



**Pacific Gas and
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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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**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.

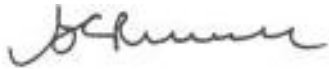
Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 507,969,897 gallons of water and removed approximately 5,507 pounds of total chromium through September 30, 2012.

Pamela S. Innis
Robert Perdue
October 15, 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

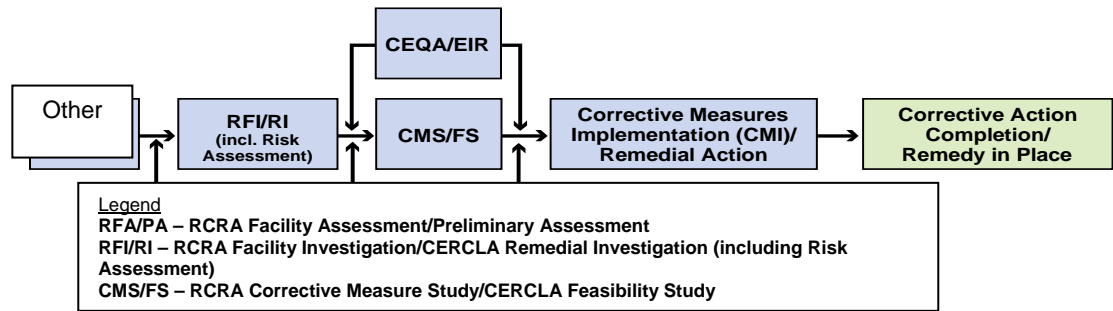
cc: Jose Cortez, Colorado River Basin Regional Water Board
Thomas Vandenberg, Colorado River Basin Regional Water Board
Aaron Yue, California Department of Toxic Substances Control

Topock Project Executive Abstract

<p>Document Title:</p> <p>Topock IM-3 Third Quarter 2012 Monitoring Report</p> <p>Submitting Agency/Authoried by: U.S. Department of the Interior and Regional Water Quality Control Board</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: October 15, 2012</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other)</p> <p>PG&E</p> <p>Document ID Number:</p> <p>PGE20121015A</p>
<p>Priority Status: <input type="checkbox"/> HIGH <input type="checkbox"/> MED <input checked="" type="checkbox"/> LOW</p> <p>Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Action Required:</p> <p><input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review & Comment</p> <p>Return to: _____</p> <p>By Date: _____</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input checked="" type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>Submittal of this report is a compliance requirement of the ARARs for waste discharge as documented in Attachment A to the Letter Agreement issued July 26, 2011.</p>	<p>Is this a Regulatory Requirement?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, why is the document needed?</p>
<p>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>	
<p>Brief Summary of attached document:</p> <p>This report covers the Interim Measures No. 3 (IM-3) groundwater treatment system monitoring activities during the Third Quarter 2012 period. 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.</p> <p>Written by: PG&E</p>	
<p>Recommendations:</p> <p>This report is for your information only.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements?</p> <p>The Topock IM-3 Third Quarter 2012 Monitoring Report is related to the Interim Measure. 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 Colorado River Basin Regional Water Quality Control Board (Regional Water Board) to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	

Related Reports and Documents:

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



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

CH2MHILL
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

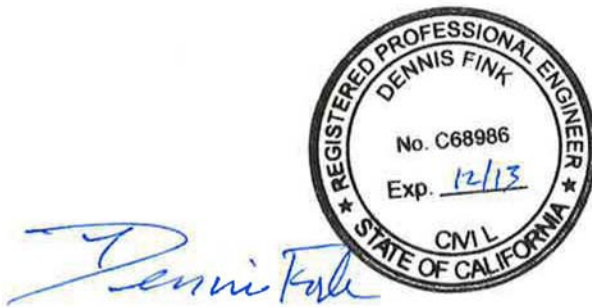
United States Department of the Interior
and
Colorado River Basin Regional Water Quality Control Board

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
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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	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/re-development 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/re-development 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

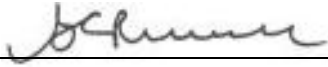
There were no exceedances of effluent limitations during the reporting period.

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: 

Name: Curt Russell

Company: Pacific Gas and Electric Company

Title: Topock Site Manager

Date: October 15, 2012

Tables

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		Monthly																							
<div>Sample ID</div> <div>Date</div>	<div>Analytes Units ^b MDL</div>	TDS	Turbidity	Specific Conductance	Field ^c 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	
		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	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
		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	ND (5.00)	2.48	ND (1.00)	4.30	23.3	ND (2.00)	2.99	ND (0.0050)	522	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	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	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

^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	NA	6.5-8.4	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Max Daily	NA	NA	NA	6.5-8.4	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Frequency		Weekly							Monthly																
<div>Analyses Units^c MDL^d</div>	Date	TDS	Turbidity	Specific Conductance	Field pH ^e	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	
		mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/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
		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	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)	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	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	8/7/2012	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)	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-374a	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-374b	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)	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	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	---	---	---	---	---	---	---	

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.

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 Frequency		Quarterly																						
Sample ID	Date	Analytes	TDS	Specific Conductance	Field ^c	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units ^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
		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 (0.0010)	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

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

Location	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 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	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	B	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	PB	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	B	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	Maksim 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

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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-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\ Bit a Emami
					TLI	EPA 200.8	MN	8/7/2012	Katia Kiarashpoor\ Bit a 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	B	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/Bit a Emami
					TLI	EPA 200.8	BA	8/20/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	CR	8/20/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	CU	8/20/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	MN	8/22/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	MO	8/23/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	NI	8/20/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	PB	8/23/2012	Katia Kiarashpoor/Bit a Emami
					TLI	EPA 200.8	SB	8/27/2012	Katia Kiarashpoor/Bit a Emami

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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

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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	B	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	PB	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
SC-700B	SC-700B-WDR-378	C.Knight	9/11/2012	2:00:00 PM	TLI	SM4500NH3D	NH3N	9/10/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	9/5/2012	Jenny Tankunakorn
					TLI	EPA 120.1	SC	9/14/2012	Gautam Savani
					TLI	EPA 200.8	CR	9/26/2012	Bitam Emami
					TLI	EPA 200.8	MN	9/26/2012	Bitam Emami
					TLI	EPA 218.6	CR6	9/12/2012	Himani Vaishnav
					FIELD	HACH	PH	9/11/2012	C.Knight
SC-700B	SC-700B-WDR-379	Josh Rosenberg	9/18/2012	3:30:00 PM	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	Bitam Emami
					TLI	EPA 200.8	MN	9/26/2012	Bitam 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	Bitu Emami
					TLI	EPA 200.8	MN	9/26/2012	Bitu 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/Bitu Emami
					TLI	EPA 200.8	AS	9/6/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	BA	8/30/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	BE	9/27/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	CD	9/27/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	CO	9/27/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	CR	8/30/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	CU	9/6/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	HG	8/24/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	MN	8/30/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	MO	9/21/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	NI	9/20/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	PB	8/30/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	SB	9/20/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	SE	9/27/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	TL	9/27/2012	Katia Kiarashpoor/Bitu Emami
					TLI	EPA 200.8	V	9/27/2012	Katia Kiarashpoor/Bitu 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
Phase 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

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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).

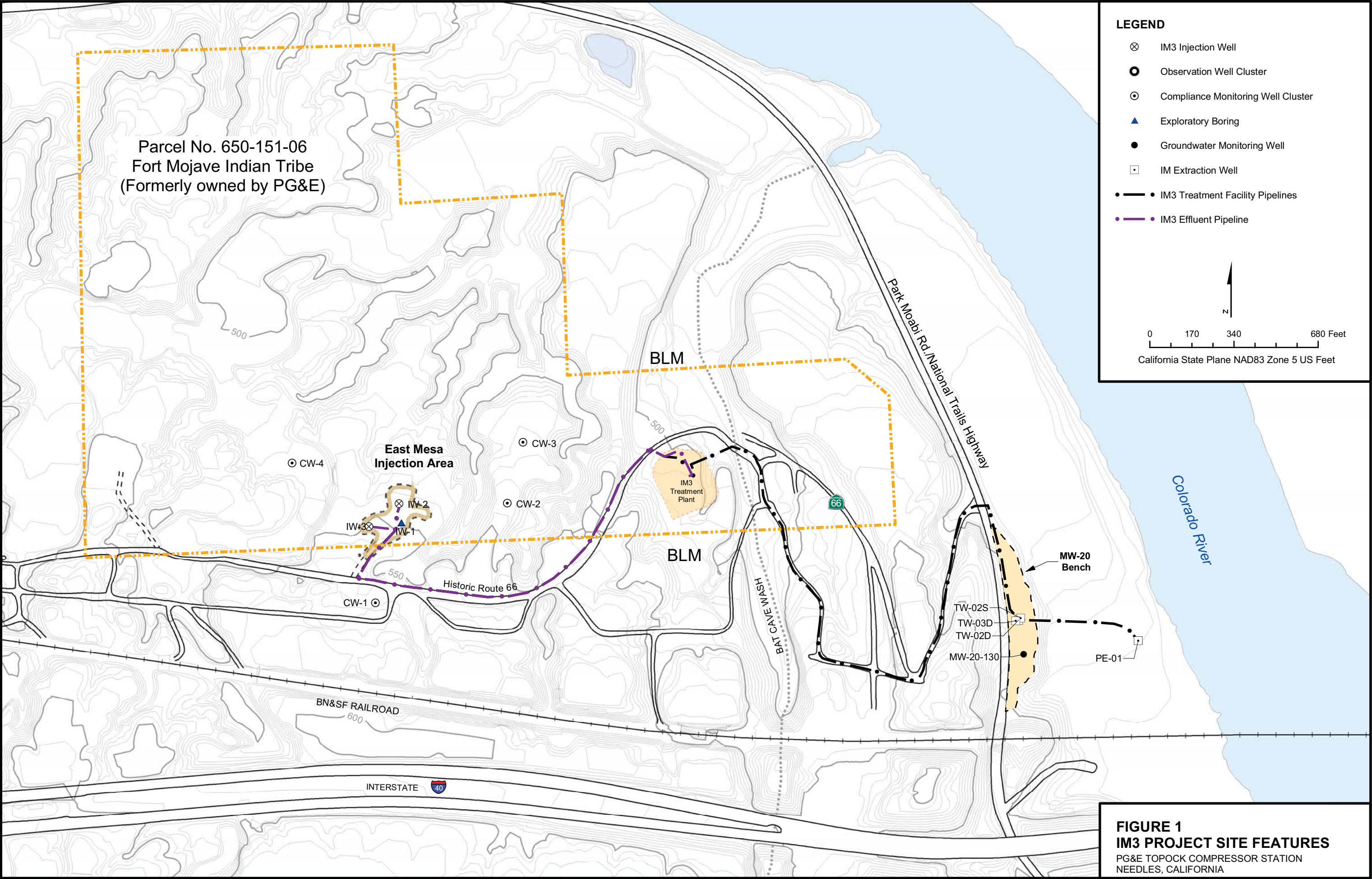
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

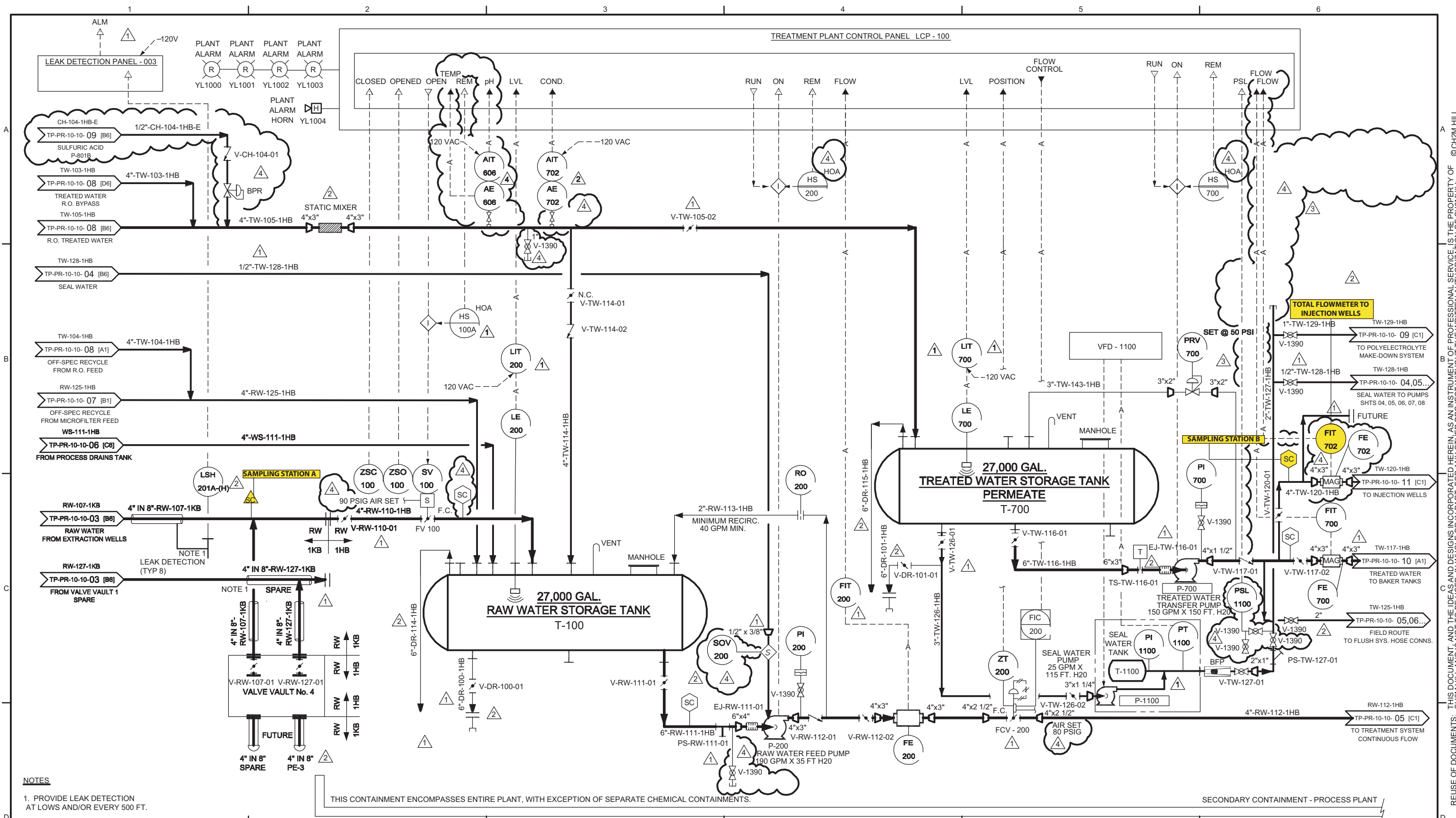
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

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 CaCO ₃	MO = molybdenum
ALKC = alkalinity, carb as CaCO ₃	MOIST = moisture
AL = aluminum	NH ₃ N = ammonia (as N)
Ag = silver	NI = nickel
AS = arsenic	NO ₂ N = nitrite (as N)
B = boron	NO ₃ N = nitrate (as N)
BA = barium	PB = lead
BE = beryllium	PH = pH
CD = cadmium	SB = antimony
CO = cobalt	SC = specific conductance
CR = chromium	SE = selenium
CR6 = hexavalent chromium	SO ₄ = 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	

Figures



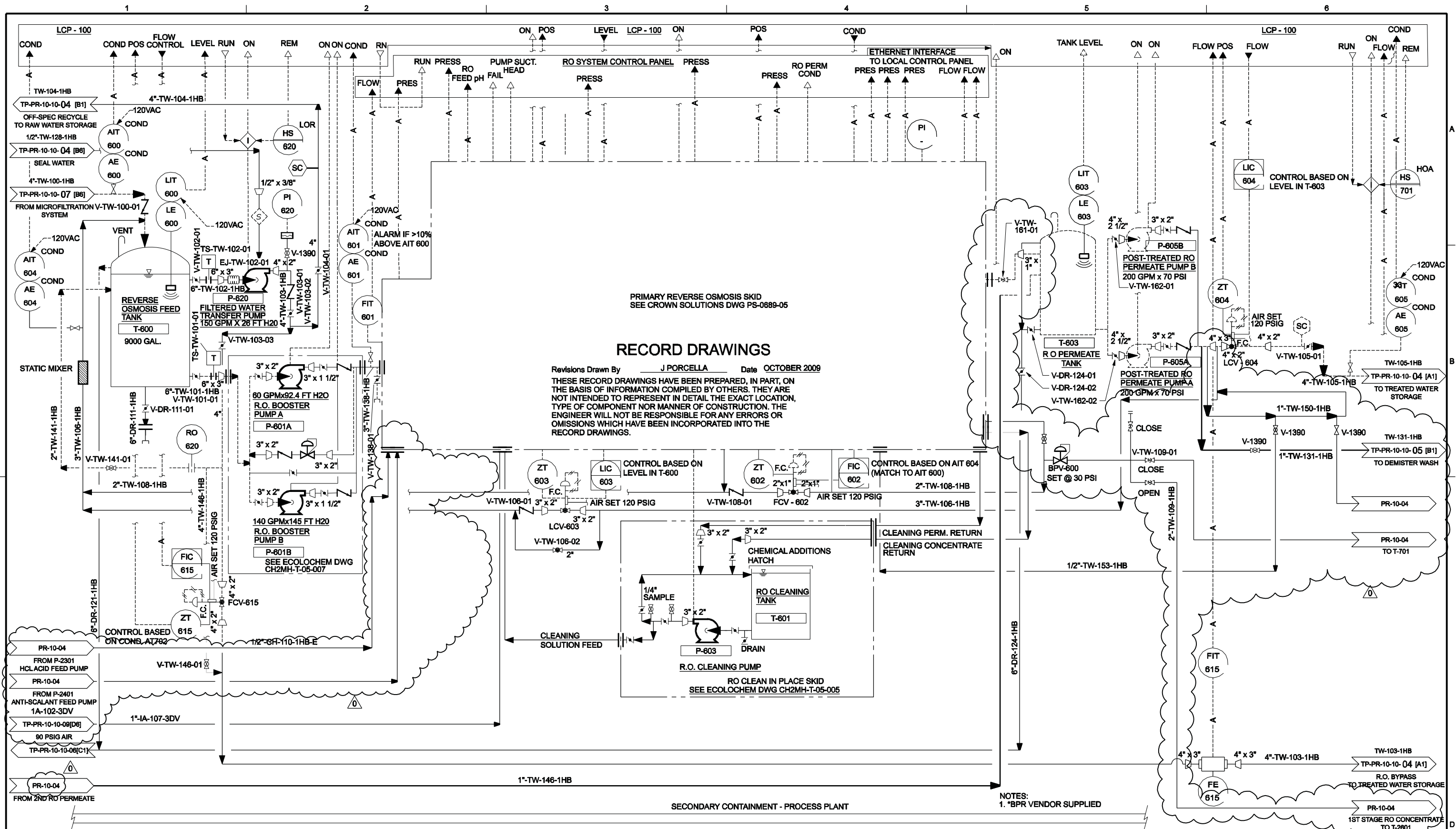


NOTES
1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.

THIS CONTAINMENT ENCOMPASSES ENTIRE PLANT, WITH EXCEPTION OF SEPARATE CHEMICAL CONTAINMENTS.

SECONDARY CONTAINMENT - PROCESS PLANT

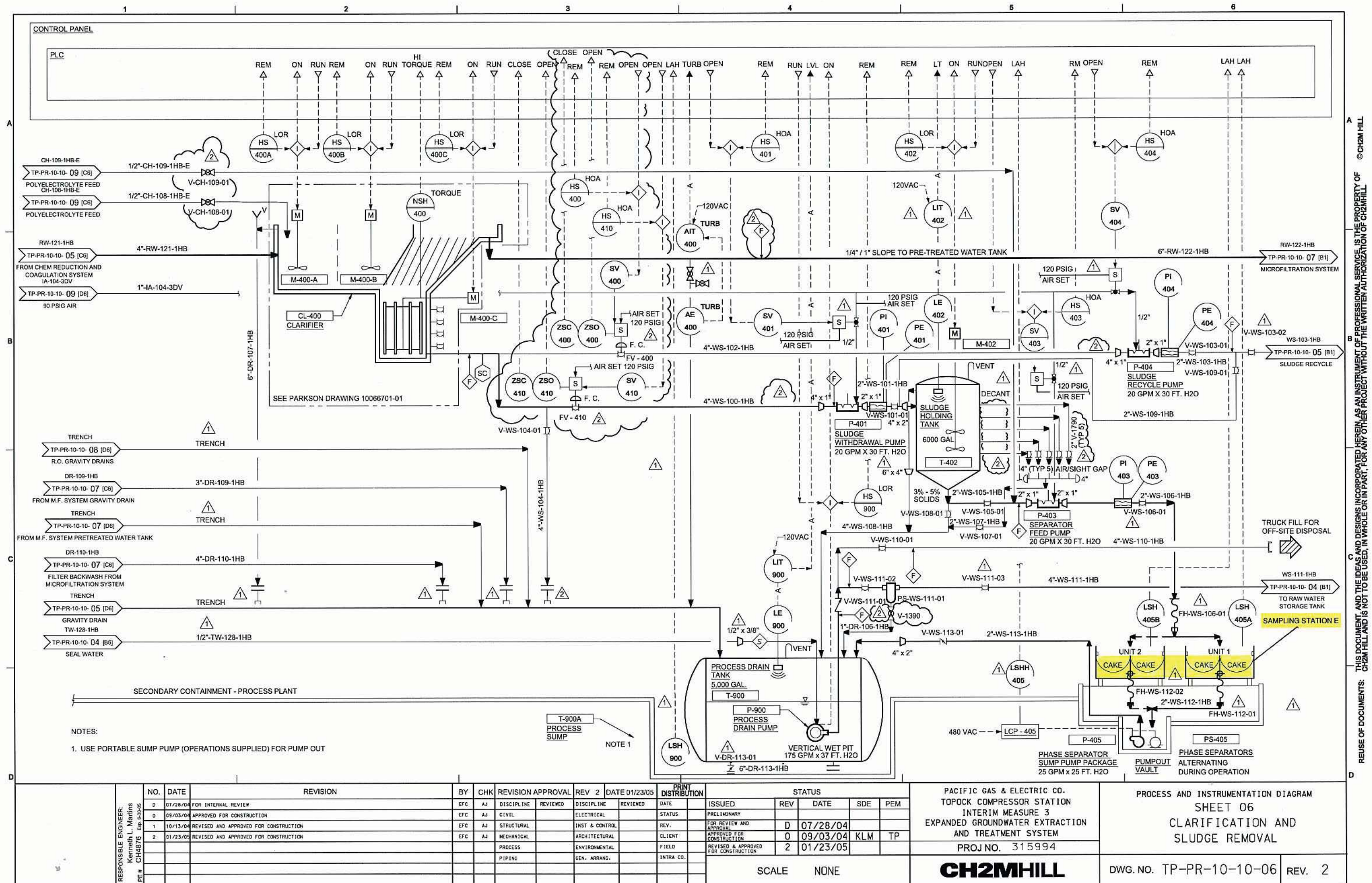
NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM SHEET 04 STORAGE AREA	
									ISSUED	REV	DATE	SDE	PEM			
									PRELIMINARY							
									FOR REVIEW AND APPROVAL	D	07/28/04					
									APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP			
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL			REV.								
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL			CL INT								
3	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS			FIELD								
4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING			INTRA CO.								
									SCALE NONE				CH2MHILL			
													DWG. NO. TP-PR-10-10-04			
													REV. 4			



** ORIGINALLY STAMPED AND SIGNED BY: JOHN PORCELLA CALIFORNIA PE NO. C70145 ON 04-01-2009 **	RESPONSIBLE ENGINEER: John Porcella C70145 Exp. 8-30-10 PE#	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL		REV 0	DATE 10/02/09	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 PLANT PERFORMANCE IMPROVEMENTS	PROCESS AND INSTRUMENTATION DIAGRAM REVERSE OSMOSIS SYSTEM SHEET ONE OF TWO			
		A	2/12/09	INTERNAL REVIEW			DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE		ISSUED	REV	DATE	SDE					PEM
		B	2/12/09	CLIENT REVIEW			CIVIL	SJ	ELECTRICAL	FH	STATUS		PRELIMINARY	A	2/12/09	JP					JP
		C	4/01/09	FOR REVIEW AND APPROVAL	JR	JP	STRUCTURAL		INST & CONTROL	JG	REV.		FOR REVIEW AND APPROVAL	C	4/01/09	JP					JP
		D	11/17/09	FINAL RECORD ISSUE	JR	JP	MECHANICAL	SJ	ARCHITECTURAL		CLIENT		APPROVED FOR CONSTRUCTION								
									PROCESS	DF	ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP	PROJ NO. 362032		
									PIPING	SJ	GEN. ARRANG.	SJ	INTRA CO.								

SCALE		NONE	
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CH2MHILL		DWG. NO.	PR-10-03	REV.	0
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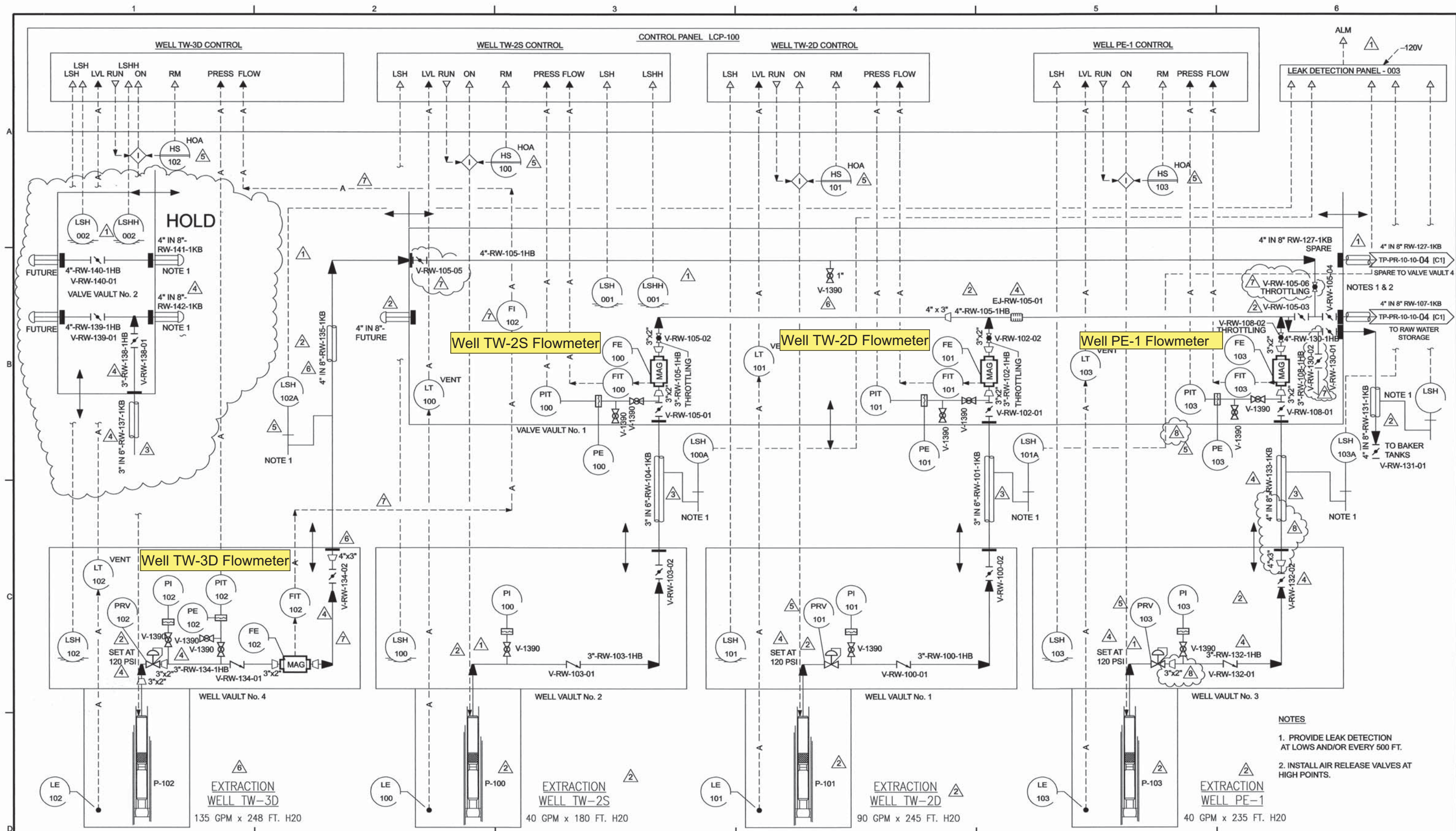
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BAR IS ONE INCH
ON ORIGINAL DRAWING

FILENAME: tppr101006.dwg

PLOT DATE: 23-JAN-2005

PLOT TIME:



RESPONSIBLE ENGINEER:
Kenneth L. Martins
PE # CH4876 Exp. 6-30-05

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 8	DATE 12/06/05	PRINT DISTRIBUTION	STATUS
8	12/07/05	REMOVED PE-1 HOLDS	JBW	SDH	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	—	ELECTRICAL	—	STATUS
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	—	INST. & CONTROL	—	REV.
3	03/16/05	DELETED NOTES, APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	—	ARCHITECTURAL	—	CLIENT
4	07/20/05	RELIEF VALVE SETTINGS, WELL PE-1 LINE TAGS, HOLDS REMOVED, APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS	—	ENVIRONMENTAL	—	FIELD
5	09/27/05	FINAL RECORD ISSUE	EFC	AJ	PIPING	—	GEN. ARRANG.	—	INTRA CO.
6	10/06/05	REVISED FINAL RECORD - ADDED TW-3D	EFC	AJ	—	—	—	—	—
7	10/19/05	REVISED AS NOTED	EFC	AJ	—	—	—	—	—

SCALE NONE

PACIFIC GAS & ELECTRIC CO.
TOPOCK COMPRESSOR STATION
INTERIM MEASURE 3
EXPANDED GROUNDWATER EXTRACTION
AND TREATMENT SYSTEM
PROJ. NO. 315994

CH2MHILL

PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 03
EXTRACTION WELLS
PE-1, TW-2D, TW-2S AND TW-3D

DWG. NO. TP-PR-10-10-03 REV. 8

FILENAME: tpr101003.dwg

PLOT DATE: 19-OCT-2005

PLOT TIME:

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D

A

B

C

D

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REUSE OF DOCUMENTS:

TP-PR-10-10-03

REV. 8

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REV. 8

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REV. 8

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TP-PR-10-10-03

REV. 8

Appendix A
Third Quarter 2012 Laboratory Analytical Reports

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

August 6, 2012

Revision 1

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.


<i>Client ID</i>	<i>Truesdail ID</i>	<i>Aquatic Testing Labs</i>
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



**Aquatic
Testing
Laboratories**

A dedicated to providing quality aquatic toxicity testing@

Date: July 10, 2012

Client: Truesdail Laboratories, Inc.
14201 Franklin Avenue
Tustin, CA 92780
Attn: Sean Condon

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:

<u>Sample ID.</u>	<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



Lab No.: A12070501-w1

Client/ID: Trucksda.1 802393

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

	INITIAL			24 Hr				48 Hr				72 Hr				96 Hr			
Date/Time:	7-6-12 1130			7-7-12 1130				7-8-12 1130				7-9-12 1000				7-10-12 1100			
Analyst:	Z			Z				Z				L.V.				L.V.			
	°C	DO	pH	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D
Control A	20.0	8.7	8.1	20.8	6.3	8.1	0	20.6	5.7	7.7	0	20.4	8.6	7.6	0	20.6	8.8	7.8	0
Control B	20.0	8.7	8.2	20.8	7.0	8.1	0	20.6	6.7	7.7	0	20.4	8.3	7.6	0	20.7	8.3	7.8	0
400 mg/l A	20.0	9.0	8.2	20.8	7.5	8.0	1	20.7	6.6	7.6	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	20.8	7.5	8.0	0	20.7	6.3	7.6	0	20.4	8.6	7.7	0	20.8	8.6	7.7	0
750 mg/l A	20.0	8.9	8.2	20.7	7.5	8.1	0	20.7	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	20.6	8.0	8.1	0	20.6	6.7	7.8	0	20.4	8.3	7.9	0	20.6	8.4	7.8	0
Comments: Extraction method: Mechanical shaking <u>X</u> . None (aqueous solution) <u>—</u> . Dissolved Oxygen (DO) readings in mg/l O ₂ . Test Aerated: Yes / No																			

	CONTROL		HIGH CONCENTRATION		Total Number Dead	
	Alkalinity	Hardness	Alkalinity	Hardness		
Initial	32 mg/l CaCO ₃	46 mg/l CaCO ₃	31 mg/l CaCO ₃	47 mg/l CaCO ₃	Control	0 /20
Final	32 mg/l CaCO ₃	46 mg/l CaCO ₃	36 mg/l CaCO ₃	72 mg/l CaCO ₃	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)
NA	FAILED	LC50 < 400 mg/l (>60% dead in 400 mg/l conc.)



ALERT II
Level III QC

Please sign, date & return this form with the results, to:
TRUESDAIL LABORATORIES, INC.
Attn: **Sean Condon**
14201 Franklin Avenue, Tustin, California 92780
Please include Truesdail Sample ID on your invoice

Type of Service: ☒ Normal (TAT) ☐ RUSH (5 day TAT) ☐ URGENT (24-48 hr. TAT) Results needed by: _____

Received on Ice? Yes No

Sample Conditions: Sealed? Yes/No

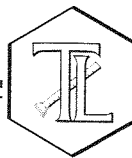
Special Shipment/Handling or Storage Requirements:

Time

TLI Phone:(714) 730-6239 • Fax (714) 730-6462

TRUESDAIL LABORATORIES, INC.

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14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
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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.

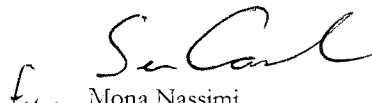
All final results and associated dilution factors are reported on a dry weight basis.


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.

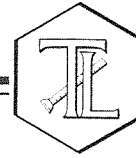

Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

002

TRUESDAIL LABORATORIES, INC.

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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

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

Laboratory No.: 802393

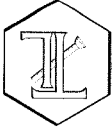
Date: August 5, 2012

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



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

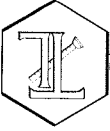
Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	SW 7199	Hexavalent Chromium	EPA 300.0	Fluoride	EPA 300.0	Nitrate as N	EPA 300.0	SM 2540 B	% Moisture
802393	SC-Sludge-WDR-368	13:15	24.2	mg/kg	23.1	mg/kg	15.5	mg/kg	51.4	%	

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.



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

METALS ANALYSIS: Total Metal Analyses as Requested

Lab I.D.	Sample ID	Date of Analysis:	Time Coll.	802393	SC-Sludge-WDR-368	13:15	50.7	ND	55.0	ND	7.93	3410	3.34	ND	6.12
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead			
				SW 6010B	SW 6010B	SW 6010B	SW 6020A	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B
				07/09/12	07/09/12	07/09/12	07/13/12	07/09/12	07/09/12	07/27/12	07/09/12	07/09/12	07/09/12	07/09/12	07/09/12
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				ND	ND	55.0	ND	7.93	3410	3.34	ND				
				Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc			
				SW 6010B	SW 6020A	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B
				07/09/12	07/13/12	07/09/12	07/09/12	07/09/12	07/12/12	07/09/12	07/09/12	07/09/12	07/09/12	07/09/12	07/09/12
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
802393	SC-Sludge-WDR-368	13:15	346	0.123	5.52	9.21	ND	ND	ND	39.4	56.5				

NOTES:
ND: Not detected, or below limit of detection

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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

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

Analytical Results Hexavalent Chromium

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

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.

for 
Mona Nassimi, Manager
Analytical Services

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

013

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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 5, 2012

Analytical Batch: 07SOLID12A

Investigation:

Total Solids by SM 2540 B

Analytical Results % Moisture

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>Results</u>
802393	SC-Sludge-WDR-368	13:15	%	51.4

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	802393	51.4	52.3	1.85%	≤ 20%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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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

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

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
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%	≤ 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	2.99	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

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi, Manager
Analytical Services

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REPORT

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

Investigation: Total Metal Analyses as Requested

Laboratory No.: 802393

Reported: August 5, 2012

Collected: July 2, 2012

Received: July 2, 2012

Analyzed: See Below

Analytical Results

SAMPLE ID: SC-Sludge-WDR-368		Time Collected: 13:15		LAB ID: 802393				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				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.

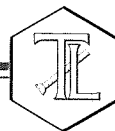

Mona Nassimi, Manager
Analytical Services

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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				MRCVS			
Parameter	Method	Batch	Units	Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Antimony	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%
Arsenic	SW 6010B	070912B-Th2	mg/kg	ND	0.500	4.85	5.00	97.0%	90-110%	4.79	5.00	95.9%	90-110%
Barium	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.96	5.00	99.3%	90-110%	4.98	5.00	99.6%	90-110%
Beryllium	SW 6020A	071212B	mg/kg	ND	1.00	0.00989	0.0100	98.9%	90-110%	0.00973	0.0100	97.3%	90-110%
Cadmium	SW 6010B	070912B-Th2	mg/kg	ND	0.500	5.03	5.00	101%	90-110%	4.96	5.00	99.2%	90-110%
Chromium	SW 6010B	072712A-Th2	mg/kg	ND	1.00	4.98	5.00	99.7%	90-110%	4.71	5.00	94.2%	90-110%
Cobalt	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.92	5.00	98.3%	90-110%	4.85	5.00	97.0%	90-110%
Copper	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.95	5.00	99.0%	90-110%	4.86	5.00	97.2%	90-110%
Lead	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.66	5.00	93.3%	90-110%	4.59	5.00	91.8%	90-110%
Manganese	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.91	5.00	98.2%	90-110%	4.76	5.00	95.3%	90-110%
Mercury	SW 6020A	071212B	mg/kg	ND	0.100	0.00205	0.00200	103%	90-110%	0.00191	0.00200	95.3%	90-110%
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	070912B-Th2	mg/kg	ND	1.00	4.92	5.00	98.4%	90-110%	4.85	5.00	97.1%	90-110%
Selenium	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.56	5.00	91.2%	90-110%	4.51	5.00	90.2%	90-110%
Silver	SW 6010B	071212A-Th2	mg/kg	ND	1.00	4.83	5.00	96.6%	90-110%	4.83	5.00	96.5%	90-110%
Thallium	SW 6010B	070912B-Th2	mg/kg	ND	2.00	5.04	5.00	101%	90-110%	4.98	5.00	99.6%	90-110%
Vanadium	SW 6010B	070912B-Th2	mg/kg	ND	1.00	4.89	5.00	97.7%	90-110%	4.80	5.00	96.0%	90-110%
Zinc	SW 6010B	070912B-Th2	mg/kg	ND	2.00	5.10	5.00	102%	90-110%	5.03	5.00	101%	90-110%

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TRUESDAIL LABORATORIES, INC.

Report Continued

INTERFERENCE CHECK STANDARD (ICS A+B #1)

INTERFERENCE CHECK STANDARD (ICS A+B #2)

Parameter	Method	Units	ICS Obs.	ICS Theo.	% Rec.	Control Limits	ICS Obs.	ICS Theo.	% Rec.	Control 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

Parameter	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE ID	SAMPLE RESULT	DUP RESULT	% RPD	Precision Control 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
Thallium	SW 6010B	mg/kg	0.107	0.100	107%	85-115%	802393	ND	ND	0.00%	≤20
Vanadium	SW 6010B	mg/kg	0.0979	0.100	97.9%	85-115%	802393	39.4	38.8	1.53%	≤20
Zinc	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 ID	Parameter	Method	Units	Sample		Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy
				Result	DF						Control 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.

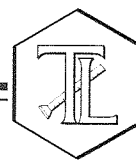
DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
for Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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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

TRUESDAIL LABORATORIES, INC.



TOTAL SOLIDS BY SM 2540 B

Date of Analysis: 07/05/12

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

[illegible]

Relative Percent Difference			
Sample ID	Sample	Sample Dup	RPD
802393	51.351	52.309	1.8

$$\% \text{ Total Solids} = \frac{(A - B) \times 100}{C - B} = \frac{\text{Weight of dried residue} \times 100}{\text{Weight of wet sample}}$$

Where:

A = Weight of dried Residue + Dish, g

B = Weight of dish, g

C = Weight of wet sample + Dish, g

G. Savani
Analyst Name

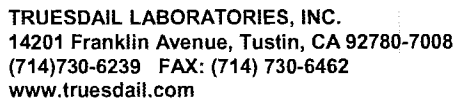


Analyst-Signature

Reviewer Name



Reviewer Signature



[IM3plant-WDR-368]

802393

DATE 07/02/12 PAGE 1 OF 1

ALERT!!
Level III QO

For Sample Conditions
See Form Attached

SAMPLE CONDITIONS

Signature (Relinquished) <i>[Signature]</i>	Printed Name LAIDE	Company/ Agency CHEN HILL	Date/ Time 7-2-12 1315
Signature (Received) <i>B. Dayag</i>	Printed Name B. DAYAG	Company/ Agency TLI	Date/ Time 7-25-12 1530
Signature (Relinquished) <i>B. Dayag</i>	Printed Name B. DAYAG	Company/ Agency TLI	Date/ Time 7-2-12 2045
Signature (Received) <i>[Signature]</i>	Printed Name Shalunina	Company/ Agency TLI	Date/ Time 7/2/12 2014
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received)	Printed Name	Company/ Agency	Date/ Time

RECEIVED COOL ☒ WARM ☐ 4.30 °C

CUSTODY SEALED YES ☐ NO ☒

SPECIAL REQUIREMENTS:

053

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
802320	<1	>2	6-27-12	BE	YES	3010A YES 8:30 AM
802319(1-11)	<1	>2			NO	YES 10:00 AM
802323	>1	<2			YES	3010A
802327(10-12)	<1	>2	6-28-12	BE	NO	YES 8:00 AM
802331(5-6)						
802335		<2			YES	3010A
802345	>1	>2				YES 14:30
802355(1,2)	<1	<2	6-29-12	BE	YES	3010A
802356(1,2)						
802357						
802361(1-16)					NO	NO
802362(1-6)						
802362-7		>2				
802363(1-3)						
802364(1-30)						
802374	>1	<2	7-2-12	BE	YES	3010A
802384(1,2)	<1	>2			NO	YES 15:00
802388	>1	<2	7-3-12	BE	YES	3010A
802389						
802392(1,2)	<1	>2				After Filter
802393	solid	-			YES	TTL
802394-2	<1	>2			YES	3010A YES
802394-1,3		<2				
802395(1-3)		>2				After Filter
802403	>1	<2			YES	3010A
802404						
802405						
802406						
802407						
802408(1,2)	<1	>2			NO	YES 15:00
802414(1-15)	<1	>2	7/4/12	KK	NO	YES @ 4:30 pm
802409	>1	<2	7-5-12	BE	YES	3010A
802410						
802411						
802412						
802423(1-4)	<1	>2			NO	YES 10:15 AM
802424(1-3)						
802426(6-7)						
802454(1-5)	>1				YES	3010A YES 15:00
802455	>1	<2	7-6-12	BE	YES	3010A
802456						
802465(1-12)	<1	>2			NO	YES 14:45
802468	>1	<2			YES	3010A
802472	>1	<2	7-9-12	BE	YES	3010A
802474						
802479(1-4)						
802480						
802481						
802482						



Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 802393

Date Delivered: 07/02/12 Time: 10:45 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.3 C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = _____ ☐ Yes ☐ No ☒ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☒ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☐ Other _____
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Shabunina

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

August 6, 2012

Revision 1

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.


<i>Client ID</i>	<i>Truesdail ID</i>	<i>Aquatic Testing Labs</i>
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



A dedicated to providing quality aquatic toxicity testing@

Date: July 10, 2012

Client: Truesdail Laboratories, Inc.
14201 Franklin Avenue
Tustin, CA 92780
Attn: Sean Condon

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:

<u>Sample ID.</u>	<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



Lab No.: A12070501-w1

Client/ID: Trucksda:1 802393

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.

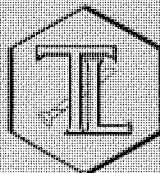
TEST DATA

	INITIAL			24 Hr				48 Hr				72 Hr				96 Hr			
Date/Time:	7-6-12 1130			7-7-12 1130				7-8-12 1130				7-9-12 1000				7-10-12 1100			
Analyst:	Z			Z				Z				L.V.				L.V.			
	°C	DO	pH	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D
Control A	20.0	8.7	8.1	20.8	6.3	8.1	0	20.6	5.7	7.7	0	20.4	8.6	7.6	0	20.6	8.8	7.8	0
Control B	20.0	8.7	8.2	20.8	7.0	8.1	0	20.6	6.7	7.7	0	20.4	8.3	7.6	0	20.7	8.3	7.8	0
400 mg/l A	20.0	9.0	8.2	20.8	7.5	8.0	1	20.7	6.6	7.6	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	20.8	7.5	8.0	0	20.7	6.3	7.6	0	20.4	8.6	7.7	0	20.8	8.6	7.7	0
750 mg/l A	20.0	8.9	8.2	20.7	7.5	8.1	0	20.7	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	20.6	8.0	8.1	0	20.6	6.7	7.8	0	20.4	8.3	7.9	0	20.6	8.4	7.8	0

Comments: Extraction method: Mechanical shaking X.
None (aqueous solution) —.
Dissolved Oxygen (DO) readings in mg/l O₂. Test Aerated: Yes / No

	CONTROL		HIGH CONCENTRATION		Total Number Dead	
	Alkalinity	Hardness	Alkalinity	Hardness		
Initial	32 mg/l CaCO ₃	46 mg/l CaCO ₃	31 mg/l CaCO ₃	47 mg/l CaCO ₃	Control	0 /20
Final	32 mg/l CaCO ₃	46 mg/l CaCO ₃	36 mg/l CaCO ₃	72 mg/l CaCO ₃	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)
NA	FAILED	LC50 < 400 mg/l (>60% dead in 400 mg/l conc.)



TRUESDAIL LABORATORIES, INC.

14201 FRANKLIN AVENUE, TUSTIN, CALIFORNIA 92780

ALERT !!
Level III QC

Laboratory Transmittal Form

Date: 07/03/12 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

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

TRUESDAIL LABORATORIES, INC.

Attn: Sean Condon

14201 Franklin Avenue, Tustin, California 92780

Please include Truesdail Sample ID on your invoice

Sample ID	Date	Time	Matrix	Tests/Methods Required										Container Qty.	Comments/Container Type
				Acute Aquatic Toxicity, 96 hr Acute (Bioassay)											
802393	7/2/12	13:15	Sludge	X										1	4 oz /Glass
															Level III
														1	Containers Total

Type of Service:

☒ X Normal (TAT)

☐ RUSH (5 day TAT)

☐ URGENT (24-48 hr. TAT)

☐ Results needed by: _____

Sample Conditions:

Received on Ice? ☒ Yes ☐ No

Sealed? ☐ Yes ☒ No

Special Shipment/Handling or Storage Requirements:

Relinquished by: Luda Shabunina

Signature

Luda Shabunina

Printed Name

TLI

Company

07/03/12

Date

14:30

Time

Received by: [Signature]

Signature

Joe LeMay

Printed Name

ATI

Company

7-5-72

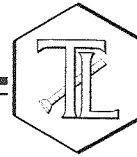
Date

10/10

Time

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August 8, 2012

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TUSTIN, CALIFORNIA 92780-7008
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www.truesdail.com

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.

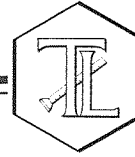

Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

002

TRUESDAIL LABORATORIES, INC.

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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

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TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
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Laboratory No.: 802394

Date: August 8, 2012

Collected: July 2, 2012

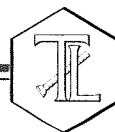
Received: July 2, 2012

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 / Bitia Emami
EPA 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

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

Attention: Shawn Duffy

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

Analytical Results Summary

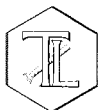
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802394-001	SC-700B-WDR-368	E120.1	NONE	7/2/2012	13:00	EC	7210	umhos/cm	2.00
802394-001	SC-700B-WDR-368	E200.7	NONE	7/2/2012	13:00	Aluminum	ND	ug/L	50.0
802394-001	SC-700B-WDR-368	E200.7	NONE	7/2/2012	13:00	BORON	1030	ug/L	200
802394-001	SC-700B-WDR-368	E200.7	NONE	7/2/2012	13:00	Iron	ND	ug/L	20.0
802394-001	SC-700B-WDR-368	E200.7	NONE	7/2/2012	13:00	Zinc	ND	ug/L	10.0
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.



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample 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



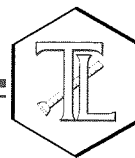
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802394-003	SC-701-WDR-368	E120.1	NONE	7/2/2012	13:15	EC	48200	umhos/cm	2.00
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	13:15	Antimony	ND	ug/L	50.0
802394-003	SC-701-WDR-368	E200.7	NONE	7/2/2012	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.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 802394

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Printed 8/10/2012

Revised

Samples Received on 7/2/2012 8:45:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-368	802394-001	07/02/2012 13:00	Water
SC-100B-WDR-368	802394-002	07/02/2012 13:25	Water
SC-701-WDR-368	802394-003	07/02/2012 13:15	Water

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	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

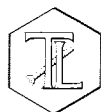
Duplicate

Lab ID = 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

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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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Duplicate

Lab ID = 802394-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.42	2.48	2.61	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.03	2.99	1.46	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.99	4.00	99.8	90 - 110
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	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	23.0	22.5(20.0)	102.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	23.8	23.0(20.0)	104.	85 - 115

MRCCS - Secondary

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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.89	3.00	96.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.92	3.00	97.4	90 - 110

MRCVS - Primary

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

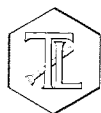
Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Nitrite SM 4500-NO2 B		Batch 07NO212A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Nitrite as Nitrogen	mg/L	07/03/2012 15:26	1.00	0.000540	0.0050	ND
802394-002 Nitrite as Nitrogen	mg/L	07/03/2012 15:27	1.00	0.000540	0.0050	ND
Method Blank						
Parameter	Unit	DF	Result			
Nitrite as Nitrogen	mg/L	1.00	ND			
Duplicate				Lab ID = 802383-024		
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0375	0.0400	93.8	90 - 110
Matrix Spike				Lab ID = 802383-019		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0224	0.0262(0.0200)	81.0	85 - 115
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200	98.0	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0210	0.0200	105	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

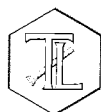
Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Specific Conductivity - EPA 120.1		Batch 07EC12H				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Specific Conductivity	umhos/cm	07/03/2012	1.00	0.116	2.00	7210
802394-002 Specific Conductivity	umhos/cm	07/03/2012	1.00	0.116	2.00	7640
802394-003 Specific Conductivity	umhos/cm	07/03/2012	1.00	0.116	2.00	48200
Method Blank						
Parameter	Unit	DF	Result			
Specific Conductivity	umhos	1.00	ND			
Duplicate					Lab ID = 802394-003	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	48200	48200	0.00	0 - 10
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	699	706	99.0	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	701	706	99.3	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	998	98.2	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch 07CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Chromium, Hexavalent	ug/L	07/03/2012 13:29	1.00	0.0250	0.20	ND
802394-002 Chromium, Hexavalent	ug/L	07/03/2012 13:50	50.0	1.25	10.0	797.
802394-003 Chromium, Hexavalent	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	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.88	6.58	4.44	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.204	0.200	102.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.8	16.6(10.0)	102.	90 - 110

Matrix Spike

Lab ID = 802394-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.11(1.00)	93.4	90 - 110

Matrix Spike

Lab ID = 802394-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1840	1800(1000)	104.	90 - 110

Matrix Spike

Lab ID = 802394-003

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

Matrix Spike

Lab ID = 802394-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	11.0	11.2(10.0)	98.7	90 - 110

Matrix Spike

Lab ID = 802394-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.64	6.21(5.00)	88.5	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Metals by EPA 200.7, Total		Batch 071112A-Th2				
Parameter	Unit	Analyzed	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

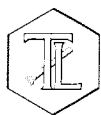
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Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Thallium	ug/L	1.00	ND
Boron	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 802394-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance 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
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

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Project Number: 424973.01.DM

Printed 8/8/2012

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

MRCVS - 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

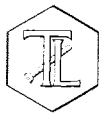
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4850	5000	96.9	90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Metals by EPA 200.7, Total		Batch 072512A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-003 Arsenic	ug/L	07/25/2012 14:49	1.00	5.40	10.0	ND
Barium	ug/L	07/25/2012 14:49	1.00	5.20	10.0	105.
Cadmium	ug/L	07/25/2012 14:49	1.00	3.50	10.0	ND
Manganese	ug/L	07/25/2012 14:49	1.00	2.00	10.0	10.8
Nickel	ug/L	07/25/2012 14:49	1.00	2.00	10.0	ND
Selenium	ug/L	07/25/2012 14:49	1.00	4.70	10.0	31.3
Vanadium	ug/L	07/25/2012 14:49	1.00	2.10	10.0	35.2

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Cadmium	ug/L	1.00	ND
Cobalt	ug/L	1.00	ND
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	RPD	Acceptance 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.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	1960	2000	97.9	85 - 115
Barium	ug/L	1.00	2070	2000	103.	85 - 115
Cadmium	ug/L	1.00	1990	2000	99.6	85 - 115
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
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

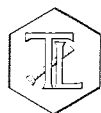
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	2310	2000(2000)	115.	75 - 125
Barium	ug/L	1.00	2110	2100(2000)	100.	75 - 125
Cadmium	ug/L	1.00	1820	2000(2000)	90.8	75 - 125
Cobalt	ug/L	1.00	1700	2000(2000)	85.0	75 - 125
Nickel	ug/L	1.00	1710	2000(2000)	85.6	75 - 125
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	Result	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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/8/2012

Metals by EPA 200.7, Total

Batch 073012B-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-003 Antimony	ug/L	07/30/2012 16:19	5.00	29.0	50.0	ND
Chromium	ug/L	07/30/2012 16:19	5.00	10.5	50.0	ND
Silver	ug/L	07/30/2012 16:19	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	RPD	Acceptance 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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	2090	2000	104.	85 - 115
Antimony	ug/L	1.00	1900	2000	95.2	85 - 115
Silver	ug/L	1.00	2070	2000	103.	85 - 115

Matrix Spike

Lab ID = 802394-003

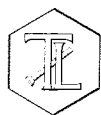
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	8590	10000(10000)	85.9	75 - 125
Antimony	ug/L	5.00	9810	10000(10000)	98.1	75 - 125
Silver	ug/L	5.00	10100	10000(10000)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Recovery	Acceptance Range
Chromium	ug/L	1.00	5040	5000	101.	90 - 110



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Project Number: 424973.01.DM

Printed 8/8/2012

Metals by EPA 200.7, Total

Batch 073112A-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-003 Beryllium	ug/L	07/31/2012 14:16	10.0	18.0	100.	ND
Copper	ug/L	07/31/2012 14:16	10.0	50.0	100.	ND

Method Blank

Parameter	Unit	DF	Result
Beryllium	ug/L	1.00	ND
Copper	ug/L	1.00	ND

Duplicate

Lab ID = 802394-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Beryllium	ug/L	10.0	ND	0.00	0	0 - 20
Copper	ug/L	10.0	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	2040	2000	102.	85 - 115
Copper	ug/L	1.00	2050	2000	102.	85 - 115

Matrix Spike

Lab ID = 802394-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Beryllium	ug/L	10.0	22600	20000(20000)	113.	75 - 125
Copper	ug/L	10.0	22700	20000(20000)	114.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	4940	5000	98.8	90 - 110
Copper	ug/L	1.00	4930	5000	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	4800	5000	96.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	4880	5000	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	4970	5000	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	4910	5000	98.2	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 8/8/2012

Metals by EPA 200.8, Total

Batch 071212B

Parameter	Unit	Analyzed	DF	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	RPD	Acceptance Range
Arsenic	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.217	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	102	100.	102	85 - 115

Matrix Spike

Lab ID = 801751-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	463.	500.(500.)	92.6	75 - 125

Matrix Spike Duplicate

Lab ID = 801751-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	452.	500.(500.)	90.5	75 - 125

MRCCS - Secondary

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

MRCVS - Primary

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

MRCVS - Primary

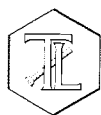
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.92	10.0	99.2	90 - 110

MRCVS - Primary

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

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

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Project Name: PG&E Topock Project

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Metals by EPA 200.8, Total		Batch 070312A				
Parameter	Unit	Analyzed	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

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 = 801751-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	0.231	0.200	116.	70 - 130
Chromium	ug/L	1.00	0.196	0.200	97.8	70 - 130
Nickel	ug/L	1.00	0.217	0.200	109.	70 - 130
Copper	ug/L	1.00	0.853	1.00	85.3	70 - 130
Manganese	ug/L	1.00	0.105	0.100	105.	70 - 130



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Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
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

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
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

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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	10.6	10.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	10.6	10.0	106.	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

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Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.61	10.0	96.1	80 - 120
Nickel	ug/L	1.00	10.1	10.0	101	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	10.1	10.0	101.	80 - 120
Copper	ug/L	1.00	10.0	10.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.63	10.0	96.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.54	10.0	95.4	80 - 120

Serial Dilution

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	28.6	26.3	8.55	0 - 10
Chromium	ug/L	25.0	739.	748	1.22	0 - 10

Lab ID = 802394-002



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Project Name: PG&E Topock Project

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Metals by EPA 200.8, Total

Batch 080612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Antimony	ug/L	08/06/2012 14:50	1.00	0.0840	2.0	2.7
Lead	ug/L	08/06/2012 14:50	1.00	0.0530	1.0	ND
Molybdenum	ug/L	08/06/2012 14:50	1.00	0.132	2.0	22.7
802394-002 Antimony	ug/L	08/06/2012 14:57	1.00	0.0840	2.0	ND
Lead	ug/L	08/06/2012 14:57	1.00	0.0530	1.0	ND
Molybdenum	ug/L	08/06/2012 14:57	1.00	0.132	2.0	23.3

Method Blank

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	Acceptance Range
Antimony	ug/L	1.00	2.23	2.00	111.	70 - 130
Lead	ug/L	1.00	0.815	1.00	81.5	70 - 130
Molybdenum	ug/L	1.00	1.10	1.00	110.	70 - 130

Lab Control Sample

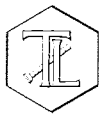
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	5.00	96.9	100.	96.9	85 - 115
Lead	ug/L	5.00	93.0	100.	93.0	85 - 115
Molybdenum	ug/L	5.00	90.0	100.	90.0	85 - 115

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	90.5	100.(100.)	90.5	75 - 125
Lead	ug/L	5.00	89.0	100.(100.)	89.0	75 - 125
Molybdenum	ug/L	5.00	109.	118.(100.)	90.9	75 - 125

Matrix Spike Duplicate

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	92.9	100.(100.)	92.9	75 - 125
Lead	ug/L	5.00	89.9	100.(100.)	89.9	75 - 125
Molybdenum	ug/L	5.00	114.	27.7(10.0)	967	75 - 125



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

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Metals by EPA 200.8, Total

Batch 080612A

Parameter	Unit	Analyzed	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

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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	0.176	0.200	88.0	70 - 130
Mercury	ug/L	1.00	0.224	0.200	112.	70 - 130
Lead	ug/L	1.00	0.815	1.00	81.5	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	5.00	88.8	100.	88.8	85 - 115
Mercury	ug/L	5.00	19.3	20.0	96.6	85 - 115
Lead	ug/L	5.00	93.0	100.	93.0	85 - 115

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Cobalt	ug/L	5.00	91.6	100.(100.)	91.6	75 - 125
Mercury	ug/L	5.00	17.6	20.0(20.0)	88.0	75 - 125
Lead	ug/L	5.00	89.0	100.(100.)	89.0	75 - 125

Lab ID = 802674-001

Matrix Spike Duplicate

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Cobalt	ug/L	5.00	91.8	100.(100.)	91.8	75 - 125
Mercury	ug/L	5.00	18.0	20.0(20.0)	90.0	75 - 125
Lead	ug/L	5.00	89.9	100.(100.)	89.9	75 - 125

Lab ID = 802674-001

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	10.1	10.0	101.	90 - 110
Mercury	ug/L	1.00	2.06	2.00	103.	90 - 110
Lead	ug/L	1.00	10.2	10.0	102.	90 - 110



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Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	9.63	10.0	96.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	9.08	10.0	90.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	2.08	2.00	104.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	2.12	2.00	106.	80 - 120

Lead	ug/L	1.00	ND	0.00		
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Interference Check Standard AB

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

Total Dissolved Solids by SM 2540 C

Batch 07TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Total Dissolved Solids	mg/L	07/03/2012	1.00	0.757	250.	4020
802394-002 Total Dissolved Solids	mg/L	07/03/2012	1.00	0.757	250.	4530
802394-003 Total Dissolved Solids	mg/L	07/03/2012	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	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4410	4340	1.60	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	498	500.	99.6	90 - 110



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Project Name: PG&E Topock Project

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Ammonia Nitrogen by SM4500-NH3D			Batch 07NH312B			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Ammonia as N	mg/L	07/09/2012	1.00	0.00980	0.500	ND
802394-002 Ammonia as N	mg/L	07/09/2012	1.00	0.00980	0.500	ND
Method Blank						
Parameter	Unit	DF	Result			
Ammonia as N	mg/L	1.00	ND			
Duplicate			Lab ID = 802394-001			
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	ND	0.00	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.55	10.0	95.5	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.94	10.0	99.4	90 - 110
Matrix Spike			Lab ID = 802394-002			
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.00	6.06(6.00)	82.4	75 - 125
Matrix Spike Duplicate			Lab ID = 802394-002			
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	4.80	6.06(6.00)	79.1	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.58	6.00	93.0	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.68	6.00	94.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 38 of 38


Project Number: 424973.01.DM

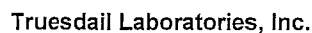
Printed 8/8/2012

Turbidity by SM 2130 B		Batch 07TUC12A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
802394-001 Turbidity	NTU	07/03/2012	1.00	0.0140	0.100	ND
802394-002 Turbidity	NTU	07/03/2012	1.00	0.0140	0.100	ND
Duplicate					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	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.87	8.00	98.4	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.80	8.00	97.5	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



E2 SL

Calculations

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

[illegible]

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	498	500	99.6%	90-110%	Yes
LCS2					
LCS3					
LCS4					
LCS5					
LCS6					
LCS7					
LCS8					
LCS9					
LCS10					
LCS11					
LCS12					
LCS13					
LCS14					
LCS15					
LCS16					
LCS17					
LCS18					
LCS19					
LCS20					
LCS21					
LCS22					
LCS23					
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LCS84					
LCS85					
LCS86					
LCS87					
LCS88					
LCS89					
LCS90					
LCS91					
LCS92					
LCS93					
LCS94					
LCS95					
LCS96					
LCS97					
LCS98					

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature _____

TDS/EC CHECK

[illegible]

A handwritten signature in black ink, appearing to be "J. H. ...".



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]

802394

TURNAROUND TIME 10 Days
DATE 07/02/12 PAGE 1 OF 1

COMPANY	CH2M HILL /E2																COMMENTS		
PROJECT NAME	PG&E Topock IM3																		
PHONE	530-229-3303		FAX	530-339-3303															
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																		
P.O. NUMBER	408401.01.DM																		
SAMPLERS (SIGNATURE)																	NUMBER OF CONTAINERS		
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Anions (300.0) F	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Total Metals (200.7) Mn	NO2 (4500-NO2B)				
1	SC-700B-WDR-368	07/02/12	1300	X	X	X	X	X	X	X	X	X	X	X	4				
2	SC-100B-WDR-368	07/02/12	1305	X	X	X	X	X	X	X	X	X	X	X	4				
3	SC-701-WDR-368	07/02/12	1315	X	X	X	X			X		X			4				
ALERT!! Level III QC				For Sample Conditions See Form Attached															
																	12	TOTAL NUMBER OF CONTAINERS	

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	4.3 °C
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:			
Signature (Received)	Printed Name	Company/Agency	Date/Time	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn			
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

[illegible]

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
802320	<1	>2	6-27-12	BE	YES	3:10 A YES 8:30 AM
802319(1-11)	<1	>2	↓	↓	NO	YES 10:00 AM
802323	>1	<2	↓	↓	YES	3:10 A
802329(10-12)	<1	>2	6-28-12	BE	NO	YES 8:00 AM
802331(5-6)	↓	↓	↓	↓	↓	↓
802335	↓	<2	↓	↓	YES	3:10 A
802345	>1	>2	↓	↓	↓	YES 11:30
802355(10-2)	<1	<2	6-29-12	BE	YES	3:10 A
802356(10-2)	↓	↓	↓	↓	↓	↓
802357	↓	↓	↓	↓	↓	↓
802361(1-16)	↓	↓	↓	↓	NO	NO
802362(1-6)	↓	↓	↓	↓	↓	↓
802362-7	↓	>2	↓	↓	↓	↓
802363(1-3)	↓	↓	↓	↓	↓	↓
802364(1-30)	↓	↓	↓	↓	↓	↓
802374	>1	<2	7-2-12	BE	YES	3:10 A
802384(10-2)	<1	>2	↓	↓	NO	YES 15:00
802388	>1	<2	7-3-12	BE	YES	3:10 A
802389	↓	↓	↓	↓	↓	↓
802392(1,2)	<1	>2	↓	↓	↓	After Filter
802393	Solid	—	↓	↓	YES	TTL
802394-2	<1	>2	↓	↓	YES	3:10 A YES
802394-1,3	↓	<2	↓	↓	↓	↓
802395(1-3)	↓	>2	↓	↓	↓	After Filter
802403	>1	<2	↓	↓	YES	3:10 A
802404	↓	↓	↓	↓	↓	↓
802405	↓	↓	↓	↓	↓	↓
802406	↓	↓	↓	↓	↓	↓
802407	↓	↓	↓	↓	↓	↓
802409(10-24)	<1	>2	↓	↓	NO	YES 15:00
802414(1-15)	<1	>2	7/4/12	KK	NO	YES @ 4:30 pm
802409	>1	<2	7-5-12	BE	YES	3:10 A
802410	↓	↓	↓	↓	↓	↓
802411	↓	↓	↓	↓	↓	↓
802412	↓	↓	↓	↓	↓	↓
802423(1-4)	<1	>2	↓	↓	NO	YES 10:15 AM
802424(1-3)	↓	↓	↓	↓	↓	↓
802426(6-7)	↓	↓	↓	↓	↓	↓
802454(1-5)	>1	↓	↓	↓	YES	3:10 A YES 15:00
802455	>1	<2	7-6-12	BE	YES	3:10 A
802456	↓	↓	↓	↓	↓	↓
802465(10-12)	<1	>2	↓	↓	NO	YES 14:45
802468	>1	<2	↓	↓	YES	3:10 A
802472	>1	<2	7-9-12	BE	YES	3:10 A
802474	↓	↓	↓	↓	↓	↓
802479(1-4)	↓	↓	↓	↓	↓	↓
802480	↓	↓	↓	↓	↓	↓
802481	↓	↓	↓	↓	↓	↓
802482	↓	↓	↓	↓	↓	↓



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 802394

Date Delivered: 07/02/12 Time: 20:45 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.3 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc..)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☒ Client
12. Were samples pH checked? pH = See C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Schabunice

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

July 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.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
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Laboratory No.: 802525

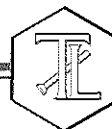
Date: July 25, 2012

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



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

Attention: Shawn Duffy

Laboratory No.: 802525
Date Received: July 10, 2012

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802525-001	SC-700B-WDR-369	E120.1	NONE	7/10/2012	10:00	EC	7290	umhos/cm	2.00
802525-001	SC-700B-WDR-369	E200.8	NONE	7/10/2012	10:00	Chromium	ND	ug/L	1.0
802525-001	SC-700B-WDR-369	E200.8	NONE	7/10/2012	10:00	Manganese	1.6	ug/L	1.0
802525-001	SC-700B-WDR-369	E218.6	LABFLT	7/10/2012	10:00	Chromium, hexavalent	ND	ug/L	0.20
802525-001	SC-700B-WDR-369	SM2130B	NONE	7/10/2012	10:00	Turbidity	ND	NTU	0.100
802525-001	SC-700B-WDR-369	SM2540C	NONE	7/10/2012	10:00	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.

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 802525

Page 1 of 7

Printed 7/25/2012

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

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-369	802525-001	07/10/2012 10:00	Water

Specific Conductivity - EPA 120.1

Batch 07EC12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802525-001 Specific Conductivity	umhos/cm	07/13/2012	1.00	0.116	2.00	7290

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 802525-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7300	7290	0.137	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	970.	998	97.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 7

Project Number: 424973.01.DM

Printed 7/25/2012

Chrome VI by EPA 218.6

Batch 07CrH12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802525-001 Chromium, Hexavalent	ug/L	07/14/2012 19:15	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate

Lab ID = 802497-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	12.4	12.4	0.00645	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.197	0.200	98.7	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.92	5.00	98.4	90 - 110

Matrix Spike

Lab ID = 802497-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.5	16.8(10.0)	97.7	90 - 110

Matrix Spike

Lab ID = 802497-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.1	17.4(10.0)	97.1	90 - 110

Matrix Spike

Lab ID = 802497-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.2	15.4(10.0)	97.5	90 - 110

Matrix Spike

Lab ID = 802497-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.2	15.5(10.0)	97.6	90 - 110

Matrix Spike

Lab ID = 802497-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.50	9.58(5.00)	98.5	90 - 110

Matrix Spike

Lab ID = 802497-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	14.9	15.2(10.0)	97.5	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 3 of 7****Project Number: 424973.01.DM****Printed 8/9/2012****Revised****Lab ID = 802497-008****Matrix Spike**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.22	7.26(5.00)	99.1	90 - 110

Matrix Spike**Lab ID = 802497-009**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.3	16.4(10.0)	98.6	90 - 110

Matrix Spike**Lab ID = 802525-001**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.10	1.11(1.00)	99.5	90 - 110

Matrix Spike**Lab ID = 802525-001**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.02	5.20(5.00)	96.5	90 - 110

Matrix Spike**Lab ID = 802526-001**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.75	9.67(5.00)	102.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.86	10.0	98.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.97	10.0	99.7	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.94	10.0	99.4	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105



TRUESDAIL LABORATORIES, INC.

Report Continued

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, Total

Batch 071212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802525-001 Chromium	ug/L	07/12/2012 17:24	5.00	0.195	1.0	ND
Manganese	ug/L	07/12/2012 17:24	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	Acceptance 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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.195	0.200	97.7	70 - 130
Manganese	ug/L	1.00	0.205	0.200	102.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	93.8	100.	93.8	85 - 115
Manganese	ug/L	5.00	94.8	100.	94.8	85 - 115

Matrix Spike

Lab ID = 802525-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.2	100.(100.)	94.2	75 - 125
Manganese	ug/L	5.00	96.6	102.(100.)	95.0	75 - 125

Matrix Spike Duplicate

Lab ID = 802525-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.1	100.(100.)	97.1	75 - 125
Manganese	ug/L	5.00	99.2	102.(100.)	97.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.86	10.0	98.6	90 - 110
Manganese	ug/L	1.00	9.94	10.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.22	10.0	92.2	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 prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 7

Project Number: 424973.01.DM

Printed 7/25/2012

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.83	10.0	98.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.23	10.0	92.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.82	10.0	98.2	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.36	10.0	93.6	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 07TDS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802525-001 Total Dissolved Solids	mg/L	07/13/2012	1.00	0.757	250.	4160

Method Blank

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

Duplicate

Lab ID = 802528-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1020	1030	0.584	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	499	500.	99.8	90 - 110

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

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 7/25/2012

Turbidity by SM 2130 B

Batch 07TUC12E

Parameter	Unit	Analyzed	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	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

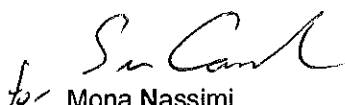
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.05	8.00	101.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	1
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	1
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
LCS	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:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where:

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

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

Laboratory Control Sample (LCS) Summary

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

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802528-8	0.0517	0.0512	0.5%	≤5%	Yes

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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

JA

W



TRUESDAIL LABORATORIES, INC.
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(714)730-6239 FAX: (714) 730-6462
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-369]

COC Number

TURNAROUND TIME

10 Days

DATE 07/10/12

PAGE 1 OF 1

802525

COMPANY	E2			<div>COMMENTS</div>														
PROJECT NAME	PG&E Topock																	
PHONE	(530) 229-3303		FAX													(530) 339-3303		
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																	
P.O. NUMBER	424973.01.DM		TEAM													1		
SAMPLERS (SIGNATURE)																		
SAMPLE I.D.	DATE	TIME	DESCRIPTION	C6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)									NUMBER OF CONTAINERS	
SC-700B-WDR-369	07/10/12	10:00	Water	x	x	x	x	x								3	pH = 6 (200.7)	
																3	TOTAL NUMBER OF CONTAINERS	

ALERT !!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
	Linda	OMI	7-10-12 15:00
Signature (Received)	Printed Name	Company/Agency	Date/Time
	Hipolito	TLI	7-10-12 15:00
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
	Hipolito	TLI	7-10-12 21:00
Signature (Received)	Printed Name	Company/Agency	Date/Time
	Linda	TLI	7/10/12 21:00
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
Signature (Received)	Printed Name	Company/Agency	Date/Time

SAMPLE CONDITIONS

RECEIVED COOL ☒ WARM ☐ 5.1 °C
CUSTODY SEALED YES ☐ NO ☒

SPECIAL REQUIREMENTS:

038

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	N/A	N/A	N/A	MG
6/20/12	802226	7	2 ml	9.5	10:45 AM	HAV
6/20/12	802228-1	9.5	N/A	9.5	N/A	HAV
↓	↓ -2	9.5	↓	↓	↓	↓
↓	↓ -3	9.5	↓	↓	↓	↓
6/28/12	802335	9.5	N/A	9.5	N/A	HAV
6/29/12	802355-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
6/29/12	802357	9.5	N/A	N/A	N/A	HAV
7/02/12	802392-1	7	2 ml	9.5	9:00 AM	HAV
↓	802394-1	↓	↓	↓	9:15 AM	↓
7/02/12	↓ -2	↓	↓	↓	9:30 AM	↓
↓	↓ -3	↓	↓	↓	09:45 AM	↓
07/10/12	802497-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
07/11/12	802525	7	2 ml	9.5	9:15 AM	HAV
07/11/12	802526	9.5	N/A	N/A	N/A	HAV
07/11/12	802527-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
07/11/12	802528-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓

HAV

Turbidity/pH Check

[illegible]



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 802525

Date Delivered: 07/10/12 Time: 21:00 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 5.1 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = see C.C.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda Neubauer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
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(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.

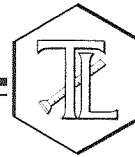
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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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

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

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



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

Attention: Shawn Duffy

Laboratory No.: 802674

Date Received: July 17, 2012

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

P.O. No.: 424973.01.DM

Analytical Results Summary

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

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 802674

Page 1 of 7

Printed 7/30/2012

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	Analyzed	DF	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	Expected	RPD	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	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	978	998	98.0	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 7

Project Number: 424973.01.DM

Printed 7/30/2012

Chrome VI by EPA 218.6

Batch 07CrH12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802674-001 Chromium, Hexavalent	ug/L	07/18/2012 15:52	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate

Lab ID = 802673-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.9	10.8	0.580	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.191	0.200	95.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.75	5.00	95.0	90 - 110

Matrix Spike

Lab ID = 802671-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.936	1.00(1.00)	93.6	90 - 110

Matrix Spike

Lab ID = 802671-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.06(1.00)	97.9	90 - 110

Matrix Spike

Lab ID = 802672-001

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

Matrix Spike

Lab ID = 802673-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.49	7.60(5.00)	97.7	90 - 110

Matrix Spike

Lab ID = 802673-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.50	7.59(5.00)	98.3	90 - 110

Matrix Spike

Lab ID = 802673-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.19	7.26(5.00)	98.6	90 - 110

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

009



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 7/30/2012

Matrix Spike

Lab ID = 802673-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.23	8.31(5.00)	98.4	90 - 110

Matrix Spike

Lab ID = 802673-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.972	1.00(1.00)	97.2	90 - 110

Matrix Spike

Lab ID = 802674-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.07	1.10(1.00)	96.9	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.75	5.00	95.0	90 - 110

MRCVS - Primary

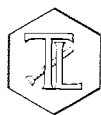
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.93	10.0	99.3	95 - 105

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.89	10.0	98.9	95 - 105



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 7

Project Number: 424973.01.DM

Printed 7/30/2012

Metals by EPA 200.8, Total

Batch 072612B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802674-001 Chromium	ug/L	07/26/2012 21:40	5.00	0.195	1.0	ND
Manganese	ug/L	07/26/2012 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	Acceptance 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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Chromium	ug/L	5.00	98.6	100.	98.6	85 - 115
Manganese	ug/L	5.00	92.8	100.	92.8	85 - 115

Matrix Spike

Lab ID = 802674-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.7	100.(100.)	99.7	75 - 125
Manganese	ug/L	5.00	93.2	102.(100.)	91.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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

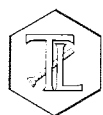
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

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

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


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 6 of 7
Project Number: 424973.01.DM
Printed 7/30/2012
Total Dissolved Solids by SM 2540 C

Batch 07TDS12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802674-001 Total Dissolved Solids	mg/L	07/20/2012	1.00	0.757	250.	3990

Method Blank

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

Duplicate

Lab ID = 802734-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	912	916	0.438	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	501	500.	100.	90 - 110

Turbidity by SM 2130 B

Batch 07TUC12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802674-001 Turbidity	NTU	07/18/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 802674-001

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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.20	8.00	102.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.35	8.00	104.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 7/30/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


f- Mona Nassimi

Manager, Analytical Services

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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





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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-370]

802674

COC Number

TURNAROUND TIME

10 Days

DATE 07/17/12

PAGE 1 OF 1

COMPANY	E2			<div>COMMENTS</div>															
PROJECT NAME	PG&E Topock																		
PHONE	(530) 229-3303		FAX													(530) 339-3303			
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																		
P.O. NUMBER	424973.01.DM		TEAM													1			
SAMPLERS (SIGNATURE)																			
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)									NUMBER OF CONTAINERS	3	TOTAL NUMBER OF CONTAINERS
SC-700B-WDR-370	07/17/12	10:00	Water	x	x	x	x	x											

pH = 6 (20.7)

ALERT !!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>
	How Phelps	om	7-17-12 15:20			4.4 °C
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
	Hipcho	TLI	7-17-12 15:20			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:		
	Hipcho	TLI	7-17-12 15:20			
Signature (Received)	Printed Name	Company/Agency	Date/Time			
	Shabunina	TLI	7/17/12 21:00			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

038

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	802385-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
07/13/12	802614-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
07/13/12	802615	9.5	N/A	N/A	N/A	HAV
07/13/12	802613	8.5	1 ml	9.5	6:33 PM	HAV
7/16/12	802632	7	1 mL	9.5	3:45 pm	MG
07/17/12	802636	9.5	N/A	N/A	N/A	HAV
07/17/12	802653-1	7	1 ml	9.5	6:30 PM	HAV
↓	↓ -2	↓	↓	↓	↓	↓
07/18/12	802671-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
07/18/12	802672	9.5	N/A	N/A	N/A	HAV
07/18/12	802673-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
07/18/12	802674	7	2 ml	9.5	9:00 AM	HAV
07/19/12	802703-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
802613-4	>1	<2	7-16-12	BE	3010A	—	—	
802614	<1	↓	↓	↓	↓	—	—	
802623(1,2,4)	<1	>2	7-17-12	BE	NO	9:00 AM	7-18-12 14:00	pH < 2
802626	>1	<2	↓	↓	3010A	—	—	
802627	↓	↓	↓	↓	↓	—	—	
802634	↓	>2	↓	↓	↓	11:00 AM	—	
802648(1-15)	<1	<2	↓	↓	NO	—	—	
802649(1-15)	↓	↓	↓	↓	↓	—	—	
802650(1-4)	↓	>2	↓	↓	↓	13:30	7/18/12 2:00 pm	pH < 2
802648(4-10)	↓	>2	↓	ES	↓	1:30 pm	↓	↓
802649(1,2,11,12,13)	↓	>2	↓	↓	↓	↓	↓	↓
802641(1-3)	<1	>2	↓	↓	NO	13:30	7-18-12 14:00	pH < 2
802643	>1	<2	↓	↓	3010A	—	—	
802644	↓	↓	↓	↓	↓	—	—	
802645	↓	↓	↓	↓	↓	—	—	
802646	↓	↓	↓	↓	↓	—	—	
802647	↓	↓	↓	↓	↓	—	—	
802673(1-6)	<1	<2	7-18-12	BE	3010A	—	—	
802674	↓	>2	↓	↓	↓	8:00	—	
802673(1-6)	<1	<2	7-18-12	ES	3010A	—	—	
802655(1-3)	<1	>2	↓	↓	NO	12:00 pm	7/19/12 12:00 pm	pH < 2
802663	<1	↓	↓	↓	↓	↓	↓	↓
802668(1-3)	<1	↓	↓	↓	↓	↓	7/19/12 1:00 pm	↓
802669(1-2)	<1	↓	↓	↓	↓	↓	↓	↓
802682(1-2)	<1	↓	↓	↓	↓	↓	↓	↓
802682-2	<1	<2	↓	↓	↓	—	—	
802703(1,3-8)	<1	<2	7-19-12	BE	3010A	—	—	
802704(1-5,7-10)	↓	↓	↓	↓	↓	—	—	
802699(1-7)	<1	>2	7/19/12	ES	—	1:00 pm	7/24/12 1:00	pH < 2
802707	↓	↓	↓	↓	—	↓	7/20 11:00	pH < 2
802709	>1	<2	↓	↓	3010A	—	↓	↓
802724	>1	<2	7/19/12	ES	↓	—	—	
802734(1,2-9)	<1	<2	7-20-12	BE	3010A	—	—	
802736(1-6,9)	↓	↓	↓	↓	↓	—	—	
802752(1,3-5)	<1	<2	7-23-12	BE	3010A	—	—	
802753(1,3-7)	↓	↓	↓	↓	↓	—	—	
802754(1,3-6)	↓	↓	↓	↓	↓	—	—	
802755(1-6)	↓	↓	↓	↓	↓	—	—	
802756(1-3,5-8)	↓	↓	↓	↓	↓	—	—	
802749	50% soil	>2	↓	↓	3010A, TLC	—	—	after filter
802773	<1	<2	↓	↓	3010A	—	—	
802771(1-2,4)	<1	>2	↓	↓	—	14:00	—	
802782(1-182)	<1	<2	7-24-12	BE	—	—	—	
802778	<1	>2	↓	↓	3010A	12:00 pm	—	

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

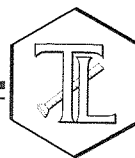
Lab # 802674

Date Delivered: 07/17/12 Time: 2:00 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.4°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See C.C.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☐ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Guabaur

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

September 5, 2012

14201 FRANKLIN AVENUE
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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.

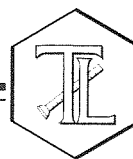
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


to - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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Established 1931

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

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Laboratory No.: 802818

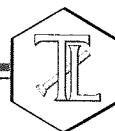
Date: August 13, 2012

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 / Bitia Emami
EPA 218.6	Hexavalent Chromium	George Wahba



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

Laboratory No.: 802818

Date Received: July 24, 2012

Revision 1; September 5, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample 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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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 802818

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Printed 8/14/2012

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

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

Specific Conductivity - EPA 120.1

Batch 07EC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802818-001 Specific Conductivity	umhos/cm	07/27/2012	1.00	0.116	2.00	7720

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 802818-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7720	7720	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	711	706	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	966	998	96.8	90 - 110

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

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 9/5/2012

Revised

Chrome VI by EPA 218.6

Batch 07CrH120

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802818-001 Chromium, Hexavalent	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	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.48	1.46	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.190	0.200	95.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.61	6.99(5.00)	92.5	90 - 110

Matrix Spike

Lab ID = 802787-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.74	7.01(5.00)	94.6	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 4 of 10****Project Number: 424973.01.DM****Printed 9/5/2012**

Revised

Lab ID = 802818-001

Matrix Spike

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

MRCSS - 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

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Project Number: 424973.01.DM

Printed 8/14/2012

Metals by EPA 200.8, Total			Batch 080712A				
Parameter		Unit	Analyzed	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							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Recovery	Acceptance Range	
Chromium	ug/L	5.00	95.3	100.	95.3	85 - 115	
Manganese	ug/L	5.00	95.0	100.	95.0	85 - 115	
Matrix Spike						Lab ID = 802755-006	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium	ug/L	5.00	124.	124.(100.)	99.4	75 - 125	
Manganese	ug/L	5.00	97.1	100.(100.)	97.1	75 - 125	
Matrix Spike Duplicate						Lab ID = 802755-006	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium	ug/L	5.00	125.	124.(100.)	100.	75 - 125	
Manganese	ug/L	5.00	93.2	100.(100.)	93.2	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Recovery	Acceptance Range	
Chromium	ug/L	1.00	9.35	10.0	93.5	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium	ug/L	1.00	9.38	10.0	93.8	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium	ug/L	1.00	9.54	10.0	95.4	90 - 110	



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Report Continued

Client: E2 Consulting Engineers, Inc.

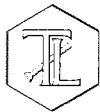
Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/14/2012

Metals by EPA 200.8, Total		Batch 080612B				
Parameter	Unit	Analyzed	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			
Duplicate				Lab ID = 802941-001		
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.170	0.200	85.1	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	90.9	100.	90.9	85 - 115
Matrix Spike				Lab ID = 802941-001		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	91.5	100.(100.)	91.5	75 - 125
Matrix Spike Duplicate				Lab ID = 802941-001		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	93.4	100.(100.)	93.4	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.22	10.0	92.2	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.02	10.0	90.2	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.02	10.0	90.2	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.25	10.0	92.5	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/14/2012

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	8.88	10.0	88.8	80 - 120

Interference Check Standard 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 2540 C

Batch 07TDS12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802818-001 Total Dissolved Solids	mg/L	07/26/2012	1.00	0.757	250.	4670

Method Blank

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

Duplicate

Lab ID = 802822-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1240	1250	0.642	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	491	500.	98.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/14/2012

Turbidity by SM 2130 B

Batch 07TUC12M

Parameter	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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.43	8.00	105.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.22	8.00	103.	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: 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	1
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

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	98.2%	90-110%	Yes
LCS2					

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
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



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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-371]

802818

COC Number

TURNAROUND TIME

10 Days

DATE 07/24/12

PAGE 1 OF 1

COMPANY E2				<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Cr6 (218.6) Lab Filtered</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Metals (200.7) Cr, Mn</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Specific Conductance (120.1)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TDS (SM2540C)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Turbidity (SM2130)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</div> </div>												COMMENTS		
PROJECT NAME PG&E Topock																		
PHONE (530) 229-3303		FAX (530) 339-3303																
ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612																		
P.O. NUMBER 456827.01.DM		TEAM 1																
SAMPLERS (SIGNATURE) <i>Chris Ju</i>																		
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6	Total Metals	Specific Conductance	TDS	Turbidity									NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-371	07/24/12	14:00	Water	x	x	x	x	x								3	PH=6 (200.7)	
																3	TOTAL NUMBER OF CONTAINERS	

For Sample Conditions
See Form Attached

ALERT !!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished) <i>Chris Ju</i>	Printed Name CHRIS JU	Company/Agency OM1	Date/Time 7/24/12 15:30	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 4.5°C
Signature (Received) <i>Rafael Davila</i>	Printed Name Rafael	Company/Agency T.L.I	Date/Time 7-24-12 15:30	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Signature (Relinquished) <i>Rafael Davila</i>	Printed Name Rafael	Company/Agency T.L.I	Date/Time 7-24-12 21:30	SPECIAL REQUIREMENTS:		
Signature (Received) <i>Shahana</i>	Printed Name Linda	Company/Agency TLI	Date/Time 7/24/12 21:30			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

0405

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
07/24/12	802789-8	9.5	N/A	N/A	N/A	HAV
07/24/12	802790-I	9.5	N/A	N/A	N/A	HAV
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
07/24/12	802800-I	7	1 ml	9.5	6:30 PM	HAV
	-2					
	-3					
07/25/12	802818	7	2 ml	9.5	11:00 AM	HAV
07/25/12	802821-I	9.5	N/A	N/A	N/A	HAV
	-2					
07/25/12	802822-I	9.5	N/A	N/A	N/A	HAV
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
07/25/12	802823-I	9.5	N/A	N/A	N/A	HAV
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
802779	<1	>2	7-24-12	BE	3010A	12:00pm		
802786	<1	<2						
802787(1-6, 8)								
802788(1-2, 5-7, 9-11)								
802789(1-3, 5-8)								
802790(1, 2-8)								
802795	>1	<2						
802796								
802798								
802799								
802818	<1	>2	7-25-12	BE	3010A	10:30		
802819(1-3)	<1	<2						
802820								
802821(1-2)								
802822(1-3, 5-9)								
802823(1, 3-10)								
802824(1, 3-4, 5, 6-10)								
802806(1-3)		>2			NO	13:00		pH < 2 bk
802807(1-3)								pH < 2 bk
802814	>1	<2			3010A			
802815								
802816								
802817								
802835(1-22)	<1	>2			NO	14:30		pH < 2 bk
802836	>1				3010A			
802843(1-8, 10)	<1	<2	7-26-12	BE	3010A			
802844(1, 2-10)								
802845(1-9, 11)								
802846(1-3, 5-9)								
802841(1-9)		>2				9:30		
802842(10-12)					NO	9:30		
802851(1-5)						12:30		pH < 2 bk
802856	>1	>2			XCS	12:30		
802862		<2						
802863								
802852(1-3)	>1	>2	7-30-12	BE	XCS 3010A	7/30/12	11:00 Acidified	Apart of sample
802853(1-4)					3010A		7-31-12 12:00	✓
802854(1-6)								
802885		<2			BE	NO		
802868(1-6)	<1	<2						
802869(1-4, 6-8)								
802870(1, 2-11)								
802871(1, 2-10)								
802888								

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: EL

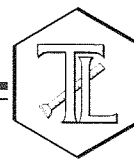
Lab # 802818

Date Delivered: 07/24/12 Time: 2:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.5°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc..)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☒ N/A
12. Were samples pH checked? pH = See C. of C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Stuebner

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

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, 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.

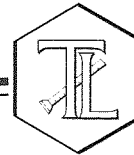
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


to - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

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

Laboratory No.: 802941

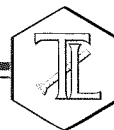
Date: August 13, 2012

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



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

Laboratory No.: 802941

Date Received: July 31, 2012

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:

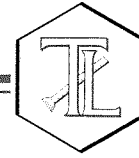
Results below 0.01ppm will have two (2) significant figures.

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

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

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 802941

Page 1 of 8

Printed 8/14/2012

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

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-372	802941-001	07/31/2012 10:30	Water

Specific Conductivity - EPA 120.1

Batch 08EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802941-001 Specific Conductivity	umhos/cm	08/03/2012	1.00	0.116	2.00	7400

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 803005-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	813	813	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	702	706	99.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	981	998	98.3	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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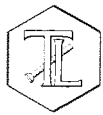
Project Number: 424973.01.DM

Printed 8/14/2012

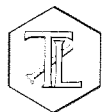
Chrome VI by EPA 218.6

Batch 08CrH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802941-001 Chromium, Hexavalent	ug/L	08/02/2012 16:21	1.00	0.0250	0.20	ND
Method Blank						
Parameter	Unit	DF	Result			
Chromium, Hexavalent	ug/L	1.00	ND			
Duplicate					Lab ID = 802845-011	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.95	1.96	0.332	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.211	0.200	106.	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance 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	Recovery	Acceptance 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	Acceptance 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	Acceptance 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	Acceptance 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	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.81	8.94(5.00)	97.4	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 3 of 8****Project Number: 424973.01.DM****Printed 8/14/2012**

Matrix Spike						Lab ID = 802870-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.97	8.94(5.00)	100.	90 - 110
Matrix Spike						Lab ID = 802870-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.1	15.3(10.0)	98.5	90 - 110
Matrix Spike						Lab ID = 802870-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.96	7.83(5.00)	103.	90 - 110
Matrix Spike						Lab ID = 802870-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.11	6.24(5.00)	97.5	90 - 110
Matrix Spike						Lab ID = 802870-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.14	6.23(5.00)	98.2	90 - 110
Matrix Spike						Lab ID = 802889-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.21	9.24(5.00)	99.5	90 - 110
Matrix Spike						Lab ID = 802889-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.1	15.3(10.0)	98.2	90 - 110
Matrix Spike						Lab ID = 802889-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.983	1.00(1.00)	98.3	90 - 110
Matrix Spike						Lab ID = 802889-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.01	6.18(5.00)	96.6	90 - 110
Matrix Spike						Lab ID = 802889-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	19.1	19.3(10.0)	97.4	90 - 110
Matrix Spike						Lab ID = 802941-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.10	1.11(1.00)	98.4	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.75	5.00	95.1	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/14/2012

Metals by EPA 200.8, Total

Batch 080712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802941-001 Chromium	ug/L	08/07/2012 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

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	RPD	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Recovery	Acceptance Range
Chromium	ug/L	5.00	95.1	100.	95.1	85 - 115
Manganese	ug/L	5.00	95.1	100.	95.1	85 - 115

Matrix Spike

Lab ID = 802941-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.7	100.(100.)	94.7	75 - 125
Manganese	ug/L	5.00	93.7	100.(100.)	93.7	75 - 125

Matrix Spike Duplicate

Lab ID = 802941-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.0	100.(100.)	98.0	75 - 125
Manganese	ug/L	5.00	96.4	100.(100.)	96.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Recovery	Acceptance 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

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Project Number: 424973.01.DM

Printed 8/14/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.86	10.0	98.6	80 - 120

Interference Check 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 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

Batch 08TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802941-001 Total Dissolved Solids	mg/L	08/03/2012	1.00	0.757	250.	4110

Method Blank

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

Duplicate

Lab ID = 802952-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	201	217	7.66	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	486	500.	97.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 8

Project Number: 424973.01.DM

Printed 8/14/2012

Turbidity by SM 2130 B

Batch 08TUC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802941-001 Turbidity	NTU	08/01/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 802941-001

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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.30	8.00	104.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.05	8.00	101.	90 - 110

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	1
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	1
LCS	100	69.5103	69.5589	69.5589	0.0000	No	0.0486	486.0	25.0	486.0	1
802939-1	450	109.0651	109.0669	109.0669	0.0000	No	0.0018	4.0	5.6	ND	1
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	1
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	1
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	1
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	1
803025-2	100	76.5478	76.5725	76.5722	0.0003	No	0.0244	244.0	25.0	244.0	1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	486	500	97.2%	90-110%	Yes
LCS2					

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

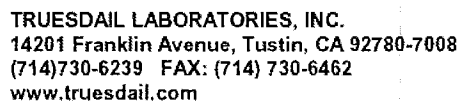
Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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	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



[IM3Plant-WDR-372]

10 Days

DATE 07/31/12

PAGE 1 OF 1

ALERT !!
Level III QC

**For Sample Conditions
See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.6 °C		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
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
8/1/12	802944-4	9.5	N/A	N/A	N/A	MS
	↓ -5					
	↓ -6					
	802945-1					
	↓ -2					
	↓ -3					
	↓ -4					
	↓ -5					
	↓ -6					
	↓ -7					
	↓ -8					
8/1/12	802961	7	2 ml	9.5	9:00 AM	HAY
8/1/12	802964-1	7	2 ml	9.5	18:00	MS
8/2/12	802964-2	7	1 ml	9.5	8:00	MS
	↓ -3				8:10	
	↓ -4				8:20	
8/2/12	802970	9.5	N/A	N/A	N/A	QW
	↓ 802971-1					
	↓ -2					
8/2/12	802972-1	9.5	N/A	N/A	N/A	QW
	↓ -2					
	↓ -3					
8/13/12	803025-1	9.5	N/A	N/A	N/A	HAY
	↓ -2					



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
802889 (1-2, 4-5)	<1	<2	7-30-12	BE	3010A	NO		
802895 (1-2, 4)	<1	>2	↓	↓	NO	14:30		
802908 (1-2)	<1	<2	7-31-12	BE	3010A			
802909 (1-2)	<1	↓	↓	↓	↓			
802910 (1-3, 5-9)	↓	↓	↓	↓	↓			
802911 (1-8, 10)	↓	↓	↓	↓	↓			
802912 (1, 3-11)	↓	↓	↓	↓	↓			
802913 (1-4)	↓	↓	↓	↓	↓			
802906	>1	↓	↓	↓	↓			
802907	↓	↓	↓	↓	↓			
802918-2	↓	↓	↓	↓	↓			
802919	↓	↓	↓	↓	↓			
802920	↓	↓	↓	↓	↓			
802921	↓	↓	↓	↓	↓			
802922	↓	↓	↓	↓	↓			
802923	↓	↓	↓	↓	↓			
802924	↓	↓	↓	↓	↓			
X 802941	<1	>2	8-1-12	BE	3010A	11:00		
802942 (1-8)	↓	<2	↓	↓	↓			7-8 Turbidity >1 8-3-12 13 PH <2 BE
802943 (1-9)	↓	↓	↓	↓	↓			
802944 (1-2, 4-6)	↓	↓	↓	↓	↓			
802945 (1-6, 8)	↓	↓	↓	↓	↓			
802931	↓	>2	↓	↓	NO	11:30	8-5 PH <2 BE	
802939 (1-2)	↓	↓	↓	↓	↓	↓	8-3 PH <2 BE	
802947 (1-2)	↓	↓	↓	↓	↓	↓	↓	
802970	<1	<2	8-2-12	BE	3010A			
802971 (1-2)	↓	↓	↓	↓	↓			
802972 (1-3)	↓	↓	↓	↓	↓			
802951 (10-82)	↓	>2	↓	↓	NO	8:30		
802989	>1	↓	↓	↓	3010A	13:00		
802973	<1	↓	↓	↓	NO	↓	8/7/12 16:00	PH <2
802961 (1-3)	↓	↓	↓	↓	↓	15:00	8/7/12 16:00	PH <2
802966 (1-30)	↓	↓	↓	↓	↓	↓	1-12 8-5 PH <2 BE	
303004 (1-6)	<1	<2	8-3-12	BE	3010A			
803005	↓	↓	↓	↓	↓			
803002	>1	↓	↓	↓	↓			
802994	↓	↓	↓	↓	↓			
803022	↓	↓	↓	↓	↓			
803021	↓	>2	↓	↓	↓	13:30		
803025 (1-2)	<1	<2	↓	↓	↓			
803028	>1	<2	8-5-12	BE	3010A			
803041 (17, 24)	<1	>2	8-7-12	BE	NO	12:30		
803045	>1	<2	↓	↓	3010A			
803046	↓	↓	↓	↓	↓			

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: E 2

Lab # 802941

Date Delivered 7/31/12 Time: 2:00 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.6 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc..)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See COC ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☐ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Staburine

ALERT!!
Level III COC

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample 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 Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	7-2-12	1300	7-2-12	1305	METER #1	7-2-12	00:44	-56.0	RON PHELPS	7.1
Notes:										
SC-701	7-2-12	1315	7-2-12	1318	METER #1	7-2-12	00:44	-56.0	RON PHELPS	7.7
Notes:										
SC-100B	7-2-12	1325	7-2-12	1330	METER #1	7-2-12	00:46	-56.0	RON PHELPS	7.5
Notes:										7.9 RP
SC-700B	7-10-12	1000	7-10-12	1005	METER #1	7-10-12	1:00	-55.5	RON PHELPS	7.1
Notes:										
SC-700B	7-17-12	1000	7-17-12	1004	METER #1	7-17-12	1:00	-55.6	RON PHELPS	7.1
Notes:										
SC-700B	7-24-12	1400	7-24-12	1405	METER #1	7-24-12	1:00	-55.7	CHRIS LENTZ	7.1
Notes:										
SC-700B	7-31-12	1030	7-31-12	1035	METER #1	7-31-12	1:00	-55.5	RON PHELPS	7.2
Notes:										

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

September 4, 2012

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

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.

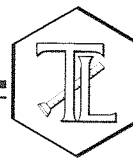
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Attention: Shawn Duffy

Sample: 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.: 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 / Bitia Emami
EPA 218.6	Hexavalent Chromium	George Wahba / maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

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

Laboratory No.: 803084
Date Received: August 7, 2012

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	NTU	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

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



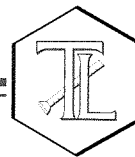
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
803084-002	SC-100B-WDR-373	E120.1	NONE	8/7/2012	10:00	EC	7650	umhos/cm	2.00
803084-002	SC-100B-WDR-373	E200.7	NONE	8/7/2012	10:00	Aluminum	ND	ug/L	10.0
803084-002	SC-100B-WDR-373	E200.7	NONE	8/7/2012	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	NTU	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.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

P.O. Number: 456827.01.DM

Release Number:

Laboratory No. 803084

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Printed 9/4/2012

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	mg/L	08/08/2012 12:33	50.0	5.70	25.0	526.

Method Blank

Parameter	Unit	DF	Result
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate

Lab ID = 803084-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	50.0	499.	500.	0.211	0 - 20

Duplicate

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	3.09	3.13	1.25	0 - 20

Lab 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
Sulfate	mg/L	50.0	1010	1000(500.)	102.	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 prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 456827.01.DM

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Printed 9/4/2012

Matrix Spike

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	23.2	23.1(20.0)	100.	85 - 115

MRCSS - Secondary

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

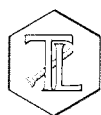
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110

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****Page 3 of 37****Project Number: 456827.01.DM****Printed 9/4/2012**

Anions By I.C. - EPA 300.0		Batch 08AN12I				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Fluoride	mg/L	08/09/2012 15:07	5.00	0.155	0.500	2.15
803084-002 Fluoride	mg/L	08/09/2012 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	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.57	2.59	0.658	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.11	4.00	103.	90 - 110
Matrix Spike					Lab ID = 803084-002	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	22.6	22.6(20.0)	99.9	85 - 115
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.13	4.00	103.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.17	3.00	106.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

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	Analyzed	DF	MDL	RL	Result
803084-001 Nitrite as Nitrogen	mg/L	08/08/2012 12:03	1.00	0.000540	0.0050	ND
803084-002 Nitrite as Nitrogen	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 = 803092-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0293	0.0308	95.1	90 - 110

Matrix Spike

Lab ID = 803092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0201	0.0200(0.0200)	100.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0292	0.0308	94.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0201	0.0200	100.	90 - 110



Client: E2 Consulting Engineers, Inc.

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Alkalinity by SM 2320B

Batch 08ALK12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Alkalinity as CaCO ₃	mg/L	08/08/2012	1.00	0.555	5.00	137
Bicarbonate (Calculated)	mg/L	08/08/2012	1.00	0.555	5.00	137
Carbonate (Calculated)	mg/L	08/08/2012	1.00	0.555	5.00	ND

Method Blank

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

Duplicate

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	136	137	0.733	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	101	100.	101	90 - 110

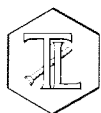
Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	103	100.	103	90 - 110

Matrix Spike

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	236	237(100.)	99.0	75 - 125



Client: E2 Consulting Engineers, Inc.

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Specific Conductivity - EPA 120.1

Batch 08EC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Specific Conductivity	umhos/cm	08/10/2012	1.00	0.116	2.00	7160
803084-002 Specific Conductivity	umhos/cm	08/10/2012	1.00	0.116	2.00	7650

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7650	7650	0.00	0 - 10

Lab Control Sample

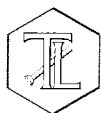
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	700.	706	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	983	998	98.5	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
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Chrome VI by EPA 218.6
Batch 08CrH12M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Chromium, Hexavalent	ug/L	08/10/2012 17:15	1.00	0.0260	0.20	ND
803084-002 Chromium, Hexavalent	ug/L	08/10/2012 17:25	50.0	1.30	10.0	727.

Method Blank

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

Duplicate
Lab ID = 802944-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.49	2.53	1.68	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	96.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.71	5.00	94.3	90 - 110

Matrix Spike
Lab ID = 802944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.99	7.53(5.00)	109.	90 - 110

Matrix Spike
Lab ID = 802944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.12	9.45(5.00)	93.4	90 - 110

Matrix Spike
Lab ID = 802944-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.924	1.00(1.00)	92.4	90 - 110

Matrix Spike
Lab ID = 802944-004

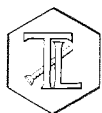
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.69	1.75(1.00)	94.4	90 - 110

Matrix Spike
Lab ID = 802944-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.36	6.56(5.00)	96.0	90 - 110

Matrix Spike
Lab ID = 802944-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.81	1.87(1.00)	93.7	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Matrix Spike

Lab ID = 803005-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.51	1.57(1.00)	93.6	90 - 110

Matrix Spike

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.86	1.96(1.00)	90.2	90 - 110

Matrix Spike

Lab ID = 803025-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.78	1.85(1.00)	93.9	90 - 110

Matrix Spike

Lab ID = 803047-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.27	1.35(1.00)	91.6	90 - 110

Matrix Spike

Lab ID = 803047-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.56	1.63(1.00)	92.6	90 - 110

Matrix Spike

Lab ID = 803083-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.5	16.2(10.0)	93.1	90 - 110

Matrix Spike

Lab ID = 803084-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.08	1.18(1.00)	90.9	90 - 110

Matrix Spike

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1440	1480(750.)	95.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.71	5.00	94.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.83	10.0	98.3	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.89	10.0	98.9	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.83	10.0	98.3	95 - 105


Client: E2 Consulting Engineers, Inc.
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Metals by EPA 200.7, Total		Batch 081612A				
Parameter	Unit	Analyzed	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

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 = 803025-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance 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	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	Recovery	Acceptance Range
Aluminum	ug/L	1.00	103.	100.	103.	85 - 115
Iron	ug/L	1.00	104.	100.	104.	85 - 115
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 = 803025-001

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 9/4/2012

Metals by EPA 200.8, Total		Batch 081912B				
Parameter	Unit	Analyzed	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 Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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
Vanadium	ug/L	1.00	0.988	1.00	98.8	70 - 130



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

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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

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 20 of 37****Project Number: 456827.01.DM****Printed 9/4/2012****Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	9.26	10.0	92.6	80 - 120

Interference Check Standard AB

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

Interference Check Standard AB

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

Serial Dilution

Lab ID = 803005-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	156.	153	2.07	0 - 10

Serial Dilution

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	777.	756	2.70	0 - 10



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 9/4/2012

Metals by EPA 200.8, Total

Batch 082312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Lead	ug/L	08/23/2012 13:00	5.00	0.265	1.0	ND
Molybdenum	ug/L	08/23/2012 13:00	5.00	0.150	5.0	18.3
803084-002 Lead	ug/L	08/23/2012 13:07	5.00	0.265	1.0	ND
Molybdenum	ug/L	08/23/2012 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	RPD	Acceptance 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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Lead	ug/L	5.00	88.0	100.(100.)	88.0	75 - 125
Thallium	ug/L	5.00	83.2	100.(100.)	83.2	75 - 125
Uranium	ug/L	5.00	94.6	104.(100.)	90.6	75 - 125
Molybdenum	ug/L	5.00	101.	104.(100.)	96.2	75 - 125



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 9/4/2012

Metals by EPA 200.8, Total

Batch 082712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Antimony	ug/L	08/27/2012 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 = 803025-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Selenium	ug/L	5.00	87.2	100.	87.2	85 - 115
Antimony	ug/L	5.00	103.	100.	103.	85 - 115

Matrix Spike

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Selenium	ug/L	5.00	83.6	100.(100.)	83.6	75 - 125
Antimony	ug/L	5.00	103	100.(100.)	103	75 - 125

Matrix Spike Duplicate

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Selenium	ug/L	5.00	86.2	100.(100.)	86.2	75 - 125
Antimony	ug/L	5.00	105.	100.(100.)	105.	75 - 125

MRCSS - Secondary

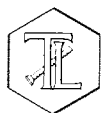
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Selenium	ug/L	1.00	9.27	10.0	92.7	90 - 110
Antimony	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Selenium	ug/L	1.00	9.57	10.0	95.7	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 prior written authorization from Truesdail Laboratories.

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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 200.8, Total

Batch 082112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Manganese	ug/L	08/22/2012 00:42	5.00	0.270	0.50	0.66
803084-002 Manganese	ug/L	08/22/2012 00:50	5.00	0.270	0.50	3.7

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.0946	0.100	94.6	70 - 130

Lab Control Sample

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

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	90.8	100.(100.)	90.8	75 - 125

Matrix Spike Duplicate

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	91.2	100.(100.)	91.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.70	10.0	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.90	10.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.97	10.0	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110


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Printed 9/4/2012
Reactive Silica by SM4500-Si D

Batch 08Si12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Silica	mg/L	08/13/2012	25.0	0.252	1.00	18.5

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 803153-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.206	0.220	93.7	90 - 110

Matrix Spike

Lab ID = 803153-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	1.00	0.340	0.400(0.400)	84.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.114	0.110	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.373	0.400	93.2	90 - 110

Total Dissolved Solids by SM 2540 C

Batch 08TDS12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Total Dissolved Solids	mg/L	08/08/2012	1.00	0.757	250.	4420
803084-002 Total Dissolved 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

Duplicate

Lab ID = 803047-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	306	301	1.65	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	502	500.	100.	90 - 110



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Total Organic Carbon (T/DOC) SM 5310 C		Batch 08TOC12C				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Total Organic Carbon	mg/L	08/08/2012 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	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	2.92	2.96	1.33	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	2.29	2.26	101.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.47	10.0	94.7	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.27	10.0	92.7	90 - 110



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Total Phosphate, SM 4500-PB,E

Batch 08/TP12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Phosphate, Total As P	mg/L	08/13/2012	1.00	0.00650	0.0200	ND

Method Blank

Parameter	Unit	DF	Result
Phosphate, Total As P	mg/L	1.00	ND

Duplicate

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Phosphate, Total As P	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.124	0.130	95.0	90 - 110

Matrix Spike

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0680	0.0650(0.0650)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0614	0.0650	94.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0647	0.0650	99.5	90 - 110



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Ammonia Nitrogen by SM4500-NH3D

Batch 08NH312B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Ammonia as N	mg/L	08/15/2012	1.00	0.00980	0.500	ND
803084-002 Ammonia as N	mg/L	08/15/2012	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	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.61	10.0	96.1	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.93	10.0	99.3	90 - 110

Matrix Spike

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.75	6.23(6.00)	109.	75 - 125

Matrix Spike Duplicate

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	7.35	6.23(6.00)	119.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.25	6.00	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.10	6.00	102.	90 - 110



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Metals by EPA 200.8, Dissolved

Batch 082112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Manganese	ug/L	08/21/2012 23:30	5.00	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	Acceptance Range
Manganese	ug/L	1.00	0.0946	0.100	94.6	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	92.5	100.(100.)	92.5	75 - 125

Matrix Spike Duplicate

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	92.5	100.(100.)	92.5	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.42	10.0	94.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.90	10.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.97	10.0	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110



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Metals by 200.7, Dissolved

Batch 081612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Iron	ug/L	08/16/2012 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	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	114.	100.(100.)	114	75 - 125

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5490	5000	110.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5360	5000	107.	90 - 110

Interference Check Standard A

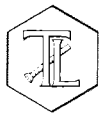
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2230	2000	111.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2290	2000	114.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2210	2000	110.	80 - 120

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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

Batch 08TUC12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-001 Turbidity	NTU	08/08/2012	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	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.55	8.00	107.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.30	8.00	104.	90 - 110

Turbidity by SM 2130 B

Batch 08TUC12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803084-002 Turbidity	NTU	08/08/2012	1.00	0.0140	0.100	0.198

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 803084-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.197	0.198	0.506	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.15	8.00	102.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.03	8.00	100.	90 - 110



TRUESDAIL LABORATORIES, INC.

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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


fo - 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	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	69.5608	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:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where:

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

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

Laboratory Control Sample (LCS) Summary

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

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

054

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc 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

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

[illegible]

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL \text{ sample}} \right)$$

Where:

T = Total Alkalinity, mg CaCO₃/L

P = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

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

Where: **B** = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Blank Summary

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

Laboratory Control Sample (LCS/LCSD) Summary

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

Duplicate Determination Difference Summary

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

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD %Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
803084-2	137	1	100	100	236	237.00	99%	75-125	Yes			
		1	100	100								

Melissa S.

Analyst Printed Name

080812c

Analyst Signature

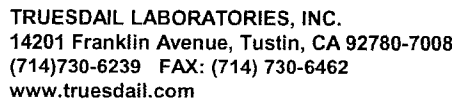
Hope T.

Reviewer Printed Name

Reviewer Signature _____

067

S 803084



[IM3Plant-WDR-373]

TURNAROUND TIME

DATE 8/07/12

PAGE 1 OF 1

ALERT !!
Level III QC

SAMPLE CONDITIONS

RECEIVED COOL ☒ WARM ☐ 3.1 °C

CUSTODY SEALED YES ☐ NO ☒

The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
803047 (1-2)	<1	<2	8-7-12	BE	3010A			
803048 (1-30)	<1	>2			NO	14:00		
803055 (1-6)	>1	>2		BE	3010A	13:00		BE Acidified after sample
803059	>1	<2	8-8-12	BE	3010A			
803083 (1-2)	<1	>2				14:00		BE After Lab filter Acidified
803084 (1-2)	<1	<2				BE		
803084 (2)		>2				14:00		BE Acidified after Lab filter
803063	>1	<2						
803064								
803065								
803066								
803067								
803068								
803069								
803070								
803092 (1-2)								
803060		BE >2 <2				15:00		
803078 (1-2)	<1	>2			NO	15:00		
803080 (1-3)								
803081								
803088 (1-7)								
803114	<1	<2	8-9-12	BE	3010A			
803103	>1							
803105 (10-12)	<1	>2	8/9/12	ES	NO	9:00 AM		
803111 (1-15)	<1	<2						
803112 (1-15)								
80317	>1	<2	8-9-12	BE	3010A			
803143 (1-6) BE	<1	<2	8-10-12	BE	3010A			
803142 (1-6)								
803134	>1							
803135								
803136								
803137								
803139								
803140								
803140								
803159	>1	<2	8-13-12	BE	3010A			
803160								
803161								
803162								
803163								
803164								
803165								
803166								

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 # 803084

Date Delivered: 8/7/12 Time: 4:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.1°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☒ Truesdail ☐ Client ☒ Yes ☐ No ☐ N/A
12. Were samples pH checked? pH = see C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Scaburro

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 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.


to - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

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.: 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



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

Laboratory No.: 803181
Date Received: August 13, 2012

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	E120.1	NONE	8/13/2012	7:00	EC	7400	umhos/cm	2.00
803181-001	SC-700B-WDR-374a	E200.8	NONE	8/13/2012	7:00	Chromium	ND	ug/L	1.0
803181-001	SC-700B-WDR-374a	E200.8	NONE	8/13/2012	7:00	Manganese	1.2	ug/L	0.50
803181-001	SC-700B-WDR-374a	E218.6	LABFLT	8/13/2012	7:00	Chromium, Hexavalent	ND	ug/L	0.20
803181-001	SC-700B-WDR-374a	SM2130B	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

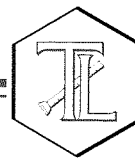
ND: Non Detected (below reporting limit)

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.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 803181

Page 1 of 7

Printed 8/24/2012

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 Conductivity	umhos/cm	08/15/2012	1.00	0.116	2.00	7400

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 803181-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7390	7400	0.135	0 - 10

Lab Control Sample

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	969	998	97.1	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 7

Project Number: 424973.01.DM

Printed 8/24/2012

Chrome VI by EPA 218.6

Batch 08CrH12N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803181-001 Chromium, Hexavalent	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	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	36.6	36.7	0.301	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	96.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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
Page 4 of 7
Project Number: 424973.01.DM
Printed 8/24/2012
Metals by EPA 200.8, Total

Batch 082112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803181-001 Chromium	ug/L	08/22/2012 00:28	5.00	0.195	1.0	ND
Manganese	ug/L	08/22/2012 00:28	5.00	0.270	0.50	1.2

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	92.3	100.	92.3	85 - 115
Manganese	ug/L	5.00	90.7	100.	90.7	85 - 115

Matrix Spike

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	92.9	101.(100.)	91.7	75 - 125
Manganese	ug/L	5.00	90.8	100.(100.)	90.8	75 - 125

Matrix Spike Duplicate

Lab ID = 803025-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	92.9	101.(100.)	91.6	75 - 125
Manganese	ug/L	5.00	91.2	100.(100.)	91.2	75 - 125

MRCCS - Secondary

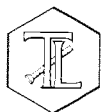
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104.	90 - 110
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.74	10.0	97.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.78	10.0	97.8	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 8/24/2012

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.99	10.0	99.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.30	10.0	93.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.0	10.0	100.	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 08TDS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803181-001 Total Dissolved Solids	mg/L	08/14/2012	1.00	0.757	250.	4280

Method Blank

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

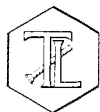
Duplicate

Lab ID = 803142-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1290	1320	2.30	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	493	500.	98.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 7

Project Number: 424973.01.DM

Printed 8/24/2012

Turbidity by SM 2130 B

Batch 08TUC12M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803181-001 Turbidity	NTU	08/14/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 803181-001

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	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.99	8.00	99.9	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.02	8.00	100.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



Br 3 L

Calculations

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

[illegible]

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

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	493	500	98.6%	90-110%	Yes
LCSD					

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12C

Date Analyzed: 8/13/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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





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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-374a]

COC Number

TURNAROUND TIME

10 Days

DATE 08/13/12

PAGE 1 OF 1

803181

COMPANY	E2															COMMENTS
PROJECT NAME	PG&E Topock															
PHONE	(530) 229-3303			FAX			(530) 339-3303									
ADDRESS	155 Grand Ave Ste 1000															
	Oakland, CA 94612															
P.O. NUMBER	456827.01.DM			TEAM			1									
SAMPLERS (SIGNATURE)																
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)					NUMBER OF CONTAINERS	pk = 6 (200.7)		
SC-700B-WDR-374a	08/13/12	7:00	Water	X	X	X	X	X					3			
													3		TOTAL NUMBER OF CONTAINERS	

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	8-13-12 15:30	RECEIVED	COOL <input checked="" type="checkbox"/>
Signature (Received)	Printed Name	Company/Agency	Date/Time	8-13-12 17:30	WARM	<input type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	8-13-12 18:30	CUSTODY SEALED	YES <input type="checkbox"/>
Signature (Received)	Printed Name	Company/Agency	Date/Time	8-13-12 21:30	NO	<input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	8/13/12 21:30	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/Agency	Date/Time			
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

[illegible]

Q 8/17/12

HAN
08/16/12

039



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
803156	>1	>2	8-13-12	BE	TCLP	8:00 AM		after fix
803179	<1	<2	8-14-12	BE	3010A			
803181	↓	>2				10:00 AM		
803188	>1	<2						
803215	<1	72	8/15/12	ES	NO	10:00 AM	8/16/12	pH <2
803194	>1	<2	8-15-12	BE	3010A			
803195	↓							
803196	↓							
803197	↓							
803198	↓							
803199	↓							
803207(1-4)	<1	>2			NO	11:00 AM		
803204	72	<2			3010A			
803229	↓	↓			↓			
803230(1-6)	<1	>2			NO	13:00		
803235(1-2)	>1	<2			3010A			
803249	↓	↓	8-16-12	BE	↓			
803232(4,8-9)	<1	72			NO	10:30		
803227(1-3)	↓							
803237	↓							
803238	↓							
803242	↓							
803250	>1				3010A			
803256	↓	↓			↓	11:00		
803269(1-2)	<1	>2	8-17-12	BE	NO	7:30 AM		
803227 803272	>1	<2			3010A			
803275	↓							
803280	↓							
803281	↓							
803283	↓							
803297	<1	>2			NO	12:30		
803304	<1	>2	8-20-12	BE	3010A	9:30 AM		
803315	<1	<2	8-20-12	ES	3010A	-		
803316(1-15)	<1	<2		↓	-			
803321	<1	72	8/21/12	ES	-	11:00 AM		
803326	>1	<2	8-21-12	BE	3010A			
803327	↓							
803328	↓							
803329	↓							
803330	↓							
803349(1,2)	<1	<2	8-22-12	BE	3010A			
803348(1-5)	<1	<2						
803347(1-3,11)	<1	>2				10:00 AM	Acidified after Lab fix	
803358	>1	<2	8/22/12	ES	3010A			

Notes:

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



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 80381

Date Delivered: 08/13/12 Time: 21:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.3°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda Stalovine

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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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.


Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

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Laboratory No.: 803304

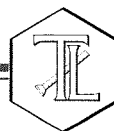
Date: September 11, 2012

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



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

Attention: Shawn Duffy

Laboratory No.: 803304
Date Received: August 17, 2012

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
803304-001	SC-700B-WDR-374b	E120.1	NONE	8/17/2012	14:11	EC	7700	umhos/cm	2.00
803304-001	SC-700B-WDR-374b	E200.8	NONE	8/17/2012	14:11	Chromium	1.2	ug/L	1.0
803304-001	SC-700B-WDR-374b	E200.8	NONE	8/17/2012	14:11	Manganese	1.4	ug/L	1.0
803304-001	SC-700B-WDR-374b	E218.6	LABFLT	8/17/2012	14:11	Chromium, Hexavalent	1.2	ug/L	0.20
803304-001	SC-700B-WDR-374b	SM2130B	NONE	8/17/2012	14:11	Turbidity	0.105	NTU	0.100
803304-001	SC-700B-WDR-374b	SM2540C	NONE	8/17/2012	14:11	Total Dissolved Solids	4650	mg/L	250

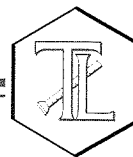
ND: Non Detected (below reporting limit)

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.

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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:

Laboratory No. 803304

Page 1 of 7

Printed 9/11/2012

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	Analyzed	DF	MDL	RL	Result
803304-001 Specific Conductivity	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	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7710	7700	0.130	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	998	98.2	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 7

Project Number: 456827.01.DM

Printed 9/11/2012

Chrome VI by EPA 218.6		Batch 08CrH12P				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803304-001 Chromium, Hexavalent	ug/L	08/23/2012 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	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.284	0.294	3.35	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.186	0.200	92.8	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.1	90 - 110
Matrix Spike					Lab ID = 803304-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	25.7	26.1(25.0)	98.2	90 - 110
Matrix Spike					Lab ID = 803304-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.03(1.00)	95.7	90 - 110
Matrix Spike					Lab ID = 803348-004	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance 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
Page 4 of 7
Project Number: 456827.01.DM
Printed 9/11/2012

Metals by EPA 200.8, Total		Batch 083012A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803304-001 Chromium	ug/L	08/30/2012 22:38	5.00	0.195	1.0	1.2
Manganese	ug/L	08/30/2012 22:38	5.00	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	RPD	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115
Manganese	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike
Lab ID = 803304-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	112.	101.(100.)	111.	75 - 125
Manganese	ug/L	5.00	111.	101.(100.)	110.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.7	10.0	107	90 - 110
Manganese	ug/L	1.00	10.6	10.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.86	10.0	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.95	10.0	99.5	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 9/11/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.5	10.0	105	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.0	10.0	100.	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 08TDS12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803304-001 Total Dissolved 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	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1140	1180	3.10	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	490.	500.	98.0	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 7


Project Number: 456827.01.DM

Printed 9/11/2012

Turbidity by SM 2130 B			Batch 08TUC12M				
Parameter		Unit	Analyzed	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	RPD	Acceptance Range	
Turbidity	NTU	1.00	0.105	0.105	0.00	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Turbidity	NTU	1.00	8.55	8.00	107.	90 - 110	
Lab Control Sample Duplicate							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	1
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	1
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	1
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 =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	490	500	98.0%	90-110%	Yes
LCSD					

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803201-10	0.0588	0.0572	1.4%	≤5%	Yes

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

018

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 08TDS12E

Date Analyzed: 8/16/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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





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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-374b]

803304

COC Number

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

COMPANY	E2	<div>Rec'd 08/17/12 S23d 803304</div> <div>Cr6 (218.6) Lab Filtered Total Metals (200.7) Cr, Mn Specific Conductance (120.1) TDS (SM2540C) Turbidity (SM2130)</div> <div>NUMBER OF CONTAINERS</div>										COMMENTS		
PROJECT NAME	PG&E Topock													
PHONE	(530) 229-3303 FAX (530) 339-3303													
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612													
P.O. NUMBER	456827.01.DM TEAM 1													
SAMPLERS (SIGNATURE)	C. Knight													
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6	Total Metals	Specific Conductance	TDS	Turbidity					NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-374b	08/17/12	14:11	Water	x	x	x	x	x					3	PH = 6 (200.7)
													3	TOTAL NUMBER OF CONTAINERS

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS		
Signature (Relinquished)	C. Knight	Printed Name	C. Knight	Company/ Agency	CH2M HILL	Date/ Time	8-17-12 14:15
Signature (Received)	pt 2	Printed Name	Hipolito	Company/ Agency	TLI	Date/ Time	8-17-12 14:25
Signature (Relinquished)	pt 3	Printed Name	Hipolito	Company/ Agency	TLI	Date/ Time	8-17-12 14:38
Signature (Received)	Shabazz	Printed Name	hinda	Company/ Agency	TLI	Date/ Time	8/17/12 19:50
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

RECEIVED	COOL	<input checked="" type="checkbox"/>	WARM	<input type="checkbox"/>	4.8°C
CUSTODY SEALED	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	
SPECIAL REQUIREMENTS:					

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
↓	↓ -2	↓	↓	↓	↓	↓
08/09/12	803005	9.5	N/A	N/A	N/A	HAV
08/09/12	803114	9.5	N/A	N/A	N/A	HAV
08/10/12	803142-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
8/14/12	803191-1	7	1 ml	9.5	17:00	HG
↓	↓ -2	↓	↓	↓	17:40	↓
8/15/12	803238	7	1 ml	9.5	18:00	HG
8/17/12	803304	7	5 ml / 250 ml	9.5	8 pm	H.L
08/22/12	803347-1	7	2 ml	9.5	8:40 AM	HAV
↓	↓ -2	↓	↓	↓	8:50 AM	↓
↓	↓ -3	↓	↓	↓	8:55 AM	↓
↓	↓ -4	↓	↓	↓	9:05 AM	↓
↓	↓ -5	↓	↓	↓	9:10 AM	↓
↓	↓ -6	↓	↓	↓	9:20 AM	↓
↓	↓ -7	↓	↓	↓	9:25 AM	↓
↓	↓ -8	↓	↓	↓	9:30 AM	↓
↓	↓ -9	↓	↓	↓	9:40 AM	↓
↓	↓ -10	↓	↓	↓	9:50 AM	↓
↓	↓ -11	↓	↓	↓	10:00 AM	↓
08/22/12	803348-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓

8/27/12



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
803156	>1	>2	8-13-12	BE	TCLP	8:00 AM		after fix
803179	<1	<2	8-14-12	BE	3010A			
803181	↓	>2				10:00 AM		
803188	>1	<2						
803215	<1	>2	8/15/12	ES	ND	10:00 AM	8/16/12	pH <2
803194	>1	<2	8-15-12	BE	3010A			
803195	↓	↓	↓	↓	↓			
803196	↓	↓	↓	↓	↓			
803197	↓	↓	↓	↓	↓			
803198	↓	↓	↓	↓	↓			
803199	↓	↓	↓	↓	↓			
803207(1-4)	<1	>2	↓	↓	NO	11:00 AM		
803204	>2	<2	↓	↓	3010A			
803229	↓	↓	↓	↓	↓			
803230(1-6)	<1	>2	↓	↓	NO	13:00		
803235(1-2)	>1	<2	↓	↓	3010A			
803249	↓	↓	8-16-12	BE	↓			
803232(4,8-9)	<1	>2	↓	↓	NO	10:30		
803227(1-3)	↓	↓	↓	↓	↓			
803237	↓	↓	↓	↓	↓			
803238	↓	↓	↓	↓	↓			
803242	↓	↓	↓	↓	↓			
803250	>1	↓	↓	↓	3010A			
803256	↓	↓	↓	↓	↓	11:00		
803269(1-2)	<1	>2	8-17-12	BE	NO	7:30 AM		
803227 803272	>1	<2	↓	↓	3010A			
803275	↓	↓	↓	↓	↓			
803280	↓	↓	↓	↓	↓			
803281	↓	↓	↓	↓	↓			
803283	↓	↓	↓	↓	↓			
803297	<1	>2	↓	↓	NO	12:30		
803304	<1	>2	8-20-12	BE	3010A	9:30 AM		
803315	<1	<2	8-20-12	ES	3010A	-		
803316(1-15)	<1	<2	↓	↓	-			
803321	<1	>2	8/21/12	ES	-	11:00 AM		
803326	>1	<2	8-21-12	BE	3010A			
803327	↓	↓	↓	↓	↓			
803328	↓	↓	↓	↓	↓			
803329	↓	↓	↓	↓	↓			
803330	↓	↓	↓	↓	↓			
803349(1,2)	<1	<2	8-22-12	BE	3010A			
803348(1-15)	<1	<2	↓	↓	↓			
803347(1-3,11)	<1	>2	↓	↓	↓	10:00 AM		Acidified after Lab fix
803358	>1	<2	8/22/12	ES	3010A			

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

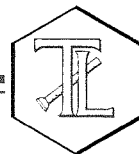
Lab # PD3304

Date Delivered: 08/17/12 Time: 19:50 By: ☐ Mail ☒ Field Service ☐ Client

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

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.

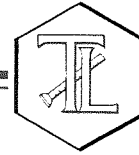
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


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

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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 / Bitia Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav



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

Laboratory No.: 803349
Date Received: August 21, 2012

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



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample 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.

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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:

Laboratory No. 803349

Page 1 of 32

Printed 10/4/2012

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

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-375	803349-001	08/21/2012 13:00	Water
SC-701-WDR-375	803349-002	08/21/2012 13:00	Water

Anions By I.C. - EPA 300.0

Batch 08AN12Q

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-002 Fluoride	mg/L	08/22/2012 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

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	ND	0.218	0	0 - 20

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	ND	0.337	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.30	2.22(2.00)	104.	85 - 115

Matrix Spike

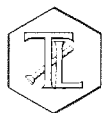
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.42	2.34(2.00)	104.	85 - 115

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 prior written authorization from Truesdail Laboratories.

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

Specific Conductivity - EPA 120.1		Batch 08EC12F				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-001 Specific Conductivity	umhos/cm	08/24/2012	1.00	0.116	2.00	7410
803349-002 Specific Conductivity	umhos/cm	08/24/2012	1.00	0.116	2.00	43800
Method Blank						
Parameter	Unit	DF	Result			
Specific Conductivity	umhos	1.00	ND			
Duplicate						Lab ID = 803348-007
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	891	890.	0.112	0 - 10
Duplicate						Lab ID = 803349-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	43800	43800	0.00	0 - 10
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	709	706	100.	90 - 110
MRCSS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	998	98.2	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	972	998	97.4	90 - 110



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Project Number: 456827.01.DM

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Chrome VI by EPA 218.6		Batch 08CrH12S				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-001 Chromium, Hexavalent	ug/L	08/29/2012 10:34	1.00	0.0250	0.20	0.27
803349-002 Chromium, Hexavalent	ug/L	08/29/2012 12:19	10.0	0.250	2.0	3.0

Method Blank

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

Duplicate

Lab ID = 803349-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.290	0.274	5.84	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	96.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.991	1.00(1.00)	99.1	90 - 110

Matrix Spike

Lab ID = 803347-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.01	9.09(5.00)	98.3	90 - 110

Matrix Spike

Lab ID = 803347-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.58	1.62(1.00)	96.4	90 - 110

Matrix Spike

Lab ID = 803347-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.80	1.80(1.00)	101.	90 - 110



TRUESDAIL LABORATORIES, INC.

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Matrix Spike

Lab ID = 803347-007

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	1.19	1.21(1.00)	98.0

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803347-008

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	1.34	1.34(1.00)	99.9

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803347-009

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	1.27	1.28(1.00)	98.4

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803347-010

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	15.4	15.6(10.0)	97.9

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803347-011

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	1.86	1.87(1.00)	99.2

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	1.26	1.27(1.00)	98.3

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	5.00	8.03	8.08(5.00)	99.0

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	10.0	12.2	13.0(10.0)	91.5

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00

Acceptance Range
90 - 110

Matrix Spike

Lab ID = 803486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery
Chromium, Hexavalent	ug/L	1.00	1.19	1.24(1.00)	95.3

Acceptance Range
90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.8

Acceptance Range
90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.

Acceptance Range
95 - 105



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Metals by EPA 200.7, Total

Batch 082812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-002 Zinc	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	Acceptance 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	Acceptance Range
Iron	ug/L	1.00	102.	100.	102.	85 - 115
Zinc	ug/L	1.00	104.	100.	104.	85 - 115
Boron	ug/L	1.00	99.0	100.	99.0	85 - 115

Matrix Spike

Lab ID = 803304-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	109.	100.(100.)	109.	75 - 125
Zinc	ug/L	1.00	123.	100.(100.)	123.	75 - 125
Boron	ug/L	1.00	2720	2960(2000)	88.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5240	5000	105.	95 - 105
Zinc	ug/L	1.00	5140	5000	103.	95 - 105
Boron	ug/L	1.00	5210	5000	104.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5320	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5130	5000	102.	90 - 110



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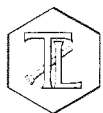
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Metals by EPA 200.8, Total		Batch 082312B				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-002 Mercury	ug/L	08/24/2012 01:03	5.00	0.120	1.0	ND
Method Blank						
Parameter	Unit	DF	Result			
Mercury	ug/L	1.00	ND			
Duplicate					Lab ID = 803304-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Mercury	ug/L	5.00	ND	0.00	0	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	0.180	0.200	89.8	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	5.00	18.8	20.0	93.8	85 - 115
Matrix Spike					Lab ID = 803304-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Mercury	ug/L	5.00	16.2	20.0(20.0)	81.0	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	2.12	2.00	106.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	1.90	2.00	95.1	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	1.93	2.00	96.4	90 - 110
Interference Check Standard A						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	ND	0.00		
Interference Check Standard A						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	ND	0.00		



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Metals by EPA 200.8, Total		Batch 083012A				
Parameter	Unit	Analyzed	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

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	Expected	RPD	Acceptance 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 Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	1.04	1.00	104.	70 - 130
Chromium	ug/L	1.00	0.164	0.200	82.0	70 - 130
Lead	ug/L	1.00	0.182	0.200	90.8	70 - 130
Manganese	ug/L	1.00	0.188	0.200	94.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	110.	100.	110.	85 - 115
Chromium	ug/L	5.00	104.	100.	104.	85 - 115
Lead	ug/L	5.00	111	100.	111	85 - 115
Manganese	ug/L	5.00	104.	100.	104.	85 - 115



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Interference Check Standard AB

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

Interference Check Standard AB

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.5	10.0	105	80 - 120

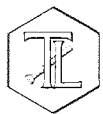
Interference Check Standard AB

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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Metals by EPA 200.8, Total

Batch 090512C

Parameter	Unit	Analyzed	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	RPD	Acceptance 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 Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.127	0.100	127.	70 - 130
Copper	ug/L	1.00	1.05	1.00	105.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	104.	100.	104.	85 - 115
Copper	ug/L	5.00	107.	100.	107.	85 - 115

Matrix Spike

Lab ID = 803304-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	105.	100.(100.)	105.	75 - 125
Copper	ug/L	5.00	103.	100.(100.)	103.	75 - 125

Matrix Spike Duplicate

Lab ID = 803304-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Copper	ug/L	5.00	104.	100.(100.)	104.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.89	10.0	98.9	90 - 110
Copper	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.78	10.0	97.8	90 - 110



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Metals by EPA 200.8, Total

Batch 092012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-002 Antimony	ug/L	09/20/2012 21:30	5.00	0.420	5.0	ND
Nickel	ug/L	09/20/2012 21:30	5.00	0.355	2.0	7.0

Method Blank

Parameter	Unit	DF	Result
Nickel	ug/L	1.00	ND
Antimony	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	0.398	0.400	99.5	70 - 130
Antimony	ug/L	1.00	0.883	1.00	88.3	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	94.6	100.	94.6	85 - 115
Antimony	ug/L	5.00	103.	100.	103.	85 - 115

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Antimony	ug/L	5.00	109.	100.(100.)	109.	75 - 125

Lab ID = 803859-001

Matrix Spike Duplicate

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	99.4	100.(100.)	99.4	75 - 125
Antimony	ug/L	5.00	103.	100.(100.)	103.	75 - 125

Lab ID = 803859-001

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	51.7	50.0	103.	90 - 110
Antimony	ug/L	1.00	52.4	50.0	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	53.0	50.0	106	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	54.6	50.0	109.	90 - 110
Antimony	ug/L	1.00	51.6	50.0	103.	90 - 110



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Client: E2 Consulting Engineers, Inc.

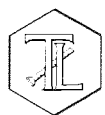
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Metals by EPA 200.8, Total		Batch 092112A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-002 Molybdenum	ug/L	09/21/2012 16:28	5.00	0.150	5.0	148
Method Blank						
Parameter	Unit	DF	Result			
Molybdenum	ug/L	1.00	ND			
Duplicate					Lab ID = 803859-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Molybdenum	ug/L	5.00	20.8	20.3	2.29	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	0.963	1.00	96.3	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	5.00	101.	100.	101.	85 - 115
Matrix Spike					Lab ID = 803859-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Molybdenum	ug/L	5.00	120.	120.(100.)	99.8	75 - 125
Matrix Spike Duplicate					Lab ID = 803859-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Molybdenum	ug/L	5.00	121.	120.(100.)	101.	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	46.6	50.0	93.1	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	52.2	50.0	104.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	53.8	50.0	108.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	52.4	50.0	105.	90 - 110



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Project Name: PG&E Topock Project

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	51.7	50.0	103.	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

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

Interference Check Standard 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



TRUESDAIL LABORATORIES, INC.

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Metals by EPA 200.8, Total		Batch 092712A				
Parameter	Unit	Analyzed	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

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	RPD	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	0.100	0.100	100.	70 - 130
Cadmium	ug/L	1.00	0.196	0.200	98.0	70 - 130
Cobalt	ug/L	1.00	1.00	1.00	100.	70 - 130
Selenium	ug/L	1.00	0.989	1.00	98.9	70 - 130
Thallium	ug/L	1.00	0.208	0.200	104.	70 - 130
Vanadium	ug/L	1.00	0.999	1.00	99.9	70 - 130

**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 Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	5.00	96.7	100.	96.7	85 - 115
Cadmium	ug/L	5.00	96.5	100.	96.5	85 - 115
Cobalt	ug/L	5.00	94.2	100.	94.2	85 - 115
Selenium	ug/L	5.00	94.8	100.	94.8	85 - 115
Thallium	ug/L	5.00	96.4	100.	96.4	85 - 115
Vanadium	ug/L	5.00	92.4	100.	92.4	85 - 115

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

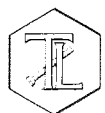
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	19.1	20.0	95.6	90 - 110

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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	18.9	20.0	94.4	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 456827.01.DM

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Printed 10/4/2012

Metals by EPA 200.8, Total		Batch 100212B				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-002 Silver	ug/L	10/02/2012 23:48	5.00	0.125	5.0	ND
Method Blank						
Parameter	Unit	DF	Result			
Silver	ug/L	1.00	ND			
Duplicate					Lab ID = 803980-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silver	ug/L	5.00	ND	0.00	0	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	1.10	1.00	110.	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	5.00	91.0	100.	91.0	85 - 115
Matrix Spike					Lab ID = 803980-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silver	ug/L	5.00	76.0	100.(100.)	76.0	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	21.7	20.0	108.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	20.8	20.0	104.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	20.5	20.0	102.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	20.1	20.0	100.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	20.0	20.0	100.	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 31 of 32****Project Number: 456827.01.DM****Printed 10/4/2012****Interference Check Standard A**

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	23.1	20.0	115.	80 - 120

Interference Check Standard 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	Analyzed	DF	MDL	RL	Result
803349-001 Total Dissolved Solids	mg/L	08/23/2012	1.00	0.757	250.	4790
803349-002 Total Dissolved Solids	mg/L	08/23/2012	1.00	0.757	1250	35100

Method Blank

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

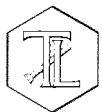
Duplicate

Lab ID = 803357-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1080	1100	1.46	0 - 10.0

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	490.	500.	98.0	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/4/2012

Turbidity by SM 2130 B		Batch 08TUC120				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803349-001 Turbidity	NTU	08/22/2012	1.00	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	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.28	8.00	104.	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.15	8.00	102.	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: 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, ppm	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	1
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 =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	490	500	98.0%	90-110%	Yes
LCSD					

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

051

Total Dissolved Solids by SM 2540 C

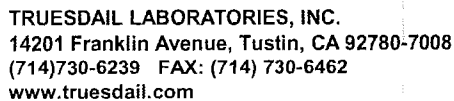
TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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



Rec'd 8/21/12
S 803349



CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-375]

803349

TURNAROUND TIME

10 Days

DATE 08/21/12

PAGE 1 OF 1

[illegible]

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.5 °C		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn		
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
08/22/12	803348-7	9.5	N/A	N/A	N/A	HAV
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
↓	↓ -12	↓	↓	↓	↓	↓
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
08/22/12	803349					
08/22/12	803349-1	7	2 ml	9.5	10:15 AM	HAV
↓	↓ -2	↓	↓	↓	↓	↓
08/23/12	803366-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
08/23/12	803369	9.5	N/A	N/A	N/A	HAV
08/24/12	803405-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
08/29/12	803486	7	2 ml	9.5	9:00 AM	HAV

8/31/12

HAV
08/30/12
099



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
803156	>1	>2	8-13-12	BE	TCLP	8:00 AM		after filter
803179	<1	<2	8-14-12	BE	3010A			
803181	↓	>2				10:00 AM		
803188	>1	<2						
803215	<1	>2	8/15/12	ES	NO	10:00 AM	8/16/12	pH <2
803194	>1	<2	8-15-12	BE	3010A			
803195	↓	↓	↓	↓	↓			
803196	↓	↓	↓	↓	↓			
803197	↓	↓	↓	↓	↓			
803198	↓	↓	↓	↓	↓			
803199	↓	↓	↓	↓	↓			
803207(1-4)	<1	>2	↓	↓	NO	11:00 AM		
803204	>2	<2	↓	↓	3010A			
803229	↓	↓	↓	↓	↓			
803230(1-6)	<1	>2	↓	↓	NO	13:00		
803231(1-2)	>1	<2	↓	↓	3010A			
803249	↓	↓	8-16-12	BE	↓			
803232(4,8-9)	<1	>2	↓	↓	NO	10:30		
803227(1-3)	↓	↓	↓	↓	↓			
803237	↓	↓	↓	↓	↓			
803238	↓	↓	↓	↓	↓			
803242	↓	↓	↓	↓	↓			
803250	>1	↓	↓	↓	3010A			
803256	↓	↓	↓	↓	↓	11:00		
803269(1-2)	<1	>2	8-17-12	BE	NO	7:30 AM		
803272	>1	<2	↓	↓	3010A			
803275	↓	↓	↓	↓	↓			
803280	↓	↓	↓	↓	↓			
803281	↓	↓	↓	↓	↓			
803283	↓	↓	↓	↓	↓			
803297	<1	>2	↓	↓	NO	12:30		
803304	<1	>2	8-20-12	BE	3010A	9:30 AM		
803315	<1	<2	8-20-12	ES	3010A	—		
803316(1-15)	<1	<2	↓	↓	—			
803321	<1	>2	8/21/12	ES	—	11:00 AM		
803326	>1	<2	8-21-12	BE	3010A			
803327	↓	↓	↓	↓	↓			
803328	↓	↓	↓	↓	↓			
803329	↓	↓	↓	↓	↓			
803330	↓	↓	↓	↓	↓			
803349(1,2)	<1	<2	8-22-12	BE	3010A			
803348(1-5)	<1	<2	↓	↓	↓			
803347(1-3,11)	<1	>2	↓	↓	↓	10:00 AM		Acidified after Lab #4
803358	>1	<2	8/22/12	ES	3010A			

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.



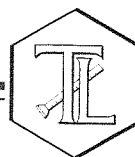
Sample Integrity & Analysis Discrepancy Form

Client: E 2Lab # 803349Date Delivered: 08/21/12 Time: 21:30 By: ☐ Mail ☒ Field Service ☐ Client

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

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.

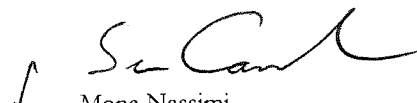
The samples were received and delivered with the chain of custody on August 28, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


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.

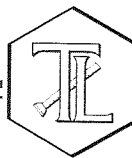
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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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

14201 FRANKLIN AVENUE
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(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

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



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

Laboratory No.: 803486

Date Received: August 28, 2012

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	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:

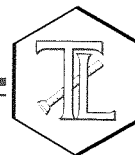
Results below 0.01ppm will have two (2) significant figures.

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:

Laboratory No. 803486

Page 1 of 9

Printed 9/17/2012

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

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-376	803486-001	08/28/2012 13:30	Water

Specific Conductivity - EPA 120.1

Batch 08EC121

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803486-001 Specific Conductivity	umhos/cm	08/30/2012	1.00	0.116	2.00	7300

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 803486-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7300	7300	0.00	0 - 20

Lab Control Sample

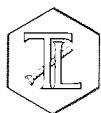
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	982	998	98.4	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 9/17/2012

Chrome VI by EPA 218.6		Batch 08CrH12S					
Parameter	Unit	Analyzed	DF	MDL	RL	Result	
803486-001 Chromium, Hexavalent	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	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	0.290	0.274	5.84	0 - 20	
Low Level Calibration Verification							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	96.9	70 - 130	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	0.991	1.00(1.00)	99.1	90 - 110	
Matrix Spike						Lab ID = 803347-004	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.01	9.09(5.00)	98.3	90 - 110	
Matrix Spike						Lab ID = 803347-005	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	1.58	1.62(1.00)	96.4	90 - 110	
Matrix Spike						Lab ID = 803347-006	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	1.80	1.80(1.00)	101.	90 - 110	



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

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



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 9/17/2012

Metals by EPA 200.8, Total

Batch 091012C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803486-001 Chromium	ug/L	09/11/2012 01:57	5.00	0.195	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 803486-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.234	0.200	117.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.8	100.	98.8	85 - 115

Matrix Spike

Lab ID = 803486-001

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

Matrix Spike Duplicate

Lab ID = 803486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.(100.)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

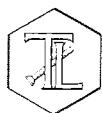
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.8	10.0	108.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 9

Project Number: 456827.01.DM

Printed 9/17/2012

Metals by EPA 200.8, Total

Batch 091212B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803486-001 Manganese	ug/L	09/13/2012 09:38	5.00	0.270	0.50	1.3

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.0936	0.100	93.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	5.00	106.	100.	106.	85 - 115

Matrix Spike

Lab ID = 803486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	106.	101.(100.)	104.	75 - 125

Matrix Spike Duplicate

Lab ID = 803486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	109.	101.(100.)	108.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.87	10.0	98.7	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.97	10.0	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.91	10.0	99.1	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 456827.01.DM

Printed 9/18/2012

Revised

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.89	10.0	98.9	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.36	10.0	93.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Analyzed	DF	MDL	RL	Result
803486-001 Total Dissolved Solids	mg/L	08/29/2012	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	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4350	4160	4.46	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	488	500.	97.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9

Project Number: 456827.01.DM

Printed 9/17/2012

Turbidity by SM 2130 B

Batch 08TUC12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803486-001 Turbidity	NTU	08/29/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 803486-001

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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.50	8.00	106.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.35	8.00	104.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 08TDS12G

Date Analyzed: 8/29/12

[illegible]

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 Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	488	500	97.6%	90-110%	Yes
LCS2					

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

A = Weight of the first sample in (g)

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

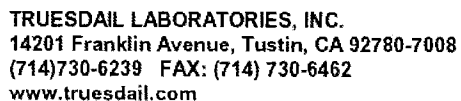
Reviewer Printed Name

Reviewer Signature _____

TDS/EC CHECK

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

[illegible]




[IM3Plant-WDR-376]

TURNAROUND TIME

10 Days

DATE 08/28/12

PAGE 1 OF 1

COMPANY		E2		<div style="text-align: right;"> Rec'd 08/28/12 803486 S24d </div>												COMMENTS					
PROJECT NAME		PG&E Topock																			
PHONE		(530) 229-3303																FAX		(530) 339-3303	
ADDRESS		155 Grand Ave Ste 1000																Oakland, CA 94612			
P.O. NUMBER		456827.01.DM																TEAM		1	
SAMPLERS (SIGNATURE)						<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> NUMBER OF CONTAINERS </div>															
SAMPLE I.D.		DATE		TIME		DESCRIPTION		<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> Cr6 (218.6) Lab Filtered Total Metals (200.7) Cr, Mn Specific Conductance (120.1) TDS (SM2540C) Turbidity (SM2130) </div>													
SC-700B-WDR-376		08/28/12		1330		Water		<div style="display: flex; justify-content: space-between;"> <div> X X X X X X </div> <div> 3 </div> <div> PH=6 (200.7) </div> </div>													
														<div style="border: 1px solid black; padding: 5px; display: inline-block;">5</div> TOTAL NUMBER OF CONTAINERS							

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.6°C		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
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
08/22/12	803348-7	9.5	N/A	N/A	N/A	HAV
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
↓	↓ -12	↓	↓	↓	↓	↓
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
08/22/12	803349					
08/22/12	803349-1	7	2 ml	9.5	10:15 AM	HAV
↓	↓ -2	↓	↓	↓	↓	↓
08/23/12	803366-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
08/23/12	803369	9.5	N/A	N/A	N/A	HAV
08/24/12	803405-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
08/29/12	803486	7	2 ml	9.5	9:00 AM	HAV

8/31/12

HAV
08/30/12
043



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
803340(1-3)	<1	>2	8-22-12	BE	NO	12:00	8-23-12	PH<2
803342-1	↓	↓	↓	↓	↓			
803357(1-2)	>1	<2	↓	↓	3010A			
803366(1-11)	<1	<2	8-23-12	BE	3010A			
803369	↓	↓	↓	↓	↓			
803368(1-2)	↓	↓	↓	↓	↓			
803364(1-12)	<1	>2	↓	↓	NO			
803365(1-7)	↓	↓	↓	↓	↓	13:00	8-27-12	PH<2
803370	↓	↓	↓	↓	↓		8-27-12	PH<2
803371	↓	↓	↓	↓	↓		↓	↓
803374(1-5)	↓	↓	↓	↓	↓			
803376(1-2)	↓	↓	↓	↓	↓			
803381(1-5)	↓	↓	↓	↓	↓			
803382	>1	<2	↓	↓	3010A			
803383	↓	↓	↓	↓	↓			
803392	<1	↓	↓	↓	↓	15:00	8-27-12	200ml Acidified PH<2
803402(1-20)	<1	>2	8-27-12	BE	NO	8:00	8-28-12	PH<2
803403(1-5)	↓	<2	↓	↓	3010A			
803405(1-2)	↓	↓	↓	↓	↓			
803445	>1	<2	8-28-12	BE	3010A			
803446	↓	↓	↓	↓	↓			
803453	<1	>2	↓	↓	NO	11 AM	T _D	
803468	↓	<2	↓	↓	3010A	8:00 AM	8-29-12	PH<2
803482	>1	↓	↓	↓	↓			
803463	↓	↓	↓	↓	↓			
803465	↓	↓	↓	↓	↓			
803466	↓	↓	↓	↓	↓			
803467	↓	↓	↓	↓	↓			
803486	<1	>2	8-29-12	BE	3010A	8:00 AM		
803515	>1	>2	↓	↓	↓	14:00		
803494(1-2)	↓	<2	↓	↓	↓			
803524(1-21)	<1	>2	↓	↓	NO	15:00	8-30	<2 EX-293, 10 Bi
803518(1-3)	↓	↓	↓	↓	↓			
803519(1-3)	↓	↓	↓	↓	↓			
803555(1-3)	<1	>2	8-30-12	BE	NO	14:00	8/31/12	PH<2
803561(1-5)	↓	↓	↓	↓	↓			
803578	<1	<2	9/4/12	ES	YES	3010A		
803579	↓	↓	↓	↓	↓	↓		
803580	↓	↓	↓	↓	↓	↓		
803583	↓	↓	↓	↓	↓	↓		
803584(1-15)	<1	<2	9/4/12	ES	NO	—		
803589	<1	<2	↓	↓	YES	3010A		
803590	<1	<2	↓	↓	↓	3010A		
803591	<1	<2	↓	↓	↓	3010A		

Notes:

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



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 Lab # 803486

Date Delivered: 08/28/12 Time: 21:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.6°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc..)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Shearman

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample 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 Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	8-7-12	10:00	8-7-12	10:04	METER #1	8-7-12	00:50	-55.7	RON HELPS	7.1

Notes:

SC-100B	8-7-12	10:00	8-7-12	10:06	METER #1	8-7-12	00:50	-55.7	RON HELPS	7.4
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Notes:

SC-700B	8-13-12	7:00	8-13-12	7:05	METER #1	8-13-12	1:15	-55.3	RON HELPS	7.2
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Notes:

SC-700B	8-17-12	14:11	8-17-12	14:15	METER #1	8-17-12	13:04	-55.3	C. Knight	7.4
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Notes:

SC-700B	8-21-12	13:00	8-21-12	13:05	METER #1	8-21-12	01:00	-55.3	CHRIS LENTZ	7.5
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Notes:

SC-701	8-21-12	13:00	8-21-12	13:05	METER #1	8-21-12	01:00	-55.3	CHRIS LENTZ	7.7
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Notes:

SC-700B	8-28-12	1330	8-28-12	1335	METER #1	8-28-12	01:00	-55.2	RON HELPS	7.1
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Notes:

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

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.

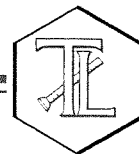
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


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
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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

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

Laboratory No.: 803609
Date Received: September 4, 2012

Attention: Shawn Duffy

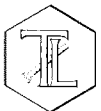
Project Name: PG&E Topock Project
Project No.: 456827.01.DM
P.O. No.: 456827.01.DM

Analytical Results Summary

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

004

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



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample 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 CaCO ₃)	145	mg/L	5.00
803609-002	SC-100B-WDR-377	SM2320B	NONE	9/4/2012	14:55	Alkalinity, Carbonate (As CaCO ₃)	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)
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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Established 1931

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

P.O. Number: 456827.01.DM

Release Number:

Laboratory No. 803609

Page 1 of 40

Printed 10/3/2012

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	Analyzed	DF	MDL	RL	Result
803609-001 Fluoride	mg/L	09/05/2012 12:05	5.00	0.155	0.500	2.06
Nitrate as Nitrogen	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 Nitrogen	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

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

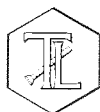
Lab ID = 803599-016

Parameter	Unit	DF	Result	Expected	RPD	Acceptance 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	RPD	Acceptance 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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 40

Project Number: 456827.01.DM

Printed 10/3/2012

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.93	4.00	98.3	90 - 110
Fluoride	mg/L	1.00	4.12	4.00	103.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

Matrix Spike

Lab ID = 803599-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	25.0	154.	156.(100.)	98.2	85 - 115
Sulfate	mg/L	25.0	99.9	99.2(50.0)	101.	85 - 115

Matrix Spike

Lab ID = 803609-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	22.9	22.5(20.0)	102.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	24.0	23.1(20.0)	104.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.96	4.00	99.0	90 - 110
Fluoride	mg/L	1.00	4.14	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.2	20.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.02	4.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.97	3.00	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.97	3.00	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.15	3.00	105	90 - 110



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Project Number: 456827.01.DM

Printed 10/3/2012

Nitrite SM 4500-NO2 B

Batch 09NO212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Nitrite as Nitrogen	mg/L	09/05/2012 18:17	1.00	0.000540	0.0050	ND
803609-002 Nitrite as Nitrogen	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 = 803609-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0280	0.0308	90.9	90 - 110

Matrix Spike

Lab ID = 803609-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0197	0.0200(0.0200)	98.5	85 - 115

MRCCS - Secondary

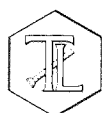
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0281	0.0308	91.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200	98.0	90 - 110



Client: E2 Consulting Engineers, Inc.

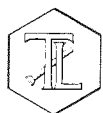
Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/3/2012

Alkalinity by SM 2320B		Batch 09ALK12A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-002 Alkalinity as CaCO ₃	mg/L	09/05/2012	1.00	0.555	5.00	145
Bicarbonate (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 CaCO ₃	mg/L	1.00	ND			
Duplicate					Lab ID = 803607-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	99.0	100.	1.00	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	101	100.	101	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	99.0	100.	99.0	90 - 110
Matrix Spike					Lab ID = 803607-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	202	200.(100.)	102	75 - 125



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Specific Conductivity - EPA 120.1

Batch 09EC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Specific Conductivity	umhos/cm	09/07/2012	1.00	0.116	2.00	7250
803609-002 Specific Conductivity	umhos/cm	09/07/2012	1.00	0.116	2.00	7600

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 803609-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7590	7600	0.132	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	704	706	99.7	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	986	998	98.8	90 - 110



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Chrome VI by EPA 218.6

Batch 09CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Chromium, Hexavalent	ug/L	09/07/2012 13:29	1.00	0.0250	0.20	ND
803609-002 Chromium, Hexavalent	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	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.07	1.51	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	100.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.91	1.91(1.00)	100.	90 - 110

Matrix Spike

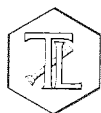
Lab ID = 803606-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.6	15.6(10.0)	99.9	90 - 110



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Matrix Spike

Lab ID = 803607-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.21	1.19(1.00)	102.	90 - 110

Matrix Spike

Lab ID = 803608-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.8	16.8(10.0)	99.9	90 - 110

Matrix Spike

Lab ID = 803609-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.18	1.19(1.00)	98.9	90 - 110

Matrix Spike

Lab ID = 803609-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1760	1760(1000)	99.6	90 - 110

Matrix Spike

Lab ID = 803629-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.56	7.42(5.00)	103.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.92	5.00	98.3	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

MRCVS - Primary

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



TRUESDAIL LABORATORIES, INC.

Report Continued

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Printed 10/3/2012

Metals by EPA 200.7, Total

Batch 091012A-Th2

Parameter	Unit	Analyzed	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	RPD	Acceptance 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	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2180	2000	109.	85 - 115
Iron	ug/L	1.00	2130	2000	107.	85 - 115
Zinc	ug/L	1.00	2090	2000	104.	85 - 115
Boron	ug/L	1.00	2040	2000	102.	85 - 115

Matrix Spike

Lab ID = 803607-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2020	2000(2000)	101.	75 - 125
Iron	ug/L	1.00	2030	2000(2000)	102.	75 - 125
Zinc	ug/L	1.00	2070	2000(2000)	104.	75 - 125
Boron	ug/L	1.00	2180	2110(2000)	103.	75 - 125

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Metals by EPA 200.8, Total

Batch 091912A

Parameter	Unit	Analyzed	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

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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Arsenic	ug/L	5.00	97.3	100.	97.3	85 - 115
Beryllium	ug/L	5.00	92.0	100.	92.0	85 - 115
Chromium	ug/L	5.00	102.	100.	102.	85 - 115
Manganese	ug/L	5.00	98.8	100.	98.8	85 - 115

Matrix Spike

Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	93.2	100.(100.)	93.2	75 - 125
Beryllium	ug/L	5.00	93.4	100.(100.)	93.4	75 - 125
Chromium	ug/L	5.00	98.0	100.(100.)	98.0	75 - 125
Manganese	ug/L	5.00	97.9	100.(100.)	97.9	75 - 125



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Matrix Spike Duplicate

Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	96.1	100.(100.)	96.1	75 - 125
Beryllium	ug/L	5.00	87.9	100.(100.)	87.9	75 - 125
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Manganese	ug/L	5.00	90.9	100.(100.)	90.9	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.2	10.0	102.	90 - 110
Beryllium	ug/L	1.00	9.98	10.0	99.8	90 - 110
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110
Manganese	ug/L	1.00	9.76	10.0	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.34	10.0	93.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.49	10.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.57	10.0	95.7	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.83	10.0	98.3	90 - 110
Beryllium	ug/L	1.00	9.20	10.0	92.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	9.20	10.0	92.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	9.32	10.0	93.2	90 - 110



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Metals by EPA 200.8, Total

Batch 091312A

Parameter	Unit	Analyzed	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	RPD	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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
Vanadium	ug/L	1.00	1.09	1.00	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	108.	100.	108.	85 - 115
Uranium	ug/L	5.00	104.	100.	104.	85 - 115
Vanadium	ug/L	5.00	109.	100.	109.	85 - 115

Matrix Spike

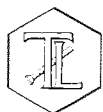
Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	204.	207(100.)	97.2	75 - 125
Uranium	ug/L	5.00	100.0	100.(100.)	100.0	75 - 125
Vanadium	ug/L	5.00	104.	100.(100.)	104.	75 - 125

Matrix Spike Duplicate

Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	206.	207(100.)	98.9	75 - 125
Uranium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Vanadium	ug/L	5.00	99.4	100.(100.)	99.4	75 - 125



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Metals by EPA 200.8, Total		Batch 092112A				
Parameter	Unit	Analyzed	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
803609-002 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

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

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	1.00	0.240	0.200	120.	70 - 130
Thallium	ug/L	1.00	0.256	0.200	128.	70 - 130
Molybdenum	ug/L	1.00	0.963	1.00	96.3	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	5.00	106.	100.	106.	85 - 115
Thallium	ug/L	5.00	103.	100.	103.	85 - 115
Molybdenum	ug/L	5.00	114	100.	114	85 - 115

Matrix Spike

Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Lead	ug/L	5.00	102	100.(100.)	102	75 - 125
Thallium	ug/L	5.00	99.0	100.(100.)	99.0	75 - 125
Molybdenum	ug/L	5.00	115.	106.(100.)	109.	75 - 125

Matrix Spike Duplicate

Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Lead	ug/L	5.00	93.8	100.(100.)	93.8	75 - 125
Thallium	ug/L	5.00	92.8	100.(100.)	92.8	75 - 125
Molybdenum	ug/L	5.00	107.	106.(100.)	102.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Lead	ug/L	1.00	45.8	50.0	91.5	90 - 110
Thallium	ug/L	1.00	45.0	50.0	90.1	90 - 110
Molybdenum	ug/L	1.00	46.6	50.0	93.1	90 - 110


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Printed 10/3/2012
Metals by EPA 200.8, Total
Batch 092712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Copper	ug/L	09/27/2012 22:40	5.00	0.235	5.0	ND
Manganese	ug/L	09/27/2012 22:40	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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	5.00	89.1	100.	89.1	85 - 115
Manganese	ug/L	5.00	89.7	100.	89.7	85 - 115

Matrix Spike
Lab ID = 803607-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Copper	ug/L	5.00	94.0	100.(100.)	94.0	75 - 125
Manganese	ug/L	5.00	93.8	100.(100.)	93.8	75 - 125

Matrix Spike Duplicate
Lab ID = 803607-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Copper	ug/L	5.00	94.3	100.(100.)	94.3	75 - 125
Manganese	ug/L	5.00	95.4	100.(100.)	95.4	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	19.0	20.0	95.0	90 - 110
Manganese	ug/L	1.00	19.0	20.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	20.4	20.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	19.2	20.0	96.2	90 - 110



Client: E2 Consulting Engineers, Inc.

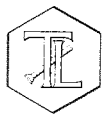
Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/3/2012

Metals by EPA 200.8, Total		Batch 100112A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Antimony	ug/L	10/01/2012 16:08	5.00	0.420	2.0	ND
803609-002 Antimony	ug/L	10/01/2012 16:15	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	RPD	Acceptance Range
Antimony	ug/L	5.00	ND	0.00	0	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	0.492	0.400	123.	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	5.00	115.	100.	115.	85 - 115
Matrix Spike				Lab ID = 803607-001		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	112.	100.(100.)	112.	75 - 125
Matrix Spike Duplicate				Lab ID = 803607-001		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	119.	100.(100.)	119.	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	19.9	20.0	99.6	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	20.2	20.0	101.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	20.4	20.0	102.	90 - 110
Interference Check Standard A						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	ND	0.00		

Client: **E2 Consulting Engineers, Inc.**Project Name: **PG&E Topock Project**

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Project Number: **456827.01.DM**

Printed 10/3/2012

Metals by EPA 200.8, Total

Batch 100212B

Parameter	Unit	Analyzed	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

Parameter	Unit	DF	Result
Nickel	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	0.470	0.400	117.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	108.	100.	108.	85 - 115

Matrix Spike

Lab ID = 803607-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	103.	100.(100.)	103.	75 - 125

Matrix Spike Duplicate

Lab ID = 803607-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	109.	100.(100.)	109.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	21.7	20.0	108.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	21.6	20.0	108	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	21.8	20.0	109	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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



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Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	22.7	20.0	114.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	23.7	20.0	119.	80 - 120

Reactive Silica by SM4500-Si D

Batch 09Si12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-002 Silica	mg/L	09/11/2012	100	1.01	4.00	19.4

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 803645-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.228	0.220	104.	90 - 110

Matrix Spike

Lab ID = 803645-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	1.00	0.344	0.400(0.400)	85.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.120	0.110	109.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.418	0.400	104.	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 31 of 40****Project Number: 456827.01.DM****Printed 10/3/2012****Total Dissolved Solids by SM 2540 C**

Batch 09TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Total Dissolved Solids	mg/L	09/06/2012	1.00	0.757	250.	4070
803609-002 Total Dissolved 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

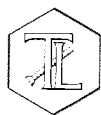
Duplicate

Lab ID = 803609-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4580	4360	4.92	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	504	500.	101.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/3/2012

Total Organic Carbon (T/DOC) SM 5310 C

Batch 09TOC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-002 Total Organic Carbon	mg/L	09/07/2012 14:44	1.00	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	Acceptance Range
Total Organic Carbon	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Total Organic Carbon	mg/L	1.00	8.42	10.0(10.0)	84.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	3.06	3.22	95.1	85 - 115

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.35	10.0	93.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.80	10.0	98.0	90 - 110



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/3/2012

Total Organic Carbon (T/DOC) SM 5310 C

Batch 09TOC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Total Organic Carbon	mg/L	09/24/2012 14:11	1.00	0.0309	0.300	ND
Method Blank						
Parameter	Unit	DF	Result			
Total Organic Carbon	mg/L	1.00	ND			
Duplicate						Lab ID = 803609-001
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	ND	0.00	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	3.00	3.22	93.2	90 - 110
Matrix Spike						Lab ID = 803609-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	8.31	10.0(10.0)	83.1	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	3.03	3.22	94.2	85 - 115
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.66	10.0	96.6	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.52	10.0	95.2	90 - 110



Client: E2 Consulting Engineers, Inc.

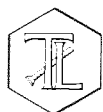
Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/3/2012

Total Phosphate, SM 4500-PB,E		Batch 09TP12A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-002 Phosphate, Total As P	mg/L	09/07/2012	1.00	0.00650	0.0200	ND
Method Blank						
Parameter	Unit	DF	Result			
Phosphate, Total As P	mg/L	1.00	ND			
Duplicate					Lab ID = 803607-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0640	0.0699	8.81	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.140	0.130	108.	90 - 110
Matrix Spike					Lab ID = 803607-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.138	0.135(0.0650)	106.	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0688	0.0650	106.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0644	0.0650	99.1	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 35 of 40****Project Number: 456827.01.DM****Printed 10/3/2012****Ammonia Nitrogen by SM4500-NH3D**

Batch 09NH312B

Parameter	Unit	Analyzed	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

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	8.61	8.00	108.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	8.02	8.00	100.	90 - 110

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.37	6.00	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.43	6.00	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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

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Project Number: 456827.01.DM

Printed 10/3/2012

Metals by EPA 200.8, Dissolved		Batch 091912A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-002 Manganese	ug/L	09/19/2012 14:44	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 = 803605-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance 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 Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
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	Acceptance Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115
Manganese	ug/L	5.00	98.8	100.	98.8	85 - 115
Matrix Spike					Lab ID = 803605-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	107.	100.(100.)	107.	75 - 125
Manganese	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Matrix Spike Duplicate					Lab ID = 803605-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Manganese	ug/L	5.00	97.0	100.(100.)	97.0	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110
Manganese	ug/L	1.00	9.76	10.0	97.6	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.42	10.0	94.2	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/3/2012

Metals by 200.7, Dissolved

Batch 091012A-Th2

Parameter	Unit	Analyzed	DF	MDL	RL	Result
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	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2130	2000	107.	85 - 115

Matrix Spike

Lab ID = 803605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	117.	100.(100.)	117.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5080	5000	102.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5230	5000	104.	90 - 110

MRCVS - Primary

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

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2140	2000	107.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2210	2000	110.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2120	2000	106.	80 - 120



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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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 B

Batch 09TUC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803609-001 Turbidity	NTU	09/05/2012	1.00	0.0140	0.100	ND
803609-002 Turbidity	NTU	09/05/2012	1.00	0.0140	0.100	0.153

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 803607-001

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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.33	8.00	104.	90 - 110

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.83	8.00	97.9	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


to - Mona Nassimi
Manager, Analytical Services

E2 SC 12



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	1
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
803608-1	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	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	504	500	100.8%	90-110%	Yes
LCSD					

LCS Recovery

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

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

Duplicate Determinations Difference Summary

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

Duplicate Determination Difference

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

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

A = Weight of the first sample in (g).
B = Weight of the second sample in (g).
C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	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
803608--1	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





Calculations

Analytical Batch:	09ALK12A
Matrix:	Water
Date of Analysis:	9/5/12

[illegible]

Calculations as follows:

T or P =

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

Where:

T = Total Alkalinity, mg CaCO₃/L

P = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

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

Where: B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Blank Summary

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

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	%Recovery	Acceptance Limit	QC Within Control?
LCS	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	Acceptance Limit	QC Within Control?
803807	100	99	1.0%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

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

Melissa S.

Analyst Printed Name
090512a

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature _____

065

7

Rec'd 9/04/12
S 803609



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

[IM3Plant-WDR-377]

803609

COC Number

TURNAROUND TIME

10 Days

DATE 9/04/12

PAGE 1 OF 1

COMPANY	CH2M HILL /E2																				
PROJECT NAME	PG&E Topock IM3																				
PHONE	530-229-3303	FAX	530-339-3303																		
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																				
P.O. NUMBER	456827.01.DM																				
SAMPLERS (SIGNATURE)	<i>C. Knight</i>																				
SAMPLE I.D.	DATE	TIME	DESCRIPTION																		
SC-700B-WDR-377	9/04/12	13:19																			
SC-100B-WDR-377	9/04/12	14:55																			
<div>ALERT!!</div> <div>Level III QC</div> <div>For Sample Conditions</div> <div>See Form Attached</div>				Cr(VI) (218.6) Lab Filtered	Alkalinity (2320-B)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Total P (4500-P)	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Dissolved Metals (200.7) Fe, Mn lab filtered	Soluble Silica - Reactive (4500-Si CorD)	NO2 (4500-NO2B)	NUMBER OF CONTAINERS	COMMENTS			
				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	pH = 2 (200.7)	
				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	10	pH = 2 / pH = 7 (200.7) / (200.70)	
																	14	TOTAL NUMBER OF CONTAINERS			

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>C. Knight</i>	Printed Name	C. Knight	Company/ Agency	CH2M HILL	Date/ Time	9-4-12 15:30
Signature (Received)	<i>Rafael Davila</i>	Printed Name	Rafael	Company/ Agency	T.L.I	Date/ Time	9-4-12 15:30
Signature (Relinquished)	<i>Rafael Davila</i>	Printed Name	Rafael	Company/ Agency	T.L.I	Date/ Time	9-4-12 23:00
Signature (Received)	<i>Shirley Brown</i>	Printed Name	Shirley	Company/ Agency	T.L.I	Date/ Time	9/4/12 23:00
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED COOL ☒ WARM ☐ 4.8 °C
CUSTODY SEALED YES ☐ NO ☒

SPECIAL REQUIREMENTS:

The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

HAY
09/05/12



Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
T/D	803605(1-4)	<1	<2	9-5-12	BE	3010A			
	803606(1-2)								
	803607								
	803608(1-2)								
T	803609(1-2)		<2						
D	803609-2		>2				BE 9:51 AM		
	803608(1-2)	<1	72	9-5-12	ES	3010A			After Fil Acidified
	803602	<1	72			NO	4:30 PM	9-10	PH < 2
	803603(17,24)	<1	72						
	803604		<2			3010A	-		
	803611						-		
	803614		72			NO	4:30 PM	9-10	PH < 2
	803617		<2			3010A			
	615(1-3)		>2			-	4:30 PM	9-10	PH < 2
	618(10-12)		72			-	4:30 PM		
	619		<2			3010A			
	803629	<1	<2	9-6-12	BE	3010A			
	803628(1-2)								
	803645	<1							
	803659(1-3)	<1	>2			NO	18:30	9-10	PH < 2
	803651								
	803662	>1	<2			3010A			
	803666						17:00	9-10	PH < 2
	803667(1-7)	<1	<2	9-7-12	BE	3010A			
	803668	<1							
	803676	<1	<2						
	803677								
	803682	>1	<2						
	803678								
	803691	>1	<2	9-10-12	BE	3010A			
	803693								
	803708	<1	>2	9-11-12	BE	NO	8:30	9-13-12	PH < 2
	803707		<2			3010A			
	803715		>2			NO	12:00	79D Acidified after Fil	PH < 2
	803710		<2			3010A			
	803711								
	803712(1-3)		72			NO	14:00		
	803712-2	>2				3010A		BE 9-11-12	
	803749(1-4)	<1	<2	9-12-12	BE	3010A			
	803751(1-4)								
	803750		>2						
	803725	<1	<2						
	803726	>1							
	803727								

Notes:

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



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 Lab # 803609

Date Delivered: 09/04/12 Time: 23:00 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.8°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☒ Client
12. Were samples pH checked? pH = See c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std

15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: H. Claiborne

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

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.

for Sean Carle
Mona Nassimi
Manager, Analytical Services

Michael Ngo
Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

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
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Laboratory No.: 803750

Date: October 2, 2012

Collected: September 11, 2012

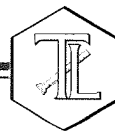
Received: September 11, 2012

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	Bitu Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav

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

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

Attention: Shawn Duffy

Laboratory No.: 803750

Date Received: September 11, 2012

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	E120.1	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	E200.8	NONE	9/11/2012	14:00	Manganese	1.9	ug/L	0.50
803750-001	SC-700B-WDR-378	E218.6	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	SM2540C	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.

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.

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www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 456827.01.DM

P.O. Number: 456827.01.DM

Release Number:

Laboratory No. 803750

Page 1 of 7

Printed 10/2/2012

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

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-378	803750-001	09/11/2012 14:00	Water

Specific Conductivity - EPA 120.1

Batch 09EC12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803750-001 Specific Conductivity	umhos/cm	09/14/2012	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	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7270	7260	0.138	0 - 10

Lab Control Sample

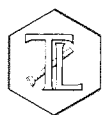
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	702	706	99.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	698	706	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	973	998	97.5	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 2 of 7****Project Number: 456827.01.DM****Printed 10/2/2012****Chrome VI by EPA 218.6**

Batch 09CrH12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803750-001 Chromium, Hexavalent	ug/L	09/12/2012 13:42	1.00	0.0250	0.20	0.35

Method Blank

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

Duplicate

Lab ID = 803749-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	38.0	38.1	0.123	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	100.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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/Added	Recovery	Acceptance 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

Page 4 of 7

Project Number: 456827.01.DM

Printed 10/2/2012

Metals by EPA 200.8, Total		Batch 092612A				
Parameter	Unit	Analyzed	DF	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	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Chromium	ug/L	5.00	98.5	100.	98.5	85 - 115
Manganese	ug/L	5.00	100.	100.	100.	85 - 115

Matrix Spike

Lab ID = 803750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.5	100.(100.)	99.5	75 - 125
Manganese	ug/L	5.00	101	102.(100.)	99.1	75 - 125

Matrix Spike Duplicate

Lab ID = 803750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Manganese	ug/L	5.00	103.	102.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Chromium	ug/L	1.00	18.9	20.0	94.6	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 7

Project Number: 456827.01.DM

Printed 10/2/2012

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 Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	20.4	20.0	102.	80 - 120

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 2540 C

Batch 09TDS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803750-001 Total Dissolved 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	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4400	4120	6.57	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	494	500.	98.8	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 7


Project Number: 456827.01.DM

Printed 10/2/2012

Turbidity by SM 2130 B		Batch 09TUC12E				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803750-001 Turbidity	NTU	09/13/2012	1.00	0.0140	0.100	ND
Method Blank						
Parameter	Unit	DF	Result			
Turbidity	NTU	1.00	ND			
Duplicate					Lab ID = 803750-001	
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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.39	8.00	105.	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.30	8.00	104.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services



Calculations

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

[illegible]

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

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec.	Acceptance Limit	QC Within Control?
LCS1	494	500	98.8%	90-110%	Yes
LCSD					

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803750	0.041	0.044	3.5%	≤5%	Yes

Duplicate Determination Difference

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

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

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

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

C = Average weight ln (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature _____

~~018~~

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

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

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
803712-1	1733	0.54	1126.45	0.83
803712-2	958	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





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(714)730-6239 FAX: (714) 730-6462
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-378]

803750

COC Number

TURNAROUND TIME

10 Days

DATE 09/11/12

PAGE 1 OF 1

COMPANY	E2			<div>Cr6 (218.6) Lab Filtered</div> <div>Total Metals (200.7) Cr, Mn</div> <div>Specific Conductance (120.1) TDS (SM2540C)</div> <div>Turbidity (SM2130)</div> <div>NUMBER OF CONTAINERS</div>												COMMENTS		
PROJECT NAME	PG&E Topock																	
PHONE	(530) 229-3303		FAX														(530) 339-3303	
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																	
P.O. NUMBER	456827.01.DM		TEAM														1	
SAMPLERS (SIGNATURE) <i>C. Knight</i>																		
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6	Total Metals	Specific Conductance	TDS	Turbidity						NUMBER OF CONTAINERS	COMMENTS			
SC-700B-WDR-378	09/11/12	14:00	Water	x	x	x	x	x						3	PH=6(200.7)			
														3	TOTAL NUMBER OF CONTAINERS			

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished) <i>C. Knight</i>	Printed Name <i>C. Knight</i>	Company/Agency <i>CH2M HILL</i>	Date/Time <i>9-11-12 15:30</i>	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> <i>4.3°C</i>
Signature (Received) <i>Rafael Davila</i>	Printed Name <i>Rafael</i>	Company/Agency <i>T-L-E</i>	Date/Time <i>9-11-12 15:30</i>	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Signature (Relinquished) <i>Rafael Davila</i>	Printed Name <i>Rafael</i>	Company/Agency <i>T-L-E</i>	Date/Time <i>9-11-12 21:30</i>	SPECIAL REQUIREMENTS:		
Signature (Received) <i>Shabana</i>	Printed Name <i>Linda</i>	Company/Agency <i>TLE</i>	Date/Time <i>9/11/12 21:30</i>			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

Method EPA 218.6 and SW 7199 Sample pH Log

HAY
09/05/12



Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
T/D	803605(1-4)	<1	<2	9-5-12	BE	3010A			
	803606(1-2)								
	803607								
	803608(1-2)								
T	803609(1-2)		<2						
O	803609-2		>2						After Fil Acidified
	803608(1-2)	<1	>2	9-5-12	ES	3010A			Filter then acidified
	803602	<1	>2			NO	4:30pm	9-10	PH < 2
	803603(17,24)	<1	>2						
	803604		<2			3010A			
	803611								
	803614		>2			NO	4:30pm	9-10	PH < 2
	803613		<2			3010A			
	615(1-3)		>2				4:30pm	9-10	PH < 2
	618(10-12)		>2				4:30pm		
	619		<2			3010A			
	803629	<1	<2	9-6-12	BE	3010A			
	803628(1-2)								
	803643	<1							
	803659(1-3)	<1	>2			NO	16:30	9-10	PH < 2
	803651								
	803662	>1	<2			3010A			
	803666						17:00	9-10	PH < 2
	803667(1-7)	<1	<2	9-7-12	BE	3010A			
	803668	<1							
	803676	<1	<2						
	803677								
	803682	>1	<2						
	803678								
	803691	>1	<2	9-10-12	BE	3010A			
	803693								
	803708	<1	>2	9-11-12	BE	NO	8:30	9-13-12	PH < 2
	803707		<2			3010A			
	803715		>2			NO	12:00	9-10	Acidified after Fil PH < 2
	803710		<2			3010A			
	803711								
	803712(1-3)		>2			NO	14:00		
	803712-2	>2				3010A		BE 9-11-12	
	803749(1-4)	<1	<2	9-12-12	BE	3010A			
	803751(1-4)								
	803750		>2						
	803725	<1	<2						
	803726	>1							
	803727								

Notes:

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



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 803750

Date Delivered: 09/11/12 Time: 2:30 By: ☐ Mail ☒ Field Service ☐ Client

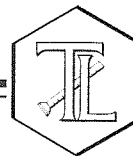
1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.3°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☐ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda Stabury

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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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.

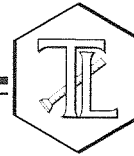
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

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Laboratory No.: 803859

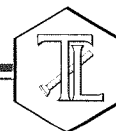
Date: October 2, 2012

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	Bitu Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav



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

Attention: Shawn Duffy

Laboratory No.: 803859
Date Received: September 18, 2012

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
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	E200.8	NONE	9/18/2012	8:48	Chromium	ND	ug/L	1.0
803859-001	SC-700B-WDR-379	E200.8	NONE	9/18/2012	8:48	Manganese	1.4	ug/L	0.50
803859-001	SC-700B-WDR-379	E218.6	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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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:

Laboratory No. 803859

Page 1 of 7

Printed 10/2/2012

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

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7060	7070	0.142	0 - 10

Lab ID = 803859-001

Lab 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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

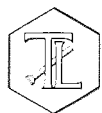
Project Name: PG&E Topock Project
Project Number: 456827.01.DM

Page 2 of 7
Printed 10/2/2012

Chrome VI by EPA 218.6			Batch 09CrH12G			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803859-001 Chromium, Hexavalent	ug/L	09/19/2012 12:05	1.00	0.00920	0.20	0.24
Method Blank						
Parameter	Unit	DF	Result			
Chromium, Hexavalent	ug/L	1.00	ND			
Duplicate						
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.230	0.235	2.19	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	96.8	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.5	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.22	1.24(1.00)	98.4	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.906	1.00(1.00)	90.6	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.05	5.29(5.00)	95.3	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.990	1.00(1.00)	99.0	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.86	5.00(5.00)	97.2	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.928	1.00(1.00)	92.8	90 - 110

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

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

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Metals by EPA 200.8, Total		Batch 092612A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803859-001 Chromium	ug/L	09/26/2012 19:54	5.00	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	Acceptance 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 Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance 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/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.6	100.(100.)	98.6	75 - 125
Manganese	ug/L	5.00	101	101.(100.)	99.6	75 - 125

Matrix Spike Duplicate

Lab ID = 803859-001

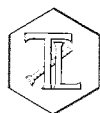
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Manganese	ug/L	5.00	101.	101.(100.)	99.8	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Chromium	ug/L	1.00	18.9	20.0	94.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/2/2012

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 Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	20.4	20.0	102.	80 - 120

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 2540 C

Batch 09TDS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803859-001 Total Dissolved Solids	mg/L	09/19/2012	1.00	0.757	250.	4000

Method Blank

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

Duplicate

Lab ID = 803859-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4180	4000	4.40	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	507	500.	101.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 456827.01.DM

Printed 10/2/2012

Turbidity by SM 2130 B		Batch 09TUC12J				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803859-001 Turbidity	NTU	09/19/2012	1.00	0.0140	0.100	ND
Method Blank						
Parameter	Unit	DF	Result			
Turbidity	NTU	1.00	ND			
Duplicate					Lab ID = 803859-001	
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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.03	8.00	100.	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.00	8.00	100.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



SC E2
4

Calculations

Batch:	09TDS12D
Date Analyzed:	9/21/12

[illegible]

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

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					

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
803859	0.04	0.0418	2.2%	≤5%	Yes

Duplicate Determination Difference

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

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


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

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

C = Average weight in (g).

Jenny T.

Analyst Printed Name



Analyst Signature

Hope T.

Reviewer Printed Name



Reviewer Signature

TDS/EC CHECK

[illegible]

h



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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-379]

803859

COC Number

TURNAROUND TIME

10 Days

DATE 09/18/12

PAGE 1 OF 1

COMPANY E2				<div style="display: flex; justify-content: space-between;"> <div> <p>PROJECT NAME PG&E Topock</p> <p>PHONE (530) 229-3303 FAX (530) 339-3303</p> <p>ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612</p> <p>P.O. NUMBER 456827.01.DM TEAM 1</p> <p>SAMPLERS (SIGNATURE)</p> </div> <div> <p>Rec'd 09/18/12</p> <p>803859</p> </div> <div> <p>NUMBER OF CONTAINERS</p> </div> </div>												COMMENTS											
SAMPLE I.D.																DATE				TIME				DESCRIPTION			
SC-700B-WDR-379																09/18/12				8:48				Water			
x																x				x				x			
x																											
												3				pH=6 (200.7)											
																TOTAL NUMBER OF CONTAINERS											

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 4.5°C
Josh Rosenberg	Josh Rosenberg	CH2M HILL	9-18-12 15:30			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Rafael Davila	Rafael	T.L.I	9-18-12 15:30			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
Rafael Davila	Rafael	T.L.I	9-18-12 21:30			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
Shubunna	Inda	TLI	9/18/12 21:30			
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

[illegible]



TRUESDAIL LABORATORIES, INC.

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	pH2-Adjusted Time	Date/Time of 2nd pH check	Comments
803728	>1	<2	9-12-12	BE	3010A			
803731	<1	>2			NO	12:30	9-13-12	PH < 2
803743(1-3)	↓	↓			↓	↓	9/14/12	pH < 2
803744	>1	<2			3010A			
803745	↓	↓			↓			
803746	↓	↓			↓			
803747	↓	↓			↓			
803748	↓	↓			↓			
803752(1-2)	↓	↓			↓			
803785	<1	>2	9/12/12	ES	NO	9:00am	9/14/12	PH < 2
803776	<1	>2	9/13/12	BE	NO	10:20am	9/17	PH < 2
803779(10-12)	↓	↓			↓	12:00pm	9-17	↓
803795	>1	<2			3010A			
803796	↓	↓			↓			
803809(1-3)	<1	<2	9-14-12	BE	3010A			
803810(1-13)	↓	↓			↓			
803800	>1	↓			↓			
803801	↓	↓			↓			
803802	↓	↓			↓			
803803	↓	↓			↓			
803804	↓	↓			↓			
803805	↓	↓			↓			
803806	↓	↓			↓			
803807	↓	↓			↓			
803808	<1	>2			NO	12:00pm	9-18	PH < 2
803820	↓	<2			3010A			
803819	↓	>2			↓	13:00	9-19	PH < 2
803822	<1	<2	9/17/12	ES	3010A			
803834	>1	↓		BE	↓			
803839	↓	↓	9-18-12	↓	↓			
803843	>1	<2	9-19-12	BZ	3010A			
803844	↓	↓			↓			
803845	↓	↓			↓			
803859	<1	>2			↓			
803860(1-3)	↓	<2			↓			
803861(1-4)	↓	↓			↓			
803862(1-6)	↓	↓			↓			
803849	↓	>2			NO	11:30am	9/24	PH < 2
803856(1-3)	↓	↓			↓	↓	↓	
803867	>1	<2			3010A			
803877(10-12)	<1	>2	9-20-12	BZ	NO	7:30am	9-24	PH < 2
803872	>1	↓		↓	3010A	↓	↓	
803901	>1	<2	9-21-12	BZ	3010A			
803893(1-3)	>1	<2	↓	↓	3010A			

Notes:

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



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

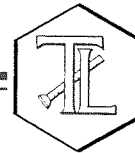
Lab # 803859

Date Delivered: 09/18/12 Time: 2:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.5 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = see c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Sturbeemia

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.

for Sen Carl
Mona Nassimi
Manager, Analytical Services

Michael Ngo
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: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 456827.01.DM

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

Laboratory No.: 803980

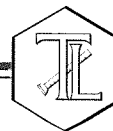
Date: October 4, 2012

Collected: September 25, 2012

Received: September 25, 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	Bitu Emami
EPA 218.6	Hexavalent Chromium	Himani Vaishnav



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

Laboratory No.: 803980

Date Received: September 25, 2012

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.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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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:

Laboratory No. 803980

Page 1 of 6

Printed 10/4/2012

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	Analyzed	DF	MDL	RL	Result
803980-001 Specific Conductivity	umhos/cm	09/26/2012	1.00	0.116	2.00	7130

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 803980-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7140	7130	0.140	0 - 10

Lab Control Sample

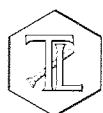
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	702	706	99.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	697	706	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980	998	98.2	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 2 of 6
Project Number: 456827.01.DM
Printed 10/4/2012
Chrome VI by EPA 218.6
Batch 10CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803980-001 Chromium, Hexavalent	ug/L	10/03/2012 15:56	1.00	0.00920	0.20	ND

Method Blank

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

Duplicate
Lab ID = 804101-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.32	6.28	0.581	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.197	0.200	98.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	97.9	90 - 110

Matrix Spike
Lab ID = 803980-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.10	1.14(1.00)	95.3	90 - 110

Matrix Spike
Lab ID = 804101-001

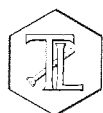
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.0	16.3(10.0)	97.1	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.93	5.00	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.00	10.0	100.0	95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 6

Project Number: 456827.01.DM

Printed 10/4/2012

Metals by EPA 200.8, Total

Batch 092612A

Parameter	Unit	Analyzed	DF	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

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	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.47	1.38	6.45	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Chromium	ug/L	5.00	101	100.	101	85 - 115
Manganese	ug/L	5.00	98.7	100.	98.7	85 - 115

Matrix Spike

Lab ID = 803980-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Manganese	ug/L	5.00	104	101.(100.)	103.	75 - 125

Matrix Spike Duplicate

Lab ID = 803980-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.2	100.(100.)	98.2	75 - 125
Manganese	ug/L	5.00	98.7	101.(100.)	97.3	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance 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	Acceptance Range
Chromium	ug/L	1.00	18.9	20.0	94.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 456827.01.DM

Printed 10/4/2012

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 Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	20.4	20.0	102.	80 - 120

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 2540 C

Batch 09TDS12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
803980-001 Total Dissolved Solids	mg/L	09/26/2012	1.00	0.757	250.	3950

Method Blank

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

Duplicate

Lab ID = 803980-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	3960	3950	0.253	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	503	500.	101.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 6


Project Number: 456827.01.DM

Printed 10/4/2012

Turbidity by SM 2130 B		Batch 09TUC12M				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
803980-001 Turbidity	NTU	09/26/2012	1.00	0.0140	0.100	ND
Method Blank						
Parameter	Unit	DF	Result			
Turbidity	NTU	1.00	ND			
Duplicate						Lab ID = 803980-001
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	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.09	8.00	101.	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.02	8.00	100.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

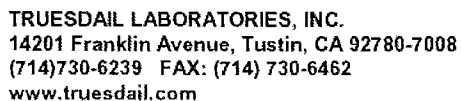
for 
Mona Nassimi
Manager, Analytical Services

TDS/EC CHECK

Batch: 09TDS12E
Date Analyzed: 10/1/12

[illegible]

[Handwritten signature]



[IM3Plant-WDR-380]

TURNAROUND TIME 5 Days
DATE 09/25/12 PAGE 1 OF 1

RUSH

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Chris Knight	Printed Name Chris Knight	Company/ Agency CH2M HILL	Date/ Time 9-25-12 16:30	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 3.80 °C
Signature (Received)	Rafael Davila	Printed Name Rafael	Company/ Agency T.H.I	Date/ Time 9-25-12 16:30	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Rafael Davila	Printed Name Rafael	Company/ Agency T.H.I	Date/ Time 9-25-12 23:30	SPECIAL REQUIREMENTS:	
Signature (Received)	Shebermina	Printed Name Linda	Company/ Agency TLI	Date/ Time 9/25/12 23:30		
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

[illegible]

6/9/28/12

HAN
09127112

043



Turbidity/pH Check

Sample Number	Turbidity	pH BE	Date	Analyst	Need Digest	pH2- Adjusted Time	Date/Time of 2nd pH check	Comments
803894	>1	>2	9-21-12	BE	3010A			3 <2 BE
803895(1-3)	↓	↓	↓	↓	↓			-3PH<2
803892(1-3)	↓	<2	↓	↓	↓			
803943(1-2)	<1	↓	↓	↓	↓			
803904(1-4)	↓	↓	↓	↓	↓			
803905(1-7)	↓	↓	↓	↓	↓			
803914	>1	↓	↓	↓	↓			
803915(1-2+5)	>1 BE	>2	↓	↓	↓			
803908(1-2)	<1	↓	↓	↓	↓			
803943	>1	<2	9-24-12	BE	3010A			
803929	↓	↓	↓	↓	↓			
803903(1-2)	<1	<2	9-24-12	M.M	3010A			
803904(1-2)	↓	↓	↓	↓	↓			
803905(1-7)	↓	↓	↓	↓	↓			
803925	>1	<2	9/24/12	M.M	3010B			
803943	↓	↓	↓	↓	↓			
803963	>1	<2	9-25-12	BE	3010A			
803984	↓	↓	↓	↓	↓			
803985	↓	↓	↓	↓	↓			
803966	↓	↓	↓	↓	↓			
803967	↓	↓	↓	↓	↓			
803980	<1	>2	9-26-12	M.M	3010A			
803981	↓	<2	↓	↓	↓			
803982(4-6)	↓	↓	↓	↓	↓			
803983(1-3)	↓	↓	↓	↓	↓			
803964	>1	<2	9-26-12	M.M	3010A			
803965	↓	↓	↓	↓	↓			
803971(1-3)	<1	>2	9-26-12	BE	NO	15:30	9-27	PH <2
803977	↓	↓	↓	↓	↓		↓	
804011	>1	>2	9-26-12	M.M	3010A	16:00	9-27	PH <2
804012(1-10)	<1	>2	↓	BE	NO	17:15	↓	↓
804010(1-3)	↓	↓	↓	↓	↓		↓	↓
804009(1-9)	↓	↓	↓	↓	↓		↓	↓
804013(1-40)	↓	↓	↓	↓	↓		9-28	PH <2
804015(1-5)	<1	<2	9-27-12	M.M	3010A			
804030(1-3)	<1	<2	9-28-12	M.M	3010A			
804020	<1	<2	10/1/12	ES	3010A			
804024	↓	↓	↓	↓	↓			
804052	↓	↓	↓	↓	↓			
804062	>1	<2	10/2/12	M.M	3010A			
804100	<1	>2	10/03/12	M.M	3010A			
804101(1-2)	<1	>2	↓	↓	↓			
804102(1-3)	<1	<2	↓	↓	↓			
804103(1-9)	↓	↓	↓	↓	↓			

Notes:

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



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 803980

Date Delivered: 09/25/12 Time: 23:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.8 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = see c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☒ RUSH ☐ Std ☐ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Shabazz

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample 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 Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	9-4-12	13:19	9-4-12	13:24	METER #1	9-4-12	01:10	-55.4	C. Knight	7.1

Notes:

SC-100B	9-4-12	14:55	9-4-12	15:07	METER #1	9-4-12	01:10	-55.4	C. Knight	7.3
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Notes:

SC-700B-	9-11-12	14:00	9-11-12	14:11	METER #1	9-11-12	01:00	-54.7	C. Knight	7.2
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Notes:

SC-700B-	9-18-12	08:48	9-18-12	8:56	METER #1	9-18-12	01:00	-54.5	C. Knight	7.4
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Notes:

SC-700B	9-25-12	13:10	9-25-12	13:17	METER #1	9-25-12	01:00	-54.6	C. Knight	7.2
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Notes:

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4