.00	107.	100.(100.)	10	7.	75 - 125	5
Manganese	ug/L	5.00	104.	100.(100.)	10	4.	75 - 125	5
Matrix Spike Dup	licate						Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Adde	ed Rec	overy	Accepta	ance Range
Chromium	ug/L	5.00	102.	100.(100.)	10	2.	75 - 125	5
Manganese	ug/L	5.00	97.0	100.(100.)	97	.0	75 - 125	5
MRCCS - Second	dary							
Parameter	Unit	DF	Result	Expected	Rec	overy		ance Range
Chromium	ug/L	1.00	10.0	10.0	10		90 - 110	
Manganese	ug/L	1.00	9.76	10.0	97	.6	90 - 110)
MRCVS - Primar								
Parameter	Unit	DF	Result	Expected	Rec	overy	Accepta	ance Range
Chromium	ug/L	1.00	9.42	10.0	94	.2	90 - 110	כ



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Parameter		Unit	Δnal	yzed	DF	MDL	RL	Result
							48.4	
803609-002 Iron		ug/L	09/10	/2012 12:23	1.00	1.34	20.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Iron	ug/L	1.00	ND					
Duplicate							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected	F	RPD	•	ance Range
Iron	ug/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Range
Iron	ug/L	1.00	2130	2000		107.	85 - 11	5
Matrix Spike							Lab ID =	803605-001
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	Accepta	ance Range
Iron	ug/L	1.00	117.	100.(100.)		117.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Range
Iron	ug/L	1.00	5080	5000		102.	95 - 10	5
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	ſ	Recovery	Accepta	ance Range
Iron	ug/L	1.00	5230	5000		104.	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Iron	ug/L	1.00	5180	5000		104.	90 - 11	0
Interference Check S	tandard A							
Parameter	Unit	DF	Result	Expected	١	Recovery	Accepta	ance Range
Iron	ug/L	1.00	2140	2000		107.	80 - 12	0
Interference Check S	tandard A							
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Iron	ug/L	1.00	2210	2000		110.	80 - 12	0
Interference Check S	_							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Iron	ug/L	1.00	2120	2000		106.	80 - 12	_



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Project Number: 456827.01.DM Printed 10/3/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2170	2000	109.	80 - 120

Turbidity by SM 2130	3		Bato	th 09TUC12C				
Parameter		Unit	Ar	alyzed	DF	MDL	RL	Result
803609-001 Turbidity		NTU	09/0	05/2012	1.00	0.0140	0.100	ND
803609-002 Turbidity		NTU	09/0)5/2012	1.00	0.0140	0.100	0.153
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	803607-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result 8.33	Expected 8.00		Recovery 104.	Accepta 90 - 110	nce Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.83	Expected 8.00	F	Recovery 97.9	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

- √ Mona Nassimi

Manager, Analytical Services





Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 09TDS12A

Date Analyzed: 9/6/12

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	69.5584	69.5585	69.5584	0.0001	No	0.0000	0.0	25.0	ND	1
803609-1	10	50.4116	50.4527	50.4523	0.0004	No	0.0407	4070.0	250.0	4070.0	1
803609-2	10	48.9998	49.0434	49.0434	0.0000	No	0.0436	4360.0	250.0	4360.0	1
803605-1	100	72.3867	72.4255	72.4251	0.0004	No	0.0384	384.0	25.0	384.0	11
803605-2	100	75.7606	75.7891	75.7888	0.0003	No	0.0282	282.0	25.0	282.0	1
803605-3	100	67.1032	67.1421	67.1417	0.0004	No	0.0385	385.0	25.0	385.0	1
803605-4	100	72.5701	72.5984	72.5984	0.0000	No	0.0283	283.0	25.0	283.0	1
803606-1	50	72.8146	72.8805	72.8802	0.0003	No	0.0656	1312.0	50.0	1312.0	1
803606-2	50	66.8049	66.8781	66.8781	0.0000	No	0.0732	1464.0	50.0	1464.0	1
803607	100	74.8658	74.8934	74.8933	0.0001	No	0.0275	275.0	25.0	275.0	1
8036081	20	48.1380	48.1941	48.1941	0.0000	No	0.0561	2805.0	125.0	2805.0	1
803609-2D	10	50.9558	51.0019	51.0016	0.0003	No	0.0458	4580.0	250.0	4580.0	1
LCS	100	78.3982	78.4487	78.4486	0.0001	No	0.0504	504.0	25.0	504.0	1
803608-2	10	47.9024	47.9532	47.9528	0.0004	No	0.0504	5040.0	250.0	5040.0	1
803593-14	50	74.7265	74.75555	74.7555	0.0001	No	0.0290	580.0	50.0	580.0	1
803593-15	50	75.4432	75.4712	75.4708	0.0004	No	0.0276	552.0	50.0	552.0	1
803603-17	50	76.5103	76.5486	76.5484	0.0002	No	0.0381	762.0	50.0	762.0	1
803613	50	71.8113	71.8465	71.8465	0.0000	No	0.0352	704.0	50.0	704.0	1
803615-4	100	74.5343	74.5711	74.5709	0.0002	No	0.0366	366.0	25.0	366.0	1
803616	440	111.3713	111.3791	111.3791	0.0000	No	0.0078	17.7	5.7	17.7	1
803629	50	65.4491	65.5019	65.5019	0.0000	No	0.0528	1056.0	50.0	1056.0	1
803644	50	76.3436	76.3754	76.3754	0.0000	No	0.0318	636.0	50.0	636.0	1
803691	100	111.3303	111.3793	111.3793	0.0000	No	0.0490	490.0	25.0	490.0	11

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

Lasolator	, 00111101 00		1	· · · · · · · · · · · · · · · · · · ·	
QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	504	500	100.8%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803609-2	0.0436	0.0458	2.5%	≤5%	Yes

LCS Recovery $P = \left(\frac{LC}{LT}\right) x \ 100$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

% Difference =
$$\frac{\left|\frac{1}{A \text{ or } B - C}\right|}{C} \times 10^{6}$$

C =

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Total Dissolved Solids by SM 2540 C

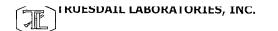
TDS/EC CHECK

Batch: 09TDS12A
Date Analyzed: 9/6/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803609-1	7050	0.58	4582.5	0.89
803609-2	7450	0.59	4842.5	0.90
803605-1	565	0.68	367.25	1.05
803605-2	441	0.64	286.65	0.98
803605-3	563	0.68	365.95	1.05
803605-4	437	0.65	284.05	1.00
803606-1	1933	0.68	1256.45	1.04
803606-2	1956	0.75	1271.4	1.15
803607	453	0.61	294.45	0.93
8036081	4770	0.59	3100.5	0.90
803609-2D	7450	0.61	4842.5	0.95
LCS				
803608-2	8260	0.61	5369	0.94
803593-14	933	0.62	606.45	0.96
803593-15	908	0.61	590.2	0.94
803603-17	1344	0.57	873.6	0.87
803613	1262	0.56	820.3	0.86
803615-4	640	0.57	416	0.88
803616	32.3	0.55	20.995	0.84
803629	1670	0.63	1085.5	0.97
803644	921	0.69	598.65	1.06
803691	616	0.80	400.4	1.22







Alkalinity by SM 2320B

Analytical Batch: 09ALK12A

Matrix: Water

Date of Analysis: 9/5/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	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 CaCO₃ (ppm)	OH Alkalinity as CaCO₃ (ppm)	Low Alkalinity as CaCO ₃ (<20ppm)
BLANK	5.83	50	0.02		0.0	0.00		0.0	5	ND	ND	NĎ	ND	
803444-21	7 91	50	0.02		0.0	4.40		88.0	5	88.0	88.0	ND	ND	
803603-21	8.06	50	0.02		0.0	4.50		90.0	5	90.0	90.0	ND	ND	
803615-5	7.98	50	0.02		0.0	4.75		95.0	5	95.0	95.0	ND	ND	
803603-17	7.27	50	0.02		0.0	4.85		97.0	5	97.0	97.0	ND	ND	
803607	7.70	50	0.02		0.0	5.00		100.0	5	100,0	100.0	ND	ND	
803609-2	7.40	50	0.02		0.0	7.25		145.0	5	145.0	145.0	ND	ND	A. 1888
803607 DUP	7.73	50	0.02		0.0	4:95		99.0	5	99.0	99.0	ND	ND	3,01
803607 MS	9.56	50	0.02	2.1	42.0	10.10		202.0	5	202.0	118,0	84	ND	
LCS	10.50	50	0.02	2.4	47.0	5.05	***************************************	101.0	5	101.0	7.0	94	ND	
LCSD	10.54	50	0.02	2.3	46.0	4.95		99.0	5	99.0	7.0	92	ND	

					,-,-									

Calculations as follows:

Tor P=

 $\left(\frac{A \times N \times 50000}{mL \ sample}\right)$

Low Alkalinity: = as mg/L CaCO3

(2 x B - C) x N x 50000

mL sample

Blank Summary

_	Blank Ga	i i i i i i i i i i i i i i i i i i i			
	Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?	
	maa Z	0	<5	Yes	l

Where: mL sample T = Total Alkalinity, mg CaCO3/L

P = Phenolphthalein Alkalinity, mg CaCO3/L

A = mL standard acid used N = normality of standard acid 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)

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	I.D. Value, ppm		%Recovery	Accetance Limit	QC Within Control?
LCS	101	100	101.0%	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?
803607	100	99	1.0%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Conc	MS/MSD Amt	of Spk Spi	Theor Conc of Spk Spl	MS/MSD %Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
803607	100	1	100	100	202	200.00	102%	75.405	Yes			
		1	100	100				75-125				_

Melissa S.
Analyst Printed Name

090512a

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

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A diameter	•

TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462

CHAIN OF CUSTODY RECORD

COC Number

TURNAROUND TIME DATE 9/04/12

10 Days

www.t	ruesdail.com										•	0) () [9	DAT	ΓΕ <u>9</u> /	04/1	2		PAGE	1	OF1
COMPANY	CH2M HILL /E2	2	į			···	7	7	7	7	/	7	7	7	7			» /	<u>a/</u>	7		7		
PROJECT NAME	PG&E Topock I	IM3			<u>.</u>								<u>*</u> /						<u>\</u>			/	COMM	IENTS
PHONE	530-229-33	303	FAX 530	-339-3303			/	/	/	/ ,		List Below			\\^{\frac{1}{2}}			(4500-c:		/ ,	/ /	•		
ADDRESS	155 Grand Ave	Ste 1000					Delam				- /	Ø 1	- /		3,804	/	1/2/	Ve (4		ROFCONTAIN	ERS			
	Oakland, CA 94	1612	:									ž / ž	हे /		Ş /	/5				NAY.				
P.O. NUMBER	456827.01.DM	1), Lab	20.B	/	/_ ,	/ ,	180	\oog\ \00g\). A (0:		stals,	A - 6	/ ₈ %		/§	/			
SAMPLERS (SIGNA	TURE	auto	> :		/,	(278.6	(S) /2/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3/	(7)	020	(05/	Metals	mia (4)	450(00) S	0370	Ved IN	le Silic	V-005+		10 A.				
SAMPLE I.D.		DATE	TIME	DESCRIPTION		Alkalin. (278.6) Lab F	EC (1320-B)		Turb (2540 C)	Zotal,	Amm. (200.7)	Total F. (4500-NH2)	Anior (4500-P)	70C (300.0) F. M.S.	Dissol.		NOZ / Res	(4500-NO2B)	NUMBE					
SC-700B-W	DR-377	9/04/12	13:19		Х		Х	Х	Х	Х	Х		Х	Х			×		4		pi	l=2	2 (99.7
SC-100B-W	DR-377	9/04/12	14:55		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х		10		m	1 = 2	h	<i>U=7</i>
			: -																			9.77)		07.00
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	veIII	QU	moutos establecto					96			jo													
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	CHAIN OF CUSTOD	SAMPLE CONDITIONS				
	Signature (Relinquished) Clarett Printed Name C.K.M.	IQW-Company/ OHZM HILL	Date/9-4-2 Time /5:37	RECEIVED COOL WARM 1 4.8 %		
- 1	Signature (Received) Printed Ra Fore	Company/ T.L.I	Date/ 9 - 4 - 1 2 Time 1 5 - 2 0	CUSTODY SEALED YES NO Z		
	Signature (Relinquished) Rafael) av Name Rafae	e Company/ T.L. I	Date/of 4-12 Time 23:00	SPECIAL REQUIREMENTS:		
7	Signature (Received) Similar But minima Printed Name Kinda	Company/ Agency	Date/ Time 9/4/12 25:0	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn,		
छ	Signature Printed (Relinquished) Name	Company/ Agency	Date/ Time	Mo, Ni, Fe, Zn		
	Signature Printed (Received) Name	Company/ Agency	Date/ Time			

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
09/03/12	803606 -1	9-5	NIA	NIA	NIA	HAV
1	4 -2	1	1 1	1	1,	1
09/05/12	803607	9.5	HIA	NIA	HIA	HAV
09/05/12	803608-1	7	2 ml	9.5	1-9:30 AM	HAV
09/03/12	803609-1	7	2 ml	9,5	9:45 AM	HAV
1	4 -2	1	1	4	1	4
09/06/12	803629	9.5	NIA	NIA	N/A	HAY
				,		
			·			
				-		
		·				
					,	
				·		
					·	
						·

HAY 09/05/12

HAY 09/07/12

Qualioliz



Turbidity/pH Check

	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments	
0	80360511-4)	.<1	12	9-5-12	BE	3a 10A				
	893606(1-2)									
	803647									
	803608(1-2)									
_	803609 L1-2)		<2				3 BE		ļ	9-9
~_	803609-2		72	1 1 10		1 1	AMM			9 A
	803668 (1-2)	41	72	9-5-12	ES	3010A		Filth then au		K
L	863662	21	72			NU	4:70pm	9-10	PH <2	-
	907603 (17,24)	101	72	<u> </u>	<u> </u>	<u></u>	<u> </u>	. <i>y</i>	7	-
1	00 7404		Z 2			3010A				-
L	803611		4		 	<u> </u>	200			-
-	807 614		72_			NU	4:20 pm	9-10	PHCZ	-
L	807617		22	<u> </u>	١	70101	15 34 8744	<u> </u>	PHCZ	-
-	415 (1-3)		72		-		4: 20 711		PHC	-
L	618 (10-12)		72				4:30,000	1	<u> </u>	4
F	619	1	1	0 () =	4	7010 A		-		-
L	803629	<1	42	9-6-12	BE	30 10 A	 			4
F	80362861-2)	<u> </u>				<u></u>]	-
-	803645	<u> </u>	<u> </u>	 		No	15.20		21140	4
-	8 ° 3659 (1-3)	<1	>2_			1/4	18:30	9-10	PH<2	-
L	803651		<u> </u>	 	+		<u> </u>		<u></u>	1
-	803662	>1	< 2	+	<u> </u>	30 101	 	-	W 11 2 0	-
-	803866	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	17:00	9-10	PH22	+
-	8936676-7)		1 1 2	9 -7-12	BE	BolaA				4
-	803668	<1	<u>.</u>	-		 		 	<u> </u>	-
L	203678	<1	<2.							-
L	803677	<u></u>	1		 - -	 	-			-
L	803682	>1	< 2		 					-
-	8 03678		<u> </u>	Jr	<u> </u>	<u> </u>			-	-
-	503691	1<	<2 1	9-10-12	BE	30109		ļ		-
-	803693	<u> </u>	\	<u> </u>	<u> </u>	<u></u>	8130	10 10 10	A11 < 9	-
L	803748	<1	72	9-11-12	BE	WO	8.90	9-13-12	PH < 2	
	603707		<u> </u>			30 10A	10:40	790 Acide	· le e l· 1 pm	١,
-	803715		>2			70 30 10 A	12:00	190 11000-	ARCTI IN	-
F	£03710		<2·		-	3-1				-
-	803711		<u> </u>		 	150			<u> </u>	-
-	803712 (143)	<u></u>	72	 	+	NO	14:00	BE 9-11-12		+
-	803712 - 2	72		2 12 12	1	30 teA	<u> </u>	BE 1-11-1-		4
-	8.0374 941-41		<2 1	9-12-12	BE	BOLOA			 	-
1	803751(1-4)				 	-				4
1	803750	4	>2				-	ļ	<u> </u>	-
L	8037 25	<1	<2				-			4
- 1	803726	71	1 1							

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



Sample Integrity & Analysis Discrepancy Form

`lient	: <u>E</u> 2	Lab# <u>8036 09</u>
ate l		ld Service □Client
	Was a Chain of Custody received and signed?	Ø(Yes □No □N/A
	Does Customer require an acknowledgement of the COC?	□Yes □No ÞN/A
	Are there any special requirements or notes on the COC?	□Yes □No ØN/A
	If a letter was sent with the COC, does it match the COC?	□Yes □No ☑N/A
	Were all requested analyses understood and acceptable?	⊿Yes □No □N/A
	Were samples received in a chilled condition? Temperature (if yes)? とらって	de Yes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	⊠Yes □No □N/A
	Were sample custody seals intact?	☐Yes ☐No Þ�N/A
	Does the number of samples received agree with COC?	dayes □No □N/A
0.	Did sample labels correspond with the client ID's?	daYes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	∠ Yes □No □N/A
2.	Were samples pH checked? pH = $\frac{See}{e}$. ω . e .	,⊈Yes □No □N/A
ے. 3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	daYes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): RUSH Std	. ∰≪es □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground □Sludge □Soil □Wipe □Paint □Solid ※	111 /
16.	Comments:	, 00 0
17.	Comments:	L. Eliabelle

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October 2, 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-WDR-378 PROJECT, GROUNDWATER

MONITORING, TLI No.: 803750

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-378 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on September 11, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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



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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: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 803750

Date: October 2, 2012 Collected: September 11, 2012 Received: September 11, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Bita Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

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Laboratory No.: 803750

Date Received: September 11, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM P.O. No.: 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803750-001	SC-700B-WDR-378	F120.1	NONE	9/11/2012	14:00	EC	7260	umhos/cm	2.00
803750-001	SC-700B-WDR-378	E200.8	NONE	9/11/2012	14:00	Chromium	ND	ug/L	1.0
803750-001	SC-700B-WDR-378		NONE	9/11/2012	14:00	Manganese	1.9	ug/L	0.50
803750-001	SC-700B-WDR-378	F218 6	LABFLT	9/11/2012	14:00	Chromium, Hexavalent	0.35	ug/L	0.20
803750-001	SC-700B-WDR-378	SM2130B	NONE	9/11/2012	14:00	Turbidity	ND	NTU	0.100
803750-001	SC-700B-WDR-378	•=	NONE	9/11/2012	14:00	Total Dissolved Solids	4120	mg/L	250

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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Page 1 of 7

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Printed 10/2/2012

Water

Laboratory No. 803750

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: 456827.01.DM P.O. Number: 456827.01.DM

Release Number:

Field ID

SC-700B-WDR-378

Samples Received on 9/11/2012 9:30:00 PM

Lab ID Collected Matrix

09/11/2012 14:00

803750-001

Specific Conductivity -	EPA 120.1			1 09EC12E					
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result	
803750-001 Specific Condu	ctivity	umhos/d	m 09/1	4/2012	1.00	0.116	2.00	7260	
Method Blank									
Parameter	Unit	DF	Result						
Specific Conductivity	umhos	1.00	ND						
Duplicate							Lab ID =	803750-001	
Parameter	Unit	DF	Result	Expected	F	RPD	Acceptance Rang		
Specific Conductivity	umhos	1.00	7270	7260	0.138		0 - 10		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range	
Specific Conductivity	umhos	1.00	702	706		99.4	90 - 110)	
MRCCS - Secondary									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range	
Specific Conductivity	umhos	1.00	698	706		98.9	90 - 110)	
MRCVS - Primary									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range	
Specific Conductivity	umhos	1.00	973	998		97.5	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 problem authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Chrome VI by EPA 218.0	6		Batch	09CrH12D				
Parameter	ur er er er er er er er er er er er er er	Unit	Ana	lyzed	DF	MDL	RL	Result
803750-001 Chromium, Hex	avalent	ug/L	09/12	2/2012 13:42	1.00	0.0250	0.20	0.35
Method Blank								1. A
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	803749-002
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	38.0	38.1		0.123	0 - 20	
Low Level Calibration	Verification	resiles.						
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200		100.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Į	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00		97.7	90 - 110)
Matrix Spike							Lab ID =	803749-003
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	5.97	6.06(5.00)		98.3	90 - 110)
Matrix Spike							Lab ID =	803749-004
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	7.09	7.14(5.00)		99.0	90 - 110)
Matrix Spike							Lab ID =	803750-001
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	1.38	1.35(1.00)		102.	90 - 110)
Matrix Spike							Lab ID =	803751-001
Parameter	Unit	DF	Result	Expected/Adde	ed l	Recovery	•	ince Range
Chromium, Hexavalent	ug/L	1.00	0.985	1.00(1.00)		98.5	90 - 110	
Matrix Spike							Lab ID =	803751-002
Parameter	Unit	DF	Result	Expected/Adde	ed l	Recovery		ınce Range
Chromium, Hexavalent	ug/L	1.00	1.14	1.10(1.00)		104.	90 - 110	
Matrix Spike							Lab ID =	803751-003
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	-	ince Range
Chromium, Hexavalent	ug/L	1.05	48.8	47.7(25.0)		104.	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Parameter		Unit	Anal	yzed C	F MDL	RL	Result	
803750-001 Chromium		ug/L	09/26	/2012 20:58 5.	00 0.195	1.0	ND	
Manganese		ug/L	09/26	/2012 20:58 5.	00 0.270	0.50	1.9	
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate						Lab ID =	803750-001	
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range	
Chromium	ug/L	5.00	ND	0.00	0	0 - 20		
Manganese	ug/L	5.00	2.06	1.93	6.66	0 - 20		
Low Level Calibration	Nerification							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range	
Chromium	ug/L	1.00	0.194	0.200	96.8	70 - 130)	
Manganese	ug/L	1.00	0.0998	0.100	99.8	70 - 130)	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range	
Chromium	ug/L	5.00	98.5	100.	98.5	85 - 115		
Manganese	ug/L	5.00	100.	100.	100.	85 - 115	5	
Matrix Spike						Lab ID =	803750-001	
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accepta	ance Range	
Chromium	ug/L	5.00	99.5	100.(100.)	99.5	75 - 125	5	
Manganese	ug/L	5.00	101	102.(100.)	99.1	75 - 125	5	
Matrix Spike Duplicat	te					Lab ID =	803750-001	
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accepta	ance Range	
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125	5	
Manganese	ug/L	5.00	103.	102.(100.)	101.	75 - 125	5	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	19.6	20.0	97.8	90 - 110)	
Manganese	ug/L	1.00	20.0	20.0	99.8	90 - 110)	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	18.9	20.0	94.6	90 - 110	_	



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Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Interference Check Standard AB

interierence Grieck Of	anuaru AD														
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range									
Chromium	ug/L	1.00	20.2	20.0	101.	80 - 120									
Interference Check St	tandard AB														
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range									
Manganese	ug/L	1.00	20.4	20.0	102.	80 - 120									
Interference Check St	Interference Check Standard AB														
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range									
Manganese	ug/L	1.00	19.8	20.0	98.8	80 - 120									

Total Dissolved Solids	by SM 254	40 C	Bato	ch 09TDS12C				
Parameter	7	Unit	Ar	nalyzed	DF	MDL	RL	Result
803750-001 Total Dissolved	l Solids	mg/L	09/	13/2012	1.00	0.757	250.	4120
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	803750-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	4400	4120		6.57	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	494	500.		98.8	90 - 110	0



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Turbidity by SM 2130	В		Bato	th 09TUC12E				
Parameter		Unit	Ar	alyzed	DF	MDL	RL	Result
803750-001 Turbidity		NTU	09/1	13/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	803750-001
Parameter Turbidity	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range
Lab Control Sampl	le							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.39	Expected 8.00	F	Recovery 105.	Accepta 90 - 110	nce Range
Lab Control Sampl	le Duplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.30	Expected 8.00	F	Recovery 104.	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

🗸 – Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

12

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 09TDS12C Date Analyzed: 9/13/12

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,	Reported Value, ppm	DF
Blank	100	67.7011	67.7011	67.7011	0.0000	No	0.0000	0.0	25.0	ND	1
803712-1	50	69.4141	69.4608	69.4608	0.0000	No	0.0467	934.0	50.0	934.0	1
803712-2	100	67.1660	67.2226	67.2224	0.0002	No	0.0564	564.0	25.0	564.0	1
803712-3	100	74.7089	74.7604	74.7602	0.0002	No	0.0513	513.0	25.0	513.0	. 1
803749-1	50	72.4982	72.5498	72.5494	0.0004	No	0.0512	1024.0	50.0	1024.0	1
803749-2	50	67.2101	67.2720	67.2719	0.0001	No	0.0618	1236.0	50.0	1236.0	1
803750	10	50.4936	50.5352	50.5348	0.0004	No	0.0412	4120.0	250.0	4120.0	1
803757-1	50	71.3091	71.3453	71.3453	0.0000	No	0.0362	724.0	50.0	724.0	<u>-</u> -
803800	20	47.7625	47.866	47.8656	0.0004	No	0.1031	5155.0	125.0	5155.0	1
803801	20	47.2217	47.3135	47.3135	0.0000	No	0.0918	4590.0	125.0	4590.0	1
803802	10	51.4320	51.5367	51.5367	0.0000	No	0.1047	10470.0	250.0	10470.0	1
803750D	10	51.4255	51.4697	51.4695	0.0002	No	0.0440	4400.0	250.0	4400.0	1
LCS	100	76.1946	76.2444	76.2440	0.0004	No	0.0494	494.0	25.0	494.0	1
803803	10	72.6433	72.7046	72.7046	0.0000	No	0.0613	6130.0	250.0	6130.0	1
803804	20	50.9462	51.0392	51.0392	0.0000	No	0.0930	4650.0	125.0	4650.0	1
803805	10	47.9504	48.0144	48.0143	0.0001	No	0.0639	6390.0	250.0	6390.0	1
803806	10	51.0540	51.1183	51.1183	0.0000	No	0.0643	6430.0	250.0	6430.0	1
803807	10	49.5191	49.5793	49.5791	0.0002	No	0.0600	6000.0	250.0	6000,0	1
803808	100	78.3782	78.4163	78.4161	0.0002	No	0.0379	379.0	25.0	379.0	1
										5,0.0	

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

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

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

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

Laboratory	Control Sa	ontrol Sample (LCS) Summary											
QC Std	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?								
LCS1	494	500	98.8%	90-110%	Yes								
LCSD													

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803750	0.041	0:044	3.5%	≤5%	Yes
					· · · · · · · · · · · · · · · · · · ·

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm). LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name



Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 09TDS12C Date Analyzed: 9/13/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803712-1	1733	0.54	1126.45	0.83
803712-2	958 1	0.59	622.7	0.91
803712-3	844	0.61	548.6	0.94
803749-1	1520	0.67	988	1.04
803749-2	1770	0.70	1150.5	1.07
803750	7330	0.56	4764.5	0.86
803757-1	1200	0.60	780	0.93
803800	6420	0.80	4173	1.24
803801	6030	0.76	3919.5	1.17
803802	15830	0,66	10289.5	1.02
803750D	7330	0.60	4764.5	0.92
LCS				
803803	8030	0.76	5219.5	1.17
803804	6080	0.76	3952	1.18
803805	8420	0.76	5473	1.17
803806	8040	0.80	5226	1.23
803807	8650	0.69	5622.5	1.07
803808	665	0.57	432,25	0.88



CHAIN OF CUSTODY RECORD

COC Number

(714)7	l Franklin Avenue, T 730-6239 FAX: (714 truesdail.com		780-7008		4 1.7.1	[IM		nt-WDR-				3	7	50)			UND 9/11/ 1	TIME 12		PAGE	Days	OF 1
COMPANY	E2					************	$\overline{}$	7/	7 /	$\overline{}$	7	7	7	$\overline{\mathcal{I}}$	7	$\overline{}$	7	$\overline{}$	$\overline{}$	7	7	COMN	ENTO
PROJECT NAME	PG&E Topock							//		/ /	/ ,		/ ,	/	/					/		COMIN	IENES
PHONE	(530) 229-3303		fax <u>(530)</u>	339-3303		/	/ /	/ /	/ /	/ /			' /	/	' 	/ /	/	/ /	/ /	/ _ /			
ADDRESS	155 Grand Ave Oakland, CA 94		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	Q, M.	12/	///		/,		/ ,						CONTAINE				
P.O. NUMBER	456827.01. DM		TEAM	_1_		Lab Fillered	(200.7)	/ हुँ /	/ /	(08)				/	' 	/ /	/	/ /	\§ !				
SAMPLERS (SIGNA	ATURE	0.10	inegut		Cr6 (218.5.)	70th/Mar.	Specific	10S (SM2540C)	Turbidity (c.	(08/130)	/ ,		//				//	NUMBEL	10 And				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	18	120	/ 🗞	/R /	12		_/	_/	/	_/			/	/ <u>~</u>				*****	
SC-700B-WDF	₹-378	09/11/12	14:00	Water	х	х	Х	x	х									3			PH:	=6(2	100.7
																		3	TO	TAL N	UMBER	OF CON	AINERS



For Sample Conditions See Form Attached

CI	HAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished) C. KALQW	Printed C. Knight	Company/ Agency CH2WHILL	Date/ 9-11-12 Time (5:30	RECEIVED COOL WARM 1 43° E
	Printed La fact	Company/————————————————————————————————————	Date/ 9-//-/ Z Time /5/73	CUSTODY SEALED YES NO D
(Relinquished)	Printed A for	Agency T. L. I	Date/ Time	SPECIAL REQUIREMENTS:
Signature (Received) Shaker hima	Printed Visida	Company/ 72_P Agency	Date/ Time 9/11/12 2/32	
gnature G elinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

		,	·		Y	
Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
09/03/12	803606 -1	9-5	NIA	NIA	NIA	HAV
1	1 -2	1	1	1	2	1
09/05/12	803607	9.5	HIA	NIA	MIA	HAV
09/05/12	803608-1	7	2 ml	9.5	19:30 AM	
09/03/12	803609-1	7	2 ml	9,5	9:45 AM	HAV
4	4-2	4	1		1	7
09/06/12	803629	9.5	NIA	NIA	N/A	HAY
09/10/12	803691	9.5	NIA	NIA	NIA	HAV
09/10/12	803700-1	7	2 ml	9.5	HIZOPM	HAV
1	1 -2	2	1	1	4:40PM	HAV
09/12/12	803749-1	9.5	NIA.	NIA	MIA	HAV
	-2					
	~3					
.,,	-4	1	1			
09/12/12	803750	7	2 ml	9:3	9:00 AM	HAV
09/12/12	803751-1	9.5	NIA	NIA	NIA	HAV
	1 -2	1)		1
	-3					
	1, -4		4		J	
	·					7
		:				
o de Constante de Constante de Constante de Constante de Constante de Constante de Constante de Constante de C		the comment the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through the second through t				·

HAY 09/05/12

Q 9/13/12 039





Turbidity/pH Check

	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
0	80 3605(1-4)	. < \	12	9-5-12	BE	3010A			
	893606(1-2)								
ľ	803647								
ļ	803608(1-2)					-		<u> </u>	
7	803649 L1-2)		< 2						<u> </u>
o	803649-2		72					After fil Acid	
	803608 (1-2)	41	72	9-5-12	ES	3010A		Filth thin au	
Ī	803602	21	7 Z		1_	NU	4:7000		PH <2
	907 (e03 (17,24)	61	72			L	1,	. V	+
	50 na04	Ì	Z2			7010A	_		
Ī	803611		1			1			
Ī	803 414		72			Nυ	4:20 pm	9-10	PH<2
f	807617		22		1	70101			
Ī	(15 (1-3)		72			-	4: 210 701	9-10	PHCZ
Ī	618 (10-12)		72				4:30 pm	7	
	619	1	22	1	d	7010 A			
ļ	80 362 9	<1	くと	9-6-12	BE	30 10 A			
Ī	80362861-2)	(
Ī	803645	۷١	J						
	8 C 3659 U-3)	<\	>2			Ne	16:30	9-10	PH<2
f	803651		J	7	_		1		
	803662	>1	<2	1		30/01			
Ì	803666	1			1		17:00	9-10	PH22
	803667h-7)	<1	42	9 -7-12	BE	301.A		4	
Ī	803668	<1	J			\\			
ŀ	203678	くい	12						
l	803677	i.							
.	803682	>1	< 2						
	803678	1.		1					
	503691	71	12	9-10-12	BE	30109			
l	303693	٦٠ ـ	1.	7	7	4			
Ì	803748	۲,	. 72	9-11-12	BI	WO	8130	9-13-12	PH < 2
	€03797					130 10A			
	803715		72			~ °	12:00	790 Acide	aftefil pl
	803710		<٧.			30 LOA		•	
	803711								
	803712 (173)		72		L	NO	14:00		
	-803712 - 2	72				30 to A	1	95-9-11-12	
	30374 9(1-4)		42	9-12-12	BE	3010A			
	803751(1-4)		- 1	\					
	803750		>2						
	8037 25	<1	<2						
	803726	71	<u> </u>						
	803727					1 1			-

- Notes:

 1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.

 2. All Total Recoverable Analytes must be pH adjusted and digested.

 3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.



Sample Integrity & Analysis Discrepancy Form

	lient:	Lab # 803750
De	ate Delivered: <u>09</u> / <u>/ /</u> / 12 Time: <u>2/′30</u> By: □Mail 💢	Field Service
1.	Was a Chain of Custody received and signed?	AÓYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÆN/A
3 .	Are there any special requirements or notes on the COC?	□Yes □No æN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No pan/A
5 .	Were all requested analyses understood and acceptable?	d⊒Yes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? 4.2°C	ZiYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	A Yes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ÆIN/A
9.	Does the number of samples received agree with COC?	ДYes □No □N/A
10.	Did sample labels correspond with the client ID's?	dYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail Client	□Yes □No XÍN/A
2 .	Were samples pH checked? pH = Sel C. O. E.	₩es □No □N/A
·3.	Were samples pH checked? pH = _SCC_C. O. E. Were all analyses within holding time at time of receipt of the lf not, notify Project Manager.	Ayes ONO ON/A
4 .	Have Project due dates been checked and accepted? Tum Around Time (TAT): □ RUSH 설 Std	Yes DNo DNA
5.	Sample Matrix: DLiquid Dninking Water DGround W	/ater
	□Sludge □Soil □Wipe □Paint □Solid ⊅ac	Other Waler
ĵ.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda Hink

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

October 2, 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-WDR-379 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 803859

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-379 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on September 18, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance 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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

Laboratory No.: 803859

Date: October 2, 2012 **Collected:** September 18, 2012

Received: September 18, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Bita Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

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Laboratory No.: 803859

Date Received: September 18, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM P.O. No.: 456827.01.DM

Analytical Results Summary

		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
803859-001	SC-700B-WDR-379	E120.1	NONE	9/18/2012	8:48	EC	7070	umhos/cm	2.00
803859-001	SC-700B-WDR-379		NONE	9/18/2012	8:48	Chromium	ND	u g/L	1.0
	SC-700B-WDR-379		NONE	9/18/2012	8:48	Manganese	1.4	ug/L	0.50
803859-001	SC-700B-WDR-379		LABFLT	9/18/2012	8:48	Chromium, Hexavalent	0.24	ug/L	0.20
803859-001	SC-700B-WDR-379	SM2130B	NONE	9/18/2012	8:48	Turbidity	ND	NTU	0.100
803859-001	SC-700B-WDR-379	SM2540C	NONE	9/18/2012	8:48	Total Dissolved Solids	4000	mg/L	250

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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Printed 10/2/2012

Laboratory No. 803859

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: 456827.01.DM

P.O. Number: 456827.01.DM

Release Number:

Samples Received on 9/18/2012 9:30:00 PM

Field ID Lab ID Collected Matrix SC-700B-WDR-379 803859-001 09/18/2012 08:48 Water Specific Conductivity - EPA 120.1 Batch 09EC12F Parameter Unit Analyzed DF MDL RL Result 803859-001 Specific Conductivity umhos/cm 09/19/2012 1.00 0.116 2.00 7070 Method Blank Parameter Unit DF Result Specific Conductivity umhos 1.00 ND Duplicate Lab ID = 803859-001 Parameter Unit DF Result Expected **RPD** Acceptance Range Specific Conductivity umhos 1.00 7060 7070 0.142 0 - 10Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 708 706 100. 90 - 110 MRCCS - Secondary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 709 706 100. 90 - 110 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 965 998 96.7 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 the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without the condition that it is not to be used. authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Page 2 of 7 Printed 10/2/2012

Chrome VI by EPA 218.6	3		Batch	09CrH12G				
Parameter		Unit	Analy	yzed	DF	MDL	RL	Result
803859-001 Chromium, Hex	avalent	ug/L	09/19/	2012 12:05	1.00	0.00920	0.20	0.24
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	803859-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.230	Expected 0.235		RPD 2.19	Accept 0 - 20	ance Range
Low Level Calibration Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.194	Expected 0.200		Recovery 96.8	Accept 70 - 13	ance Range 0
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 4.88	Expected 5.00		Recovery 97.5	90 - 11	ance Range 0 = 803859-001
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.22	Expected/Add 1.24(1.00)	ded	Recovery 98.4	90 - 11	tance Range 10 = 803860-001
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.906	Expected/Add 1.00(1.00)	ded	Recovery 90.6	90 - 1	tance Range 10 = 803860-001
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 5.05	Expected/Ad 5.29(5.00)	ded	Recovery 95.3	90 - 1	tance Range 10 = 803860-002
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.990	Expected/Ad 1.00(1.00)	ided	Recovery 99.0	Accep 90 - 1	tance Range
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 4.86	Expected/Ac 5.00(5.00)	ided	Recovery 97.2	Accer 90 - 1	otance Range
Matrix Spike Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.928	Expected/Ac 1.00(1.00)	dded	Recovery 92.8	Accer 90 - 1	otance Range 10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

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Parameter	er per a commence a fresh and a second fill and a	Unit	Anal	yzed [OF MDL	. RL	Result
803859-001 Chromium		ug/L	09/26/2012 19:54		.00 0.195	1.0	ND
Manganese		ug/L	09/26	/2012 19:54 5	.00 0.270	0.50	1.4
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	803859-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	nce Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20	
Manganese	ug/L	5.00	1.49	1.41	5.45	0 - 20	
Low Level Calibration	n Verification	kaji. y					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	0.194	0.200	96.8	70 - 130)
Manganese	ug/L	1.00	0.0998	0.100	99.8	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	107.	100.	107.	85 - 115	;
Manganese	ug/L	5.00	99.8	100.	99.8	85 - 115	;
Matrix Spike						Lab ID =	803859-001
Parameter	Unit	DF	Result	Expected/Adde	d Recovery	Accepta	nce Range
Chromium	ug/L	5.00	98.6	100.(100.)	98.6	75 - 125	j
Manganese	ug/L	5.00	101	101.(100.)	99.6	75 - 125	;
Matrix Spike Duplica	te					Lab ID =	803859-001
Parameter	Unit	DF	Result	Expected/Adde	d Recovery	Accepta	nce Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125	;
Manganese	ug/L	5.00	101.	101.(100.)	99.8	75 - 125	
MRCCS - Secondary	689a. D						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	19.6	20.0	97.8	90 - 110)
Manganese	ug/L	1.00	20.0	20.0	99.8	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	18.9	20.0	94.6	90 - 110	_



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Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium	ug/L	1.00	20.2	20.0	101.	80 - 120	
Interference Check St	andard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Manganese	ug/L	1.00	20.4	20.0	102.	80 - 120	
Interference Check St	andard AB						
Parameter	Unit	DF	Resuit	Expected	Recovery	Acceptance Range	
Manganese	ug/L	1.00	19.8	20.0	98.8	80 - 120	

Total Dissolved Solids	by SM 254	10 C	Bato	h 09TDS12D				
Parameter		Unit	An	alyzed	DF	MDL	RL	Result
803859-001 Total Dissolved	l Solids	mg/L	09/1	19/2012	1.00	0.757	250.	4000
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	803859-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4180	Expected 4000		RPD 4.40	Accepta 0 - 10	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 507	Expected 500.	F	Recovery 101.	Accepta 90 - 110	ance Range



Client: E2 Consulting Engineers, Inc.

PG&E Topock Project Project Name:

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Project Number: 456827.01.DM

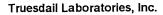
Printed 10/2/2012

Turbidity by SM 2130 B			Batch	n 09TUC12J				
Parameter		Unit	Analyzed		DF	MDL	RL	Result
803859-001 Turbidity		NTU	09/19	9/2012	1.00	0.0140	0.100	ND
Method Blank	tagyiri iliyaan							
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	803859-001
Parameter Turbidity	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range
Lab Control Sample								
Parameter Turbidity Lab Control Sample D	Unit NTU Duplicate	DF 1.00	Result 8.03	Expected 8.00		Recovery 100.	Accepta 90 - 110	nce Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.00	Expected 8.00	F	Recovery 100.	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Manager, Analytical Services





Total Dissolved Solids by SM 2540 C

Calculations

Batch: 09TDS12D Date Analyzed: 9/21/12

Laboratory Number	Sample volume, ml	lnitial 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,	Reported Value, ppm	DF
Blank	100	69.3395	69.3403	69.3402	0.0001	No	0.0007	7.0	25.0	ND	1
803859	10	48.5864	48.6266	48.6264	0.0002	No	0.0400	4000.0	250.0	4000.0	1
803864-1	480	110.7311	110.7315	110.7315	0.0000	_No	0.0004	0.8	5.2	ND	1
803867	50	49.2715	49.3092	49.3090	0.0002	No	0.0375	750.0	50.0	750.0	1
803884	490	112.3583	112.36	112.3596	0.0004	No	0.0013	2.7	5.1	ND	1
803859	10	47.5281	47.5702	47.5699	0.0003	No	0.0418	4180.0	250.0	4180.0	1
LCS	100	75. 2 084	75.2591	75.2591	0.0000	No	0.0507	507.0	25.0	507.0	1
10						-					
					<u> </u>			<u> </u>	<u> </u>	L	

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?		
LCS1	507	500	101.4%	90-110%	Yes		
LCSD							

Dunlicate Determinations Difference Summary

Duplicate Determinations Difference Cummary											
Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?						
803859	0.04	0.0418	2.2%	≤5%	Yes						

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

% Difference =
$$\frac{\left|\frac{1}{A \text{ or } B - C}\right|}{C} \times 10^{-6}$$

C = where

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 09TDS12D

Date Analyzed: 9/21/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
803859	7060	0.57	4589	0.87
803864-1	12.56	ND	8.164	ND
803867	1250	0.60	812.5	0.92
803884	8.52	ND	5.538	ND
803859	7060	0.59	4589	0.91
LCS	-			
	100 0			
,				
			-	



M

(m-115)
h commands

TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008

CHAIN OF CUSTODY RECORD

COC Number

TURNAROUND TIME	10	Days		
DATE 09/18/12	PAGE	1	OF	

	www.truesdail.com					[IM3Plant-WDR-379] 803 859			DAT	DATE 09/18/12		***************************************	PAGE	1	OF 1									
COMPANY	E2				ľ		$\overline{}$	7	7	7	7	Ť /	7 7	$\overline{}$	$\overline{}$	$\overline{}$	7	7	7	7	7	h-darife distriction destroys between a	reminenti distribi de de mene.	
PROJECT NAME	PG&E Topock										/ /	/ /	/	/	/	/	/			/	/	COMM	ENTS	
PHONE	(530) 229-3303		fax (530)	339-3303			/ ,	/ .	/ /	/ /				09/18		-	/	/ ,	/ /	' /	1			
ADDRESS	155 Grand Ave	Ste 1000	***************************************				' /	~ /	_/			/S35	; 8 , () 3	8,5	59				8/				
	Oakland, CA 94	612	-			/2		(120 t			/ /	' /							/AZ	/				
P.O. NUMBER	456827.01.D M		TEAM	_1_		Fillered	0.7	/ స్ట్రో	/_ /	/ /;	ş /		/ /	/ /	/ ,	/ /	/ /	/ /	CONTAINED	,				
SAMPLERS (SIGN	ATURE	0.475	~11.5-		Se (210)	de 1 (0.0) (ab	Specific	TDS (Silve))083mc	Turbidity (SM212)		//			//		//	NUMBEE	o /					
SAMPLE I.D.		DATE	TIME	DESCRIPTION		***********			1		-+	-{-	+-		/	-		100000000000000000000000000000000000000		***************************************	/ /	<i>A F</i>		7
SC-700B-WDI	R-379	09/18/12	8:48	Water	X	X	X	×		x	L							3			<u> </u>	66	7,00)
																		TO SECURE	тот	AL NU	MBER C	F CONT	AINERS	



See Form Attached

C	HAIN OF CUSTODY SI		SAMPLE CONDITIONS					
Signature (Relinquished) Josephera	Printed Josh Rosenberg	Company/ Agency CHQMHILL	Date/ 9-18-12 Time (5:30	RECEIVED COOL & WARM # 4.5° E				
(Received) Charles Day (C	Printed Rafae	Company/ T. Z. I	Date/9-/8-/2 Time /5.130	CUSTODY SEALED YES NO 17				
Signature (Relinquished) Cafail Day		Company/ T. L. I	Date/9-18-12 Time 21:30	SPECIAL REQUIREMENTS:				
Signature Stubblewina (Received) Stubblewina	Printed Name Luda	Company/ 72 7	Date/ Time 9/18/12 2/130					
Signature ORelinquished)	Printed Name	Company/ Agency	Date/ Time					
Signature (Received)	Printed Name	Company/ Agency	Date/ Time					

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
	09/14/12	803810-10	10	NIA	NIA	NIA	HAV
		-11	9.5				Î
		-12	16				
. 0. 1	4	1 -13	10	J		1	1
HAV	4	~@					
0 //	09/19/12	803859	7	2 ml	9.5	8:15 AM	HAV
•	09/19/12	803860-1	9.5	NIA	NIA	MIA	HAV
		-2					
		-3					
	- 0 1 0 1 10	-4					<u> </u>
	09/19/12	803861-1	9.5	NIA	12/12	MIA	HAY
	· ·	-2					
		-3					_
	00 119 110	803862-1	109.5	*		1,	4
		2	9.3	N/A	MIA	HIA 1	HAV
21001		-2	9.5				-
71917		-4	109.5		1		-
		-5	9.5				
	1.	-6	109.5		1		1
	09/20/12	803902-1	7.5	2. ml	9.5	5:15 PM	HAV
	4	1, -2	9.5	NIA	NIA	NIA	HAY
1				•			
-							
1							
-							
-							
L							

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

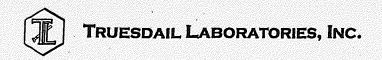
G 9/27/12 039





Turbidity/pH Check											
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments			
803728	>1	1 2	9-12-12	BE	30 NA						
803731	くヽ	72			No	12:30	9-13-12	PHくと			
803743(1-3)	1	1			,	J	9/14/12	pH62			
803744	71	12			3010A		٨				
843745		\			\ ·						
803746											
803747											
803748											
803752(1-2)											
803785	61	72	9/17/12	ES	No	a:wan	9/14/12	M 62			
803776	41	> 2	9/13/12	BE	1/0	10:20an		pH < 2			
403779 (10-12)	1	7	1,121,1-	1	7	12 :cep/		7			
\$637 95	71	<u>ر ۶</u>			3010A						
803796	1	ا.			7						
803 809(1-3)	≺ \		9-14-12	BE	30 61						
8038104-13)	1		\								
803800	71										
803801											
803802											
803803											
803804											
803805											
803806											
803807											
803803	41	72			NO.	12: PM	9-18	PH<2			
803820	1	< 2		Y	30 l0A						
803819	(1	72				13 - 40	9-19	PH < 2			
803822	41	12	9/17/12	ES	3010A						
803834	>1		1	BE	l						
203839	7		9-18-12	1							
803843	/\$1	42	9-19-19	BZ-	30 le A						
803844	1	1									
803845											
803959	< 1	72									
803869L1-37		42									
803861-4)											
803862 (1-6)		J			J						
803849		72			MO	11:30 AM	4/24	0H<2			
803856 W-3)		1.			J	8	j				
803867	71	1 2			3010 A						
503877610-10	< 1	>2	9-20-19	BI-	NO	7:30 AM	7-24	PHTZ			
803872	71	J	7	1.	30 1.A	7	1				
\$,03901	71	<1	9-21-12	BZ	3010A		,				
1	•					1					

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



Sample Integrity & Analysis Discrepancy Form

C	lient: <u>E2</u>	_ Lab # <u>\$03853</u>
Di	ate Delivered: 09 18 12 Time: ₫/:30 By: □Mail	☑Field Service □Client
1.	Was a Chain of Custody received and signed?	4diYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÞN/A
3 .	Are there any special requirements or notes on the COC?	□Yes □No □NA
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No □AVA
. 5.	Were all requested analyses understood and acceptable?	₫Yes □No □N/A
<i>6</i> .	Were samples received in a chilled condition? Temperature (if yes)? */ S ° C	Æ(Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc) Were sample custody seals intact?	ØYes □No □N/A
8 .	Were sample custody seals intact?	Yes □No ØN/A
9.	Does the number of samples received agree with COC?	Yes ONO ON/A
10.	Did sample labels correspond with the client ID's?	Zeres DNo DN/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ⊠N/A
12.	Were samples pH checked? pH = Sel C. O. C.	
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Deces □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	ÆÎYes □No □N/A
15 .	Sample Matrix: □Liquid □Drinking Water □Ground □Sludge □Soil □Wipe □Paint □Solid №	
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	2. Steakeerius

Truesdail Laboratories, Inc.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

October 4, 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-WDR-380 PROJECT, GROUNDWATER

MONITORING, TLI No.: 803980

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-380 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. 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 have been included under Section 5.

The samples were received and delivered with the chain of custody on September 25, 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.

Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

Due to analyst error, a straight matrix spike was not analyzed on sample SC-700B-WDR-380 for Hexavalent Chromium by EPA 218.6 in batch 09CrH12K. The sample was re-analyzed straight with an associated matrix spike in batch 10CrH12A. The result from the re-analysis was reported.

No other violations or nonconformance 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.

40 - Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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Laboratory No.: 803980

Date: October 4, 2012 Collected: September 25, 2012 Received: September 25, 2012

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample **Project Name:** PG&E Topock Project

Project No.: 456827.01.DM

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Bita Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

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Laboratory No.: 803980

Date Received: September 25, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 456827.01.DM P.O. No.: 456827.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803980-001	SC-700B-WDR-380	E120.1	NONE	9/25/2012	13:10	EC	7130	umhos/cm	2.00
803980-001	SC-700B-WDR-380	E200.8	NONE	9/25/2012	13:10	Chromium	ND	ug/L	1.0
803980-001	SC-700B-WDR-380	E200.8	NONE	9/25/2012	13:10	Manganese	1.4	ug/L	0.50
803980-001	SC-700B-WDR-380	E218.6	LABFLT	9/25/2012	13:10	Chromium, Hexavalent	ND	ug/L	0.20
803980-001	SC-700B-WDR-380	SM2130B	NONE	9/25/2012	13:10	Turbidity	ND	NTU	0.100
803980-001	SC-700B-WDR-380	SM2540C	NONE	9/25/2012	13:10	Total Dissolved Solids	3950	mg/L	250

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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Page 1 of 6

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Printed 10/4/2012

Laboratory No. 803980

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: 456827.01.DM P.O. Number: 456827.01.DM

Release Number:

Samples Received on 9/25/2012 11:30:00 PM

 Field ID
 Lab ID
 Collected
 Matrix

 SC-700B-WDR-380
 803980-001
 09/25/2012 13:10
 Water

Specific Conductivity -	EPA 120.1		Batch	09EC12G				
Parameter		Unit	Ana	llyzed	DF	MDL	RL	Result
803980-001 Specific Condu	ıctivity	umhos	umhos/cm 09/26/2012		1.00	0.116	2.00	7130
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	803980-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7140	Expected 7130	F	RPD 0.140	Accepta 0 - 10	ance Range
Lab Control Sample								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 702	Expected 706	F	Recovery 99.4	Accepta 90 - 110	ance Range)
MRCCS - Secondar	ý lagyte v							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Specific Conductivity	umhos	1.00	697	706		98.7	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Specific Conductivity	umhos	1.00	980.	998		98.2	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 proportion authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Printed 10/4/2012

Page 2 of 6

Chrome VI by EPA 218.	6		Batch	10CrH12A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
803980-001 Chromium, Hex	kavalent	ug/L	10/03/2012 15:56		0.00920	0.20	ND
Method Blank	f (V age						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	804101-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 6.32	Expected 6.28	RPD 0.581	Accepta 0 - 20	ance Range
Low Level Calibration	n Verification						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.197	Expected 0.200	Recovery 98.4	Accepta 70 - 130	ance Range)
Lab Control Sample							
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 4.90	Expected 5.00	Recovery 97.9	Accepta 90 - 110	ance Range)
Matrix Spike						Lab ID =	803980-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.10	Expected/Added	Recovery 95.3	90 - 110	
Matrix Spike					· · · · · · · · · · · · · · · · · · ·		804101-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 16.0	Expected/Added 16.3(10.0)	Recovery 97.1	Accepta 90 - 110	ance Range)
MRCCS - Secondary	$t_{i,j}^{*}(x_i)$						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 4.93	Expected 5.00	Recovery 98.5	Accepta 90 - 110	ance Range)
MRCVS - Primary							_
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.00	Expected 10.0	Recovery 100.0	95 - 10	ance Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

Printed 10/4/2012

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Parameter		Unit	Anal	yzed [)F	MDL	RL	Result
803980-001 Chromium		ug/L	09/26	/2012 21:55 5	.00	0.195	1.0	ND
Manganese		ug/L	09/26	/2012 21:55 5	.00	0.270	0.50	1.4
Method Blank		Olik (jystas).						1.4.1.1
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	803980-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	Ū
Manganese	ug/L	5.00	1.47	1.38		6.45	0 - 20	
Low Level Calibration	Nerification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	0.194	0.200		96.8	70 - 130)
Manganese	ug/L	1.00	0.0998	0.100		99.8	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ınce Range
Chromium	ug/L	5.00	101	100.		101	85 - 115	5
Manganese	ug/L	5.00	98.7	100.		98.7	85 - 115	5
Matrix Spike							Lab ID =	803980-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	101.	100.(100.)		101.	75 - 125	5
Manganese	ug/L	5.00	104	101.(100.)		103.	75 - 125	5
Matrix Spike Duplicat	te						Lab ID =	803980-001
Parameter	Unit	DF	Result	Expected/Adde	d R	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	98.2	100.(100.)		98.2	75 - 125	5
Manganese	ug/L	5.00	98.7	101.(100.)		97.3	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Chromium	ug/L	1.00	19.6	20.0		97.8	90 - 110)
Manganese	ug/L	1.00	20.0	20.0		99.8	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	18.9	20.0		94.6	90 - 110)



Client: E2 Consulting Engineers, Inc.	Project Name: PG&E Topock Pr	oject Page 5 of 6
	Project Number: 456827.01.DM	Printed 10/4/2012

Interference Check S	tandard AB								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range			
Chromium	ug/L	1.00	20.2	20.0	101.	80 - 120			
Interference Check Standard AB									
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range			
Manganese	ug/L	1.00	20.4	20.0	102.	80 - 120			
Interference Check S	tandard AB								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range			
Manganese	ug/L	1.00	19.8	20.0	98.8	80 - 120			

Total Dissolved Solids	by SM 254	0 C	Bato	h 09TDS12E				
Parameter	Parameter		An	Analyzed		MDL	RL	Result
803980-001 Total Dissolved Solids		mg/L	09/26/2012		1.00	0.757	250.	3950
Method Blank	en an include a lasti							
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	803980-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	3960	3950		0.253	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	503	500.		101.	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Turbidity by SM 2130 B			Bato	:h 09TUC12M				
Parameter		Unit	An	alyzed	DF	MDL	RL	Result
803980-001 Turbidity		NTU	09/26/2012		1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	803980-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.09	8.00		101.	90 - 110	1
Lab Control Sample Du	plicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.02	8.00		100.	90 - 110	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

fo - Mona Nassimi

Manager, Analytical Services





Total Dissolved Solids by SM 2540 C

Calculations

Batch: 09TDS12E Date Analyzed: 10/1/12

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,	Reported Value, ppm	DF
Blank	100	68.8421	68.8422	68.8422	0.0000	No	0.0001	1.0	25.0	ND	1
803980	10	50.8659	50.9058	50.9054	0.0004	No	0.0395	3950.0	250.0	3950.0	1
804020	50	51.4504	51,4860	51.4860	0.0000	No	0.0356	712.0	50.0	712.0	1
804026	50	72.3872	72.4838	72.4837	0.0001	No	0.0965	1930.0	50.0	1930.0	1
804027-1	20	50.1583	50.2012	50.2009	0.0003	No	0.0426	2130.0	125.0	2130.0	1
804027-2	20	49.2489	49.2963	49.2963	0.0000	No	0.0474	2370.0	125.0	2370.0	1
803980D	10	75.2935	75.3335	75.3331	0.0004	No	0.0396	3960.0	250.0	3960.0	1
LCS	100	68.0098	68.0604	68.0601	0.0003	No	0.0503	503.0	25.0	503.0	1
										** '	
								-			
										-	
											mau.

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	503	500	100.6%	90-110%	Yes
LCSD					

Duplicate D	Duplicate Determinations Difference Summary									
Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?					
803980	0.0395	0.0396	0.1%	≤5%	Yes					

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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).

Hope T.

Reviewer Printed Name

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 09TDS12E

Date Analyzed: 10/1/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3	
803980	7130	0.55	4634.5	0.85	
804020	1281	0.56	832.65	0.86	
804026	3170	0.61	2060.5	0.94	
804027-1	3660	0.58	2379	0.90	
804027-2	4090	0.58	2658.5	0.89	
803980D	7130	0.56	4634.5	0.85	
LCS					
		errantembriana.			
		2			
			-		



M

TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-380]

COC Number

TURNAROUND TIME	5	Days		
DATE 09/25/12	PAGE	1	OF	_1

	in deseap, com									00		J	01				0,20,	
COMPANY	E2						7	/	/ /	7	7	7	7	7	7 /	7	$\overline{}$	/ / /
PROJECT NAME	PG&E Topock	******						/ /				/ ,	/ /	/ /				COMMENTS
PHONE	(530) 229-3303	}	FAX (530) 339-3303			/	/ /		/ /	/ /	' /				/ ,	/ ,	/ / /
ADDRESS	155 Grand Ave Oakland, CA 94		minutelli di A				/ \$		/ /					/ /	/ /			CONTAINERS
P.O. NUMBER	456827.01.D M		TEAN	1 1		ab Fillered	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	/ j _y g /		(08.12)	/ /	$^{\prime}$ $^{\prime}$	$^{\prime}$ $/$		/ /	/ /	/ /	OF CONT
SAMPLERS (SIGNA	ATURE	n King	ur_		Cro (218 C.	Total Metals		TDS (SM2540C)		(5142130)		/ .	/ /	/ /	′ /		NUMBE	di di di di di di di di di di di di di d
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/ઙ૿	10/2	<u> </u>	/ğ/	$I_{\mu\nu}^{T}$		/_/	'				\bot	[\frac{1}{2}]	
SC-700B-WDF	R-380	09/25/12	1310	Water	х	х	х	х	х								3	PH=6(200.7)
																	3	TOTAL NUMBER OF CONTAINERS

RUSH



For Sample Conditions
See Form Attached

CHAIN OF CUS	STODY SIGNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished) Clus With Printed Ck	Wis Knight Company CHZM HILL	Date/ 9-25-(2 Time 16:30	RECEIVED COOL WARM 3.80 2
Signature Printed K	a for Company/ T. L. I	Date/9 - 25 - 12 Time /6:30 Date/9 - 25 - 12	CUSTODY SEALED YES NO
(Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relinquished) (Relin	a la el Agonou T I T	Time 23:30	SPECIAL REQUIREMENTS:
	ida Company/ Agency TLI	Date/ 9/25/12 23:34	
Signature Printed (Relinquished) Name	Company/	Date/	••••••••••••••••••••••••••••••••••••••
	Agency	√ime	
Signature Printed	Company/	Date/	
(Received) Name	Agency	Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

09 21 12 803903-1 9-5 N1A N1A N1A N1A N1A N1A N1A N1A N1A N1A	Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initiala
1			<u> </u>				
99/21/12 \$03904-1 9.5 NIA NIA NIA NIA NIA NIA NIA NIA NIA NIA	1.			1	1	1	7
-2	00/2/12				~ <u>y</u>	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	
-3	1	1. 3	9.5	N/A		HIP	
09/21/12 \$03905-1 9-5 N/A N/A N/A N/A 1 -2						-	
09/21/12 803905.1 9.5 N/A N/A N/A -2 -3 -4 -5 -6 -6 -7 09/26/12 803980 7 2 ml 9.5 8:30 Am HAV 09/26/12 803981 9.5 N/A N/A N/A HAV -2 -3 -4 -4 -5 09/26/12 803983-1 9.5 N/A N/A N/A HAV		-3				· · · · · · · · · · · · · · · · · · ·	
-2 -3 -4 -4 -5 -5 -6 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	-010-112	2) 4	25	,		7	
-4 -4 -5 -6 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	1		9-5	NIA	NIA	1~1/A	
-4 -5 -6 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7							·
09 26 12 803980 7 2 ml 9.5 8:30 AM HAV 09 26 12 803982-1 9.5 NIA NIA HAV 09 26 12 803982-1 9.5 NIA NIA HAV 09 26 12 803983-1 9.5 NIA NIA HAV 09 26 12 803983-1 9.5 NIA NIA HAV		1			·		
07 26 12 \$03980							
09/26/12 803980 7 2 ml 9.5 8:30 AM HAV 09/26/12 803981 9.5 NIA NIA NIA HAV 09/26/12 803982-1 9.5 NIA NIA NIA HAV -2 -3 -4 -4 -5 NIA NIA NIA HAV 09/26/12 803983-1 9.5 NIA NIA NIA HAV							
09 26 12 803980	· ·	l i					
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09126112 803982-1 9-5 NIA NIA INIA HAV -2 -3 -4 -5 09126112 803983-1 9-5 NIA NIA NIA HAV -2 -3 -4 -4 -5 -5 -5 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7			9-5	NIA	NIA	1	1
-2	09126112	803982-1	9-5	NIA	NIA		
-4 -4 -5 -5 -5 -6 -, -6 -, -6 -, -7 -2 -1 -2 -1 -2 -2 -1 -3 -2 -2 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3		1	Ì		1)	1
09/26/12 803983-1 9.5 NIA NIA NIA HAV		-3					
09/26/12 803983-1 9.5 NIA NIA NIA HAV		-4					
09/26/12 803983-1 9.5 NIA NIA NIA HAV		I					
09/26/12 803983 - 1 9 5 NIA NIA NIA HAV		1		-1.			
	09/26/12	803983-1	9.5	NIO	2110		-
		1 1	7	1 1	10/8+	N/A	HAV
	~		~				4
	<u> </u>						
		+				·	
		·					
				·			

HAV 09127/12

6-9/28/12



Turbidity/pH Chack

	Turbidity/pH Check									
Sample Number	Turbidity	pH 6F	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments		
80,3894	>1	7 1 2	9-21-12	BE	30101			-3-42		
80389561-3	1	î	1					-30H<2		
803892(1-3)		12			1					
803943(1-2)	ζι									
80 39 04 L1-4)										
803905 LI-7)										
803914	71									
803915 (-2+5)	> X1 BL	72				V \$230	Am			
803908(1-2)	41	J	J		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	101301	an			
803943	71	₹2	9-24-12	BE	BOLOA					
803929	1			\						
803903/1-2/	<1	<2	9-24-12	M.M	3010A					
803904 (1-4)			1		1 ,					
803305 [1-7]	V			1	1/					
803025	71	22	9.124/2	H.M	30108					
803943	V	V		T.	1					
203963	71	12	9-25-12	BF	30 hA			,		
803914			1							
803985										
8 - 39 66.										
8 = 3967		J	1	1						
803980	<1	72	9-26-12	H.M	301017					
803 981		<2								
803982461										
803983(1-3)	V	J	<i></i>		<u> </u>					
803964	71	<2	9.26-12	H.M	3010 4					
803965	V	J	U	J.	V					
8039711-3)	<١	>2	9-26-12	BE	No	15.3a	3-27	P4 <2		
8° 39 77		l	(((Į.			
804011	>/	72	9-26-12	M.M	30104	16:00	9-27	PHCZ		
20401 QU-12)		72		BE	No	11:15				
804010(1-3)						_				
804009(1-9)							1	<u> </u>		
80401321-40)	J.	<u>,</u>	b	_ \rlaph_	4	<u> </u>	7-28	PACL		
804015 (1-5)		<2	9-27-12	µ.M	3010A					
804030(1-3)	41	<i>42</i>	9-28-12	M.M	30104					
204020	41	<u> ۲٦</u>	10/11/12	ES	7010A	~				
804024										
804052	→	<u>4</u>	4	<u> </u>						
204062 204100 n.x	21	<2	10/2/12	MM	30/01					
201/100 MY	21	73	10/03/12	MM	30/01					
804101 11-21		212	_ 1 _			-				
804102 11-31		22								
804103 H-31	J	V	1/2	JV	U I					

- Notes:

 1. Samples should be analyzed after 24 hrs of pH adjustment to pH2 for Dissolved Analytes.

 2. All Total Recoverable Analytes must be pH adjusted and digested.

 3. Do not use disposable pipette to measure pH; pour a little amount of sample from the bottle.



Sample Integrity & Analysis Discrepancy Form

	ate Delivered <u>9</u> / <u>25</u> /12 Time: <u>\$3:30</u> By: □Mail \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
1.	Was a Chain of Custody received and signed?	ØYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÆN/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 PAN/A
5.	Were all requested analyses understood and acceptable?	BYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)?ૐ <u>& ° C</u>	edYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)	ØYes □No □N/A
8.	Were sample custody seals intact? evel 111 00	□Yes □No ÆN/A
).	Does the number of samples received agree with COC?	AYes □No □N/A
0.	Did sample labels correspond with the client ID's?	Ayes ONO ON/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ŒN/A
2.	Were samples pH checked? pH = <u>Sel</u> C. O. C.	
3 .	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	✓Yes □No □N/A
1.	Have Project due dates been checked and accepted? Turn Around Time (TAT): RUSH Std	Pres DNo DNA
i	Sample Matrix: DLiquid Drinking Water Ground Water Solid Dio	11/. /
	Comments:	

Analytical Bench Log Book

WDR pH Results

Çemçle Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Callbrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
56-700B	9-4-12	13:19	13,24	9.4.12	METER #1	9-4-12	01:70	-55.4	C Kright	7()
rtes·						- "				
Sc-100B	9.4.12	14:55	9-4-12	15.07	HETTUR #1	9-4-12	01:10	-55.¥	C. Kuget	7.3
otes:								<u> </u>		
5c-700B-	9-11-12	14:00	9.11.12	14:11	METER #1	9-11-12	01:00	-54.7	C. Knuget	7.2
aties:								· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
SC-7006-	4.18.12	08;4g	9-18-12	8:56	METER#1	9-18-12	01:00	-54.5	C. Knight	7.4
otes:								•		
5C-700B	9-25-12	13:10	9-25-12	13:17	MERER#1	9-25-12-	01:06	-546	C.Kmgut	7.2
otes:										
 										<u></u>
ites:			•	•		i	······································	 		
1	1 1			· · · · · · · · · · · · · · · · · · ·		<u></u>	<u> </u>			
7	<u> </u>	i	-	1			1			
otes:										
		Remi	nder: WDR	Required	pH Range for the	Effluent (SC.	700D) Ic. 6 5	0.4	· · · · · · · · · · · · · · · · · · ·	