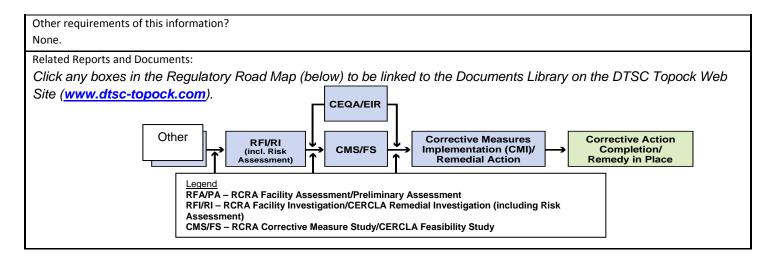
Topock Project Executive Abstract			
Document Title:	Date of Document: July 13, 2012		
Topock IM-3 Second Quarter 2012 Monitoring and	Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other)		
Semiannual January – June 2012 Operation and Maintenance	PG&E		
Report	Document ID Number:		
Submitting Agency/Authored by: U.S. Department of the	PGE20120713A		
Interior and Regional Water Quality Control Board			
Final Document? X Yes No			
Priority Status: HIGH MED LOW	Action Required:		
Is this time critical?	☐ Information Only ☐ Review & Comment		
Type of Document:	Return to:		
☐ Draft ☐ Report ☐ Letter ☐ Memo			
	By Date:		
Other / Explain:	Other / Explain:		
What does this information pertain to?	Is this a Regulatory Requirement?		
Resource Conservation and Recovery Act (RCRA) Facility	∑ Yes		
Assessment (RFA)/Preliminary Assessment (PA)	□ No		
RCRA Facility Investigation (RFI)/Remedial Investigation (RI)	If no, why is the document needed?		
(including Risk Assessment)			
Corrective Measures Study (CMS)/Feasibility Study (FS)			
Corrective Measures Implementation (CMI)/Remedial Action California Environmental Quality Act (CEQA)/Environmental			
Impact Report (EIR)			
☐ Interim Measures			
Other / Explain:			
What is the consequence of NOT doing this item? What is the	Other Justification/s:		
consequence of DOING this item?	Permit Other / Explain:		
Submittal of this report is a compliance requirement of the			
ARARs for waste discharge as documented in Attachment A to			
the Letter Agreement issued July 26, 2011.			
Brief Summary of attached document:			
,			
This report covers the Interim Measures No. 3 (IM-3) groundwat	er treatment system monitoring activities during the Second		
	ells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D,		
	er, as part of the Compliance Monitoring Program. This report also		
covers the IM-3 operation and maintenance activities during the			
Written by: PG&E			
Recommendations:			
This report is for your information only.			
How is this information related to the Final Remedy or Regulatory Requ	irements?		
The Topock IM-3 Second 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 Attacl	- · · · · · · · · · · · · · · · · · · ·		
Colorado River Basin Regional Water Quality Control Board (Regional Wa	·		



Version 9



Curt Russell

Topock Site Manager GT&D Remediation

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July 13, 2012

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Robert Perdue Executive Officer California Regional Water Quality Control Board Colorado River Basin Region 73-720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260

Subject: Topock IM-3 Combined Second Quarter 2012 Monitoring and Semiannual

January – June 2012 Operation and Maintenance Report PG&E Topock Compressor Station, Needles, California Interim Measure No. 3 Groundwater Treatment System

(Document ID: PGE20120713A)

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Second Quarter 2012 Monitoring and Semiannual January – June 2012 Operation and Maintenance 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.

Pamela S. Innis Robert Perdue July 13, 2012 Page 2

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 491,240,485 gallons of water and removed 5,401 pounds of total chromium through June 30, 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.

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 Combined Second Quarter 2012 Monitoring and January – June 2012 Operation and Maintenance 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

Combined Second Quarter 2012 Monitoring and Semiannual January – June 2012 Operation and Maintenance Report

Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20120713A

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

July 13, 2012

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

Combined Second Quarter 2012 Monitoring and January - June 2012 **Operation and Maintenance 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

July 13, 2012

No C68986

This report was prepared under the supervision of a

California Certified Professional Engineer

Dennis Fink, P.E.

Project Engineer

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- A Semiannual Operations and Maintenance Log, January 1, 2012 through June 30, 2012
- B Daily Volumes of Groundwater Treated
- C Flowmeter Calibration Records
- D Second Quarter 2012 Laboratory Analytical Reports

Acronyms and Abbreviations

ARARs Applicable or Relevant and Appropriate Requirements

DOI United States Department of the Interior

gpm gallons per minute

IM Interim Measure

IW injection well

MRP Monitoring and Reporting Program

PG&E Pacific Gas and Electric Company

PST Pacific Standard Time

Regional Water Board Colorado River Basin Regional Water Quality Control Board

RO reverse osmosis

Truesdail Laboratories, Inc.

WDR Waste Discharge Requirements

1.0 Introduction

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

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

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

This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the Second Quarter 2012 and the operation and maintenance activities during the January 1, 2012 to June 30, 2012 semiannual period (First and Second Quarters 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 491,240,485 gallons of water and removed 5,401 pounds of total chromium through June 30, 2012.

This report describes Second Quarter 2012 monitoring activities and the January 1, 2012 through June 30, 2012 (First and Second Quarters) operation and maintenance activities related to the IM-3 groundwater treatment system. IM-3 monitoring activities from January 1, 2012 through March 31, 2012 (First Quarter monitoring) was presented in the following monitoring report:

• Topock IM-3 First Quarter 2012 Monitoring Report, submitted to the DOI and Regional Water Board April 13, 2012.

The present report therefore also serves as the semiannual January through June 2012 Operation and Maintenance Report for IM-3.

3.1 Groundwater Treatment System

The treatment system was initially operated between July 25 and July 28, 2005 for the WDR-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order R7-2004-0103. Full-time operation of the treatment system commenced in August 2005.

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.

Operation of the groundwater treatment system results in the following three effluent streams:

- **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, which occurs either when a sludge waste storage bin reaches capacity, or within 90 days of the start date for accumulation in the storage container, whichever occurs first.

3.2 Groundwater Treatment System Flow Rates for Second Quarter 2012

Downtime is defined as any periods when all extraction wells are not operating so that no groundwater is being extracted and piped into IM-3 as influent. Periods of planned and unplanned extraction system downtime (that together resulted in approximately 5.1 percent downtime during Second Quarter 2012) are summarized in the Semiannual Operations and Maintenance Log provided in Appendix A. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site. Periods of planned and unplanned extraction system downtime during the months January 2012 – March 2012 were originally reported in the First Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System, PG&E Topock Compressor Station, Needles, CA, published April 13, 2012, and are also included in Appendix A of this report.

Data regarding daily volumes of groundwater treated and discharged are provided in Appendix B. The IM-3 groundwater treatment system flowmeter calibration records are included in Appendix C.

3.2.1 Treatment System Influent

During the Second 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 Second Quarter 2012. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 86.1 percent during April 2012
- 98.6 percent during May 2012
- 99.9 percent during June 2012

The Second Quarter 2012 treatment system monthly average flow rates (influent, effluent, and RO 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 IM-3 facility treated approximately 16,670,880 gallons of extracted groundwater during Second Quarter 2012.

In addition to extracted groundwater, during Second Quarter 2012 the IM-3 facility treated 2,340 gallons of water generated from the groundwater monitoring program and 92,100 gallons of injection well development water.

3-2

3.2.2 Effluent Streams

The treatment system effluent flow rate was measured by flow meters in the piping leading to injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11) and in the piping running from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04). The IM-3 facility injected 16,722,554 gallons of treatment system effluent during Second Quarter 2012. The monthly average flow rate to injection wells is shown in Table 2.

The reverse osmosis 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 generated 236,253 gallons of RO concentrate during Second Quarter 2012. The monthly average RO concentrate flow rate is shown in Table 2.

The sludge flow rate is measured by the size and weight of containers shipped offsite. Eight sludge containers were shipped offsite from the IM-3 facility during Second Quarter 2012. The shipment dates and approximate weights are provided in Section 5.3.

3.3 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 Second 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. The Second Quarter 2012 sample collection schedule is shown in Table 3.

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.

4.0 Analytical Results

The analytical results and laboratory reports for the IM-3 groundwater treatment system monitoring program between January 1, 2012 and March 31, 2012 were included in the First Quarter 2012 Monitoring Report submitted to the DOI and Regional Water Board.

Laboratory reports for samples collected in Second Quarter 2012 were prepared by certified analytical laboratories, and are presented in Appendix D. The Second Quarter 2012 analytical results are presented in Tables 4, 5, 6, and 7:

- Influent analytical results are presented in Table 4.
- Effluent analytical results are presented in Table 5. There were no exceedances of effluent limitations during the reporting period.
- Reverse osmosis concentrate analytical results are presented in Table 6.
- Sludge analytical results are presented in Table 7.

The sludge is required to have an aquatic bioassay test annually. The most recent aquatic bioassay test was conducted on a September 2011 sample, and the results were presented in the Third Quarter Monitoring Report submitted to the DOI and the Regional Water Board on October 14, 2011. IM-3 will conduct the 2012 sludge aquatic bioassay test in the second half of the year.

Table 8 identifies the following information for each analysis:

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

5.0 Semiannual Operation and Maintenance

This section includes the Semiannual Operation and Maintenance Report for the IM-3 groundwater treatment system for the period January 1, 2012 through June 30, 2012.

All operations and maintenance records are maintained at the facility, including site inspection forms, process monitoring records, hazardous waste generator records (i.e., waste manifests), and self-monitoring reports. These records will be maintained onsite for a period of at least 5 years. Operational programmable logic controller data (flow rates, system alarms, process monitoring data, etc.) are maintained electronically via data historian software. Operations and maintenance records are also archived using maintenance software. The subsections below summarize the operations and maintenance activities during this semiannual reporting period.

5.1 Flowmeter Calibration Records

The IM-3 groundwater treatment system flowmeter calibration records are included in Appendix C. Flowmeter calibrations are performed in a timely manner consistent with the use, flow, material, and manufacturer recommendations. The following flowmeters are used at the plant to measure groundwater flow:

Location	Flowmeter Location ID	Current Flowmeter Serial No.	Date of Calibration	Date of Installation
Extraction well PE-1	FIT-103	6C037216000	7/15/11	12/13/11
Extraction well TW-3D	FIT-102	6C037116000	7/15/11	12/13/11
Extraction well TW-2D ^a	FIT-101	7700F216000	11/30/06	7/6/11
Extraction well TW-2S ^b	FIT-100	6A022016000	11/29/04	7/28/05
Injection well IW-02	FIT-1202	6C036F16000	8/6/10	1/5/11
Injection well IW-03	FIT-1203	6A022116000	8/6/10	12/15/10
Combined IW-02 and IW-03	FIT-700	7700C616000	7/25/11	12/13/11
Reverse osmosis concentrate	FIT-701	6C037316000	2/26/09	4/1/11

Notes:

5.2 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated between January 1, 2012 and June 30, 2012 are provided in Appendix B. The daily volumes of groundwater treated from January 1, 2012 through March 31, 2012 were reported in the First Quarter 2012 Monitoring Report, submitted April 13, 2012.

^a TW-2D is a backup extraction well only operated for brief testing and sampling periods since January 2006.

^b TW-2S is a backup extraction well only operated for brief testing and sampling periods since October 2005.

Approximately 33,836,772 gallons of groundwater were extracted and treated between January 1, 2012 and June 30, 2012. Treatment of this water at the IM-3 facility is being performed in accordance with the conditions of ARARs.

Additionally, approximately 5,695 gallons of well purge water (generated during well development, monitoring well sampling, and/or aquifer testing) and 109,200 gallons of injection well re-development water were treated at the IM-3 facility during the January 1, 2012 through June 30, 2012 semiannual period.

A total of approximately 33,740,535 gallons of treated groundwater was injected back into the Alluvial Aquifer between January 1, 2012 and June 30, 2012.

5.3 Residual Solids Generated (Sludge)

During the January 1, 2012 through June 30, 2012 reporting period, twelve containers of sludge were shipped offsite for disposal. The sludge was shipped to U.S. Ecology in Beatty, Nevada for disposal. A listing of each shipment during the January 1, 2012 through June 30, 2012 reporting period is provided below.

Date Sludge Bin Removed from Site	Approximate Quantity from Waste Manifests (cubic yards)	Approximate Wet Weight (lbs)	Type of Shipment
1/10/2012	8	14,200	non-RCRA hazardous waste
1/10/2012	8	14,800	non-RCRA hazardous waste
2/22/2012	8	11,880	non-RCRA hazardous waste
2/22/2012	8	14,240	non-RCRA hazardous waste
4/11/2012	8	14,000	non-RCRA hazardous waste
4/11/2012	8	13,260	non-RCRA hazardous waste
5/9/2012	7	12,500	non-RCRA hazardous waste
5/9/2012	7	9,700	non-RCRA hazardous waste
5/16/2012	8	13,500	non-RCRA hazardous waste
5/16/2012	8	16,000	non-RCRA hazardous waste
6/11/2012	7	12,700	non-RCRA hazardous waste
6/11/2012	7	11,100	non-RCRA hazardous waste

Notes:

The approximate wet weight is provided by the disposal facility based on full container weight less the empty container weight.

RCRA = Resource Conservation and Recovery Act.

5.4 Reverse Osmosis Concentrate Generated

Data regarding daily volumes of reverse osmosis concentrate generated are provided in Appendix B, as measured by flowmeter FIT-701 (Figures PR-10-03 and PR-10-04). From January 1, 2012 through June 30, 2012, approximately 483,514 gallons of RO concentrate were transported to Liquid Environmental Solutions in Phoenix, Arizona for disposal.

5-2

5.5 Summary of ARARs Compliance

No ARARs violations were identified during the January 1, 2012 through June 30, 2012 semiannual reporting period.

5.6 Operation and Maintenance – Required Shutdowns

Records of routine maintenance are kept onsite.

Appendix A contains a summary of the operation or maintenance issues that required the groundwater extraction system to be shut down during the January 1, 2012 through June 30, 2012 semiannual reporting period.

Activities during the Second Quarter 2012 included one extended shutdown. The extraction system downtime was 4 days, 1 hour and 52 minutes, and it occurred April 16 – 20, 2012 due to scheduled bi-annual plant maintenance.

5.7 Treatment Plant Modifications

No major IM-3 treatment plant modifications that affected the quality or quantity of treated effluent were performed during the January 1, 2012 through June 30, 2012 semiannual period.

6.0 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, and no new releases of hazardous waste or hazardous waste constituents, or new solid waste management units, were identified during the reporting period.

7.0 Certification

Certification Statement:

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

Signature:	behume
Name:	Curt Russell
Company:	Pacific Gas and Electric Company
Title:	Topock Site Manager
Date:	July 13, 2012



TABLE 1
Sampling Station Descriptions
Second 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
Second 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)
April 2012 Average Monthly Flowrate	115.5	115.2	1.1
May 2012 Average Monthly Flowrate	132.2	133.3	1.2
June 2012 Average Monthly Flowrate	133.8	134.2	3.2

Notes:

gpm: gallons per minute

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

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Second Quarter 2012 is approximately 1.68 percent.

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

Parameter	Sample Collection Dates	Results
Influent	April 3, 2012	See Table 4
	May 1, 2012	
	June 5, 2012	
Effluent	April 3, 2012	See Table 5
	April 10, 2012	
	April 16, 2012	
	April 20, 2012	
	April 24, 2012	
	May 1, 2012	
	May 8, 2012	
	May 15, 2012	
	May 22, 2012	
	May 29, 2012	
	June 5, 2012	
	June 12, 2012	
	June 19, 2012	
	June 26, 2012	
Reverse Osmosis Concentrate	April 3, 2012	See Table 6
Sludge ^a	April 11, 2012	See Table 7
	May 9, 2012	
	May 16, 2012	
	June 11, 2012	

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

Sampling Frequency	uency										Мо	nthly												
	alytes nits ^b	TDS mg/L	Turbidity NTU	Specific Conductance µmhos/cm	Field ^c pH pH units	Chromium µg/L	Hexavalent Chromium µg/L	Aluminium μg/L	Ammonia (as N) mg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Boron mg/L	Copper µg/L	Fluorid mg/L	le Lead μg/L	Manganese μg/L	Molybdenum µg/L		Nitrate (as N) mg/L	, ,	Sulfate mg/L	lron μg/L	Zinc μg/L
Sample ID Date	MDL	0.400	0.0140	0.0950		0.110	1.20	2.80	0.0012	0.120	0.260	0.200	0.0015	0.120	0.155	0.110	0.270	0.150	0.0750	0.135	0.00036	11.4	1.30	3.90
SC-100B-WDR-355 4/3/20	012	4440	0.134	7760	7.2	804	768	ND (50.0)	ND (0.500)	ND (10.0)	3.40	26.0	1.07	ND (5.00)	2.59	ND (10.0)	6.00	20.4	ND (10.0)	3.20 I	ND (0.0050) 543	ND (20.0)	ND (10.0)
RL		250	0.100	2.00		1.00	10.0	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	50.0	20.0	10.0
SC-100B-WDR-359 5/1/20	012	4750	ND (0.100)	7770	7.4	798	777	ND (50.0)	ND (0.500)	ND (5.00)	5.00	25.2	1.07	ND (5.00)	2.61	ND (10.0)	5.50	20.4	ND (10.0)	3.04 I	ND (0.0050) 566	ND (20.0)	ND (10.0)
RL		250	0.100	2.00		1.00	10.0	50.0	0.500	5.00	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	50.0	20.0	10.0
SC-100B-WDR-364 6/5/20	012	4490	ND (0.100)	7700	7.4	747	752	ND (50.0)	ND (0.500)	ND (5.00)	3.40	25.7	0.997	ND (5.00)	2.64	ND (10.0)	4.90	24.2	ND (10.0)	2.99 I	ND (0.0050) 531	ND (20.0)	ND (10.0)
RL		250	0.100	2.00		1.00	10.0	50.0	0.500	5.00	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	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
Second Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent	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
Limits ^b	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
Samplin	ng Frequency			Weekly	,											Monthly								
	Analytes	TDS	Turbidity	Specific Conductand	Field ^e e pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead N	/langanese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
	Units ^c	mg/L	NTU	µmhos/cm	pH units	μg/L	μg/L	μg/L	mg/L	μg/L	μg/L	μg/L	mg/L	μg/L	mg/L	μg/L	μg/L	μg/L	μg/L	mg/L	mg/L	mg/L	μg/L	μg/L
	MDLa	0.400	0.0140	0.0950		0.110	0.0250	14.2	0.0012	0.120	0.260	0.200	0.0015	0.120	0.155	0.110	0.270	0.150	0.0750	0.135	0.00036	5.70	1.30	3.90
Sample ID	Date																							
SC-700B-WDR-355	5 4/3/2012	4430	0.108	7510	7.00	ND (1.00)	ND (0.200)	ND (250)	ND (0.500)	ND (10.0)	ND (1.00)	11.8	1.03	ND (5.00)	2.11	ND (10.0)	3.10	18.9	ND (10.0)	3.06	ND (0.0050)	564	ND (20.0	D) ND (10.0)
RL		250	0.100	2.00		1.00	0.200	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0
SC-700B-WDR-356	6 4/10/2012	4290	ND (0.100)	7350	7.00	ND (1.00)	ND (0.200)										2.40							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-357	7a 4/16/2012	4110	ND (0.100)	7500	7.10	ND (1.00)	ND (1.00)										2.20							
RL		250	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-357I	7b 4/20/2012	4390	0.100	7870	7.10	4.00	2.60										22.2							
RL		250	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-358	8 4/24/2012	4200	ND (0.100)	7370	7.40	ND (1.00)	ND (1.00)										7.90							
RL		250	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-359	9 5/1/2012	4570	ND (0.100)	7460	7.80	1.20	ND (0.200)	ND (50.0)	ND (0.500)	ND (5.00)	ND (1.00)	12.9	1.06	ND (5.00)	2.10	ND (10.0)	4.40	21.6	ND (10.0)	2.84	ND (0.0050)	534	ND (20.0	O) ND (10.0)
RL		250	0.100	2.00		1.00	0.200	50.0	0.500	5.00	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0
SC-700B-WDR-360	0 5/8/2012	4180	0.130	7430	7.30	ND (1.00)	ND (1.00)										4.60							
RL		250	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-361	1 5/15/2012	4070	ND (0.100)	7320	7.30	ND (1.00)	ND (0.200)										6.20							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-362	2 5/22/2012	4230	ND (0.100)	7420	7.20	ND (1.00)	ND (1.00)										3.10							
RL		250	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-363	3 5/29/2012	4530	ND (0.100)	7830	7.30	ND (1.00)	0.270										3.00							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-364	4 6/5/2012	4090	ND (0.100)	7440	7.40	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	ND (5.00)	ND (1.00)	11.4	0.978	ND (5.00)	2.19	ND (10.0)	1.70	19.3	ND (10.0)	3.17	ND (0.0050)	506	ND (20.0	O) ND (10.0)
RL		250	0.100	2.00		1.00	0.200	50.0	0.500	5.00	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0
SC-700B-WDR-365	5 6/12/2012	4080	ND (0.100)	7310	7.10	ND (1.00)	ND (0.200)										1.20							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-366	6 6/19/2012	4050	ND (0.100)	7350	7.10	ND (1.00)	ND (0.200)										4.20							
RL		250	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-367	7 6/26/2012	4200	ND (0.100)	7320	7.10	ND (1.00)	ND (0.200)										1.20							
RL		250	0.100	2.00		1.00	0.200										1.00							

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TABLE 5

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

Effluent Monitoring Results a

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

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TABLE 6

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

Reverse Osmosis Concentrate Monitoring Results ^a

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

Sampling	g Frequency											Quarter	ly										
	Analytes	TDS	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	Units ^D	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample ID	MDL Date	0.400	0.0950		0.00011	0.00026	0.00012	0.00028	0.00020	0.00014	0.00047	0.00048	0.00012	0.155	0.00011	0.0040	0.000075	0.000075	0.00034	0.00018	0.00012	0.00037	0.0039
SC-701-WDR-355	4/3/2012	31200	40300	7.6	0.00350	ND (0.0020)	ND (0.0100)	ND (0.0010	0.0685	ND (0.0010)	ND (0.0030)	ND (0.0050) ND (0.0050) 13.8	ND (0.010	0) 0.113	ND (0.0010)	ND (0.0100	0.0194	ND (0.0050) ND (0.001	0) ND (0.0050) ND (0.0100
RL		1250	2.00		0.0010	0.0020	0.0100	0.0010	0.0100	0.0010	0.0030	0.0050	0.0050	0.500	0.0100	0.0100	0.0010	0.0100	0.0100	0.0050	0.0010	0.0050	0.0100

NOTES:

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

MDL = method detection limit

mg/L = milligrams per liter

ND = parameter not detected at the listed value

RL = project reporting limit

μg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

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

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

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

TABLE 7 Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Sludge Monitoring Results^a

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

Sampling Frequency										Qu	arterly									
Analytes Units b	Chromium mg/kg	Hexavalent Chromium mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Cobalt mg/kg	Copper mg/kg	Fluoride mg/kg	Lead mg/kg	Molybdenum mg/kg	Mercury mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg	
Sample ID C Date	0.0117	0.155	0.0146	0.0196	0.0112	0.00072	0.0136	0.0133	0.0055	0.0310	0.0236	0.0402	0.00015	0.0128	0.0161	0.0222	0.0067	0.0088	0.0194	
SC-Sludge-WDR-355 4/3/2012	7670	60.0	114	ND (6.70)	76.3	ND (2.31)	16.0	ND (6.70)	11.6	30.4	7.52	15.1	0.238	25.2	ND (6.70)	ND (13.4)	ND (6.70)	77.1	88.6	
RL	13.4	5.11	6.70	6.70	6.70	2.31	6.70	6.70	2.68	5.18	6.70	13.4	0.231	6.70	6.70	13.4	6.70	6.70	6.70	

NOTES:

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

ND = parameter not detected at the listed reporting limit

RL = project reporting limit

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

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

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

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

1	0	Sampler	Sample	Sample		Analysis	D	Analysis	Lab
Location	Sample ID	Name	Date	Time	Lab	Method	Parameter	Date	Technician
SC-100B	SC-100B-WDR-355	C.Knight	4/3/2012	2:47:00 PM	TLI	EPA 120.1	SC	4/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	4/12/2012	Ethel Suico
					TLI	EPA 200.7	В	4/12/2012	Ethel Suico
					TLI	EPA 200.7	FE	4/12/2012	Ethel Suico
					TLI	EPA 200.7	MO	4/6/2012	Ethel Suico
					TLI	EPA 200.7	ZN	4/25/2012	Ethel Suico
					TLI	EPA 200.8	AS	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/4/2012	George Wahba/Maksim Gorbunov/Melissa Sc
					TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	4/3/2012	C.Knight
					TLI	SM2130B	TRB	4/4/2012	Gautam Savani
					TLI	SM2540C	TDS	4/4/2012	Kim Luck
					TLI	SM4500NH3D	NH3N	4/5/2012	Bita Emami
					TLI	SM4500NO2B	NO2N	4/4/2012	Maria Mangarova
SC-100B	SC-100B-WDR-359	C.Knight	5/1/2012	3:01:00 PM	TLI	EPA 120.1	SC	5/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	5/24/2012	Ethel Suico
					TLI	EPA 200.7	В	5/24/2012	Ethel Suico
					TLI	EPA 200.7	FE	5/24/2012	Ethel Suico
					TLI	EPA 200.7	FETD	5/24/2012	Ethel Suico
					TLI	EPA 200.7	ZN	5/24/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	6/12/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	6/5/2012	Katia Kiarashpoor

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-359	C.Knight	5/1/2012	3:01:00 PM	TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/5/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/2/2012	George Wahba/Maksim Gorbunov
					TLI	EPA 300.0	FL	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	5/2/2012	Giawad Ghenniwa
					FIELD	HACH	PH	5/1/2012	C.Knight
					TLI	SM 2320B	ALKB	5/1/2012	Melissa Scharfe
					TLI	SM 2320B	ALKC	5/1/2012	Melissa Scharfe
					TLI	SM2130B	TRB	5/2/2012	Gautam Savani
					TLI	SM2540C	TDS	5/4/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	5/7/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	5/2/2012	Jenny Tankunakorn
SC-100B	SC-100B-WDR-364	Ron Phelps	6/5/2012	10:30:00 AM	TLI	EPA 120.1	SC	6/7/2012	Gautam Savani
					TLI	EPA 200.7	AL	6/26/2012	Ethel Suico
					TLI	EPA 200.7	В	6/25/2012	Ethel Suico
					TLI	EPA 200.7	FE	6/22/2012	Ethel Suico
					TLI	EPA 200.7	FETD	6/22/2012	Ethel Suico
					TLI	EPA 200.7	MO	6/25/2012	Ethel Suico
					TLI	EPA 200.7	ZN	6/22/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	6/20/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	РВ	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/6/2012	George Wahba
					TLI	EPA 300.0	FL	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/6/2012	Giawad Ghenniwa
					FIELD	HACH	PH	6/5/2012	Ron Phelps
					TLI	SM 2320B	ALKB	6/12/2012	Melissa Scharfe

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-364	Ron Phelps	6/5/2012	10:30:00 AM	TLI	SM 2320B	ALKC	6/12/2012	Melissa Scharfe
		·			TLI	SM2130B	TRB	6/6/2012	Gautam Savani
					TLI	SM2540C	TDS	6/6/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	6/7/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	6/6/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-355	C.Knight	4/3/2012	2:29:00 PM	TLI	EPA 120.1	SC	4/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	4/12/2012	Ethel Suico
					TLI	EPA 200.7	В	4/12/2012	Ethel Suico
					TLI	EPA 200.7	FE	4/12/2012	Ethel Suico
					TLI	EPA 200.7	MO	4/6/2012	Ethel Suico
					TLI	EPA 200.7	ZN	4/25/2012	Ethel Suico
					TLI	EPA 200.8	AS	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	РВ	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/4/2012	George Wahba/Maksim Gorbunov/Melissa Sch
					TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	4/3/2012	C.Knight
					TLI	SM2130B	TRB	4/4/2012	Gautam Savani
					TLI	SM2540C	TDS	4/4/2012	Kim Luck
					TLI	SM4500NH3D	NH3N	4/5/2012	Bita Emami
					TLI	SM4500NO2B	NO2N	4/4/2012	Maria Mangarova
SC-700B	SC-700B-WDR-356	Chris Lentz	4/10/2012	12:50:00 PM	TLI	EPA 120.1	SC	4/13/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/19/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/12/2012	Melissa Scharfe/Maksim Gorbunov/George Wa
					FIELD	HACH	PH	4/10/2012	Chris Lentz
					TLI	SM2130B	TRB	4/11/2012	Gautam Savani
					TLI	SM2540C	TDS	4/12/2012	Kim Luck

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-357a	C. Knight	4/16/2012	6:06:00 AM	TLI	EPA 120.1	SC	4/18/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/25/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/25/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/17/2012	George Wahba/David Blackbum
					FIELD	HACH	PH	4/16/2012	C.Knight
					TLI	SM2130B	TRB	4/17/2012	Gautam Savani
					TLI	SM2540C	TDS	4/18/2012	Kim Luck
SC-700B	SC-700B-WDR-357b	J.Aide	4/20/2012	1:00:00 PM	TLI	EPA 120.1	SC	4/23/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/25/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/25/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/24/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	4/20/2012	J.Aide
					TLI	SM2130B	TRB	4/20/2012	Kim Luck
					TLI	SM2540C	TDS	4/25/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-358	C.Knight	4/24/2012	2:40:00 PM	TLI	EPA 120.1	SC	4/26/2012	Gautam Savani
					TLI	EPA 200.8	CR	5/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	5/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/27/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	4/24/2012	C.Knight
					TLI	SM2130B	TRB	4/25/2012	Gautam Savani
					TLI	SM2540C	TDS	4/25/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-359	C.Knight	5/1/2012	3:09:00 PM	TLI	EPA 120.1	SC	5/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	5/24/2012	Ethel Suico
					TLI	EPA 200.7	В	5/24/2012	Ethel Suico
					TLI	EPA 200.7	FE	5/24/2012	Ethel Suico
					TLI	EPA 200.7	ZN	5/24/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/5/2012	Katia Kiarashpoor

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-359	C.Knight	5/1/2012	3:09:00 PM	TLI	EPA 218.6	CR6	5/2/2012	George Wahba/Maksim Gorbuno
					TLI	EPA 300.0	FL	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	5/2/2012	Giawad Ghenniwa
					FIELD	HACH	PH	5/1/2012	C.Knight
					TLI	SM2130B	TRB	5/2/2012	Gautam Savani
					TLI	SM2540C	TDS	5/4/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	5/7/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	5/2/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-360	Scott O'Donnell	5/8/2012	2:56:00 PM	TLI	EPA 120.1	SC	5/11/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/9/2012	George Wahba/Maksim Gorbund
					FIELD	HACH	PH	5/8/2012	C.Knight
					TLI	SM2130B	TRB	5/9/2012	Gautam Savani
					TLI	SM2540C	TDS	5/10/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-361	Chris Knight	5/15/2012	3:07:00 PM	TLI	EPA 120.1	SC	5/16/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/16/2012	George Wahba/Maksim Gorbund
					FIELD	HACH	PH	5/15/2012	C.Knight
					TLI	SM2130B	TRB	5/16/2012	Gautam Savani
					TLI	SM2540C	TDS	5/18/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-362	J.Aide	5/22/2012	1:30:00 PM	TLI	EPA 120.1	SC	5/25/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/24/2012	George Wahba/Maksim Gorbund
					FIELD	HACH	PH	5/22/2012	J.Aide
					TLI	SM2130B	TRB	5/23/2012	Gautam Savani
					TLI	SM2540C	TDS	5/24/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-363	Ron Phelps	5/29/2012	2:00:00 PM	TLI	EPA 120.1	SC	5/31/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/30/2012	George Wahba/Maksim Gorbund
					FIELD	HACH	PH	5/29/2012	Ron Phelps

\\Zinfandel\\Proj\\PacificGasElectricCo\TopockProgram\\Database\\Tuesdai\\M3WDR\\M3_WDR_\Qtrly.mdb\\rpt_qtrlySummary_Paramet ers pkumar2 07/09/2012 14:41:14

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TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-363	Ron Phelps	5/29/2012	2:00:00 PM	TLI	SM2130B	TRB	5/30/2012	Gautam Savani
					TLI	SM2540C	TDS	5/30/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-364	Ron Phelps	6/5/2012	10:30:00 AM	TLI	EPA 120.1	SC	6/7/2012	Gautam Savani
					TLI	EPA 200.7	AL	6/26/2012	Ethel Suico
					TLI	EPA 200.7	В	6/25/2012	Ethel Suico
					TLI	EPA 200.7	FE	6/22/2012	Ethel Suico
					TLI	EPA 200.7	MO	6/25/2012	Ethel Suico
					TLI	EPA 200.7	ZN	6/22/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/6/2012	George Wahba
					TLI	EPA 300.0	FL	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/6/2012	Giawad Ghenniwa
					FIELD	HACH	PH	6/5/2012	Ron Phelps
					TLI	SM2130B	TRB	6/6/2012	Gautam Savani
					TLI	SM2540C	TDS	6/6/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	6/7/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	6/6/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-365	Ron Phelps	6/12/2012	10:00:00 AM	TLI	EPA 120.1	SC	6/15/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/16/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/16/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/18/2012	Himani Vaishnav
					FIELD	HACH	PH	6/12/2012	Ron Phelps
					TLI	SM2130B	TRB	6/13/2012	Gautam Savani
					TLI	SM2540C	TDS	6/15/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-366	Ron Phelps	6/19/2012	1:00:00 PM	TLI	EPA 120.1	SC	6/21/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/20/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/20/2012	Katia Kiarashpoor

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

ocation	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-366	Ron Phelps	6/19/2012	1:00:00 PM	TLI	EPA 218.6	CR6	6/20/2012	Himani Vaishnav/Maksim Gorbunov
					FIELD	HACH	PH	6/19/2012	Ron Phelps
					TLI	SM2130B	TRB	6/20/2012	Gautam Savani
					TLI	SM2540C	TDS	6/20/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-367	Ron Phelps	6/26/2012	10:00:00 AM	TLI	EPA 120.1	SC	6/27/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/27/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/27/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/27/2012	Himani Vaishnav
					FIELD	HACH	PH	6/26/2012	Ron Phelps
					TLI	SM2130B	TRB	6/27/2012	Gautam Savani
					TLI	SM2540C	TDS	6/27/2012	Jenny Tankunakorn
SC-701	SC-701-WDR-355	C.Knight	4/3/2012	2:14:00 PM	TLI	EPA 120.1	SC	4/4/2012	Gautam Savani
					TLI	EPA 200.7	MO	4/6/2012	Ethel Suico
					TLI	EPA 200.7	ZN	4/25/2012	Ethel Suico
					TLI	EPA 200.8	AG	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	AS	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BE	4/20/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CD	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CO	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	HG	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SE	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	TL	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	V	4/10/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/4/2012	George Wahba/Maksim Gorbunov/Melissa Sc
					TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	4/3/2012	C.Knight
					TLI	SM2540C	TDS	4/4/2012	Kim Luck
0	SC-Sludge-WDR-355	C.Knight	4/3/2012	1:57:00 PM	TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-355	C.Knight	4/3/2012	1:57:00 PM	TLI	EPA 300.0	NO3N	4/4/2012	Giawad Ghenniwa
					TLI	EPA 6010B	AG	4/12/2012	Ethel Suico
					TLI	EPA 6010B	AS	4/6/2012	Ethel Suico
					TLI	EPA 6010B	BA	4/6/2012	Ethel Suico
					TLI	EPA 6010B	CD	4/6/2012	Ethel Suico
					TLI	EPA 6010B	CO	4/6/2012	Ethel Suico
					TLI	EPA 6010B	CR	4/12/2012	Ethel Suico
					TLI	EPA 6010B	CU	4/26/2012	Ethel Suico
					TLI	EPA 6010B	MN	4/6/2012	Ethel Suico
					TLI	EPA 6010B	MO	4/12/2012	Ethel Suico
					TLI	EPA 6010B	NI	4/6/2012	Ethel Suico
					TLI	EPA 6010B	PB	4/6/2012	Ethel Suico
					TLI	EPA 6010B	SB	4/6/2012	Ethel Suico
					TLI	EPA 6010B	SE	4/6/2012	Ethel Suico
					TLI	EPA 6010B	TL	4/6/2012	Ethel Suico
					TLI	EPA 6010B	V	4/6/2012	Ethel Suico
					TLI	EPA 6010B	ZN	4/6/2012	Ethel Suico
					TLI	SM2540B	MOIST	4/4/2012	Bita Emami
					TLI	SW 6020A	BE	4/18/2012	Katia Kiarashpoor
					TLI	SW 6020A	HG	4/18/2012	Katia Kiarashpoor
					TLI	SW 7199	CR6	4/25/2012	George Wahba

TABLE 8

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

Monitoring Information

alkalinity, bicarb as CaCO3

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

MO =

NOTES:

ALKB =

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).

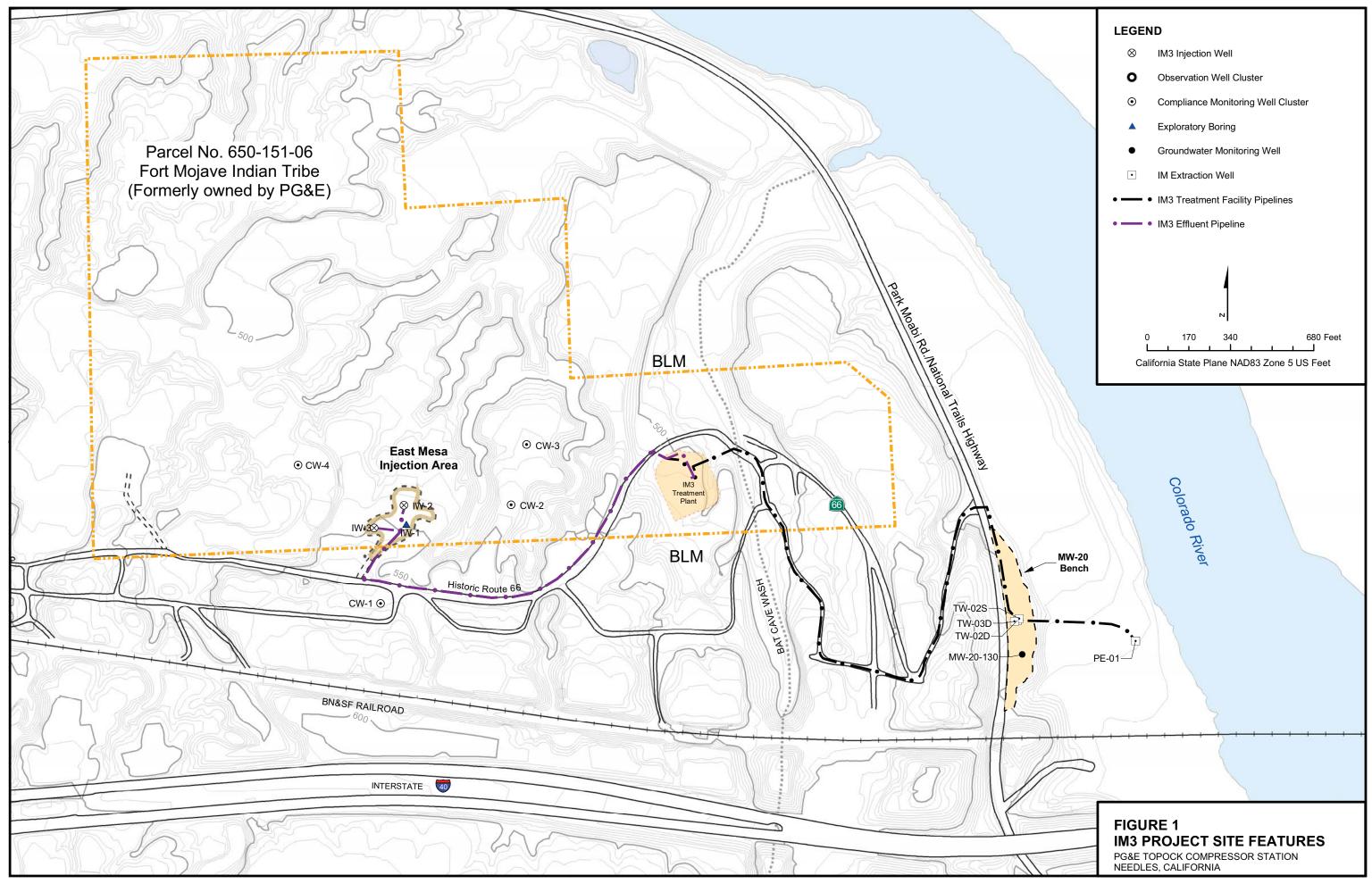
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

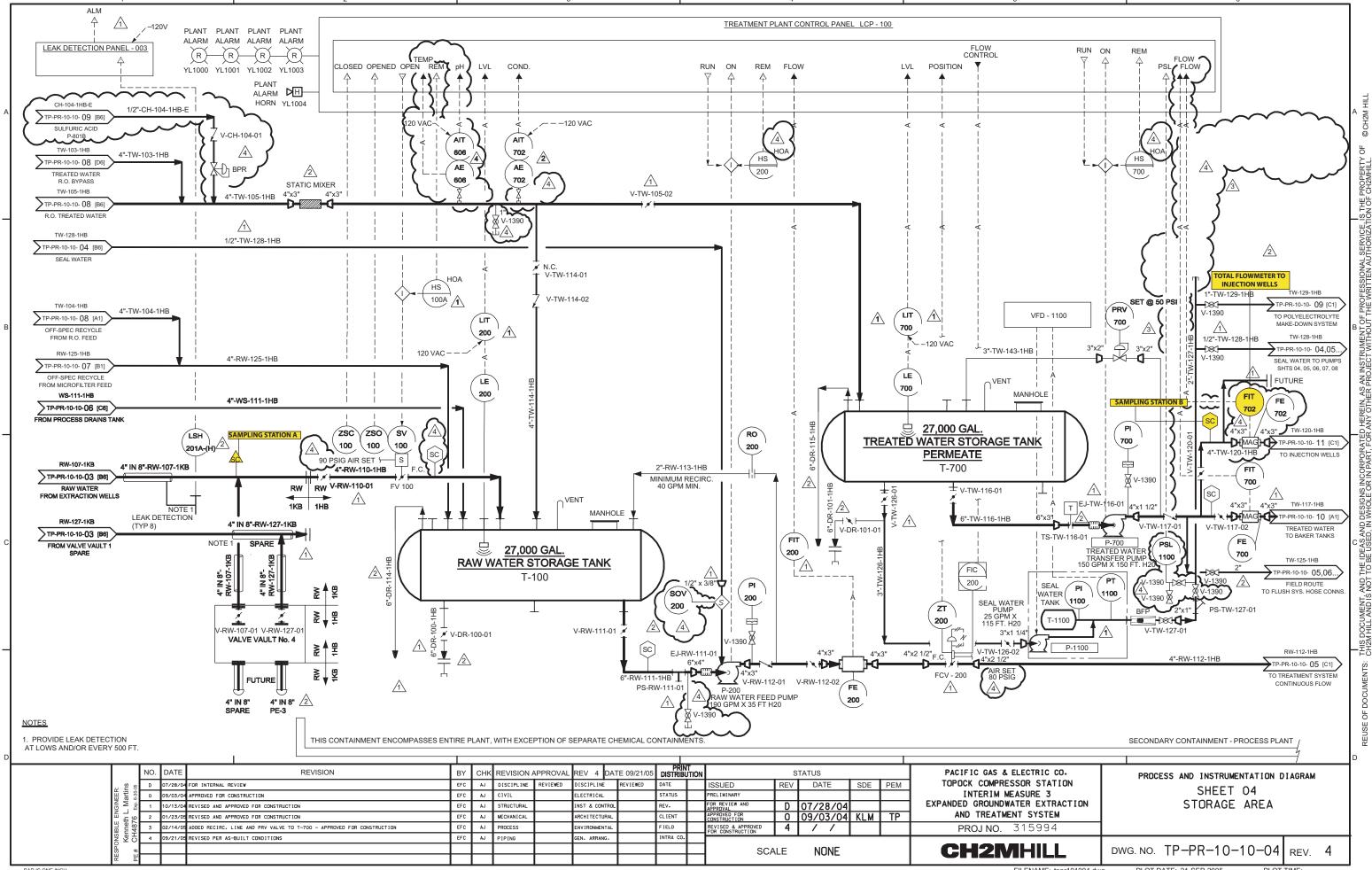
molvbdenum

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.

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







FILENAME: PR-10-03.dgn

PLOT DATE: 11/19/2009

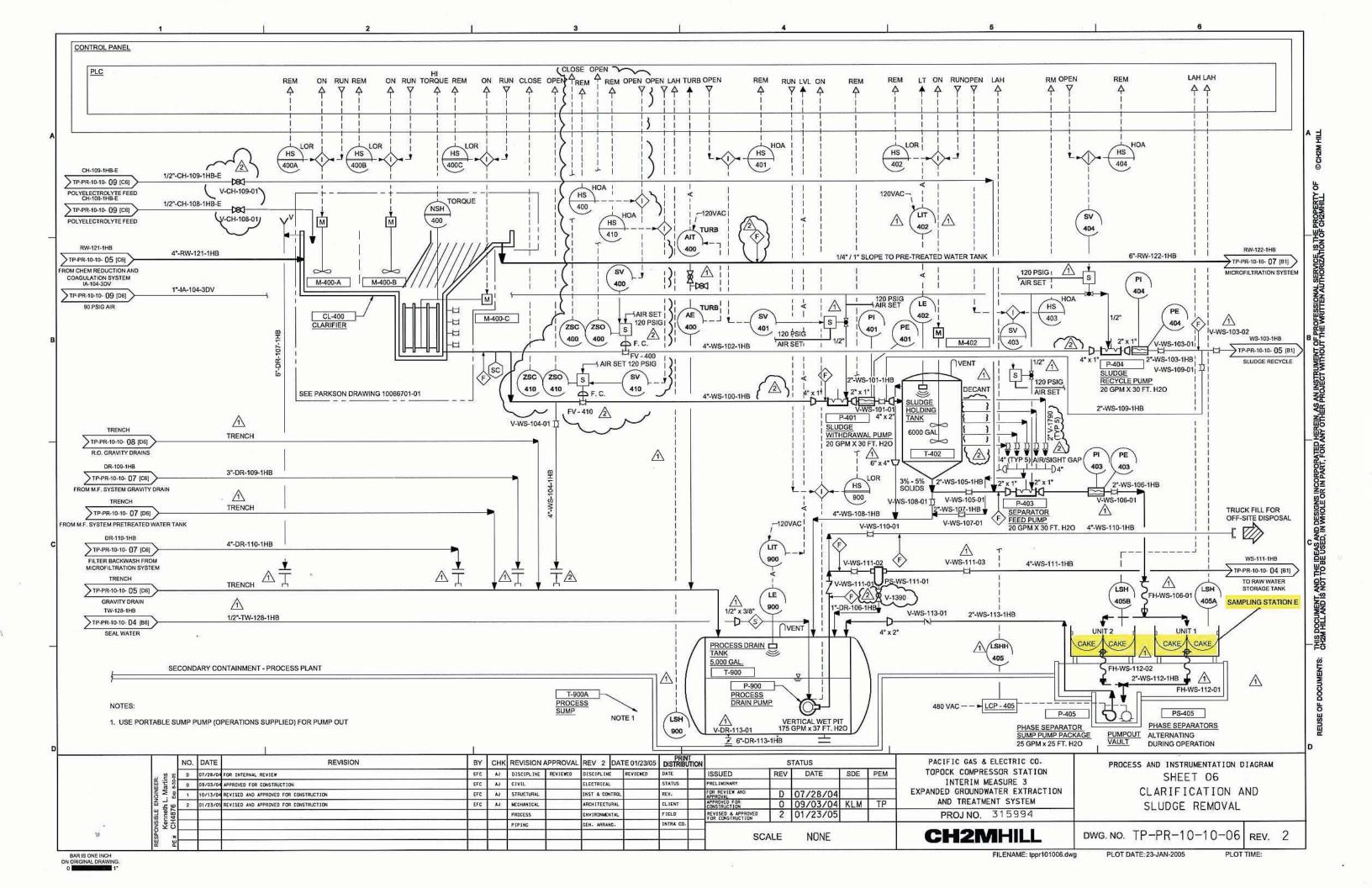
PLOT TIME: 10:27:54 AM

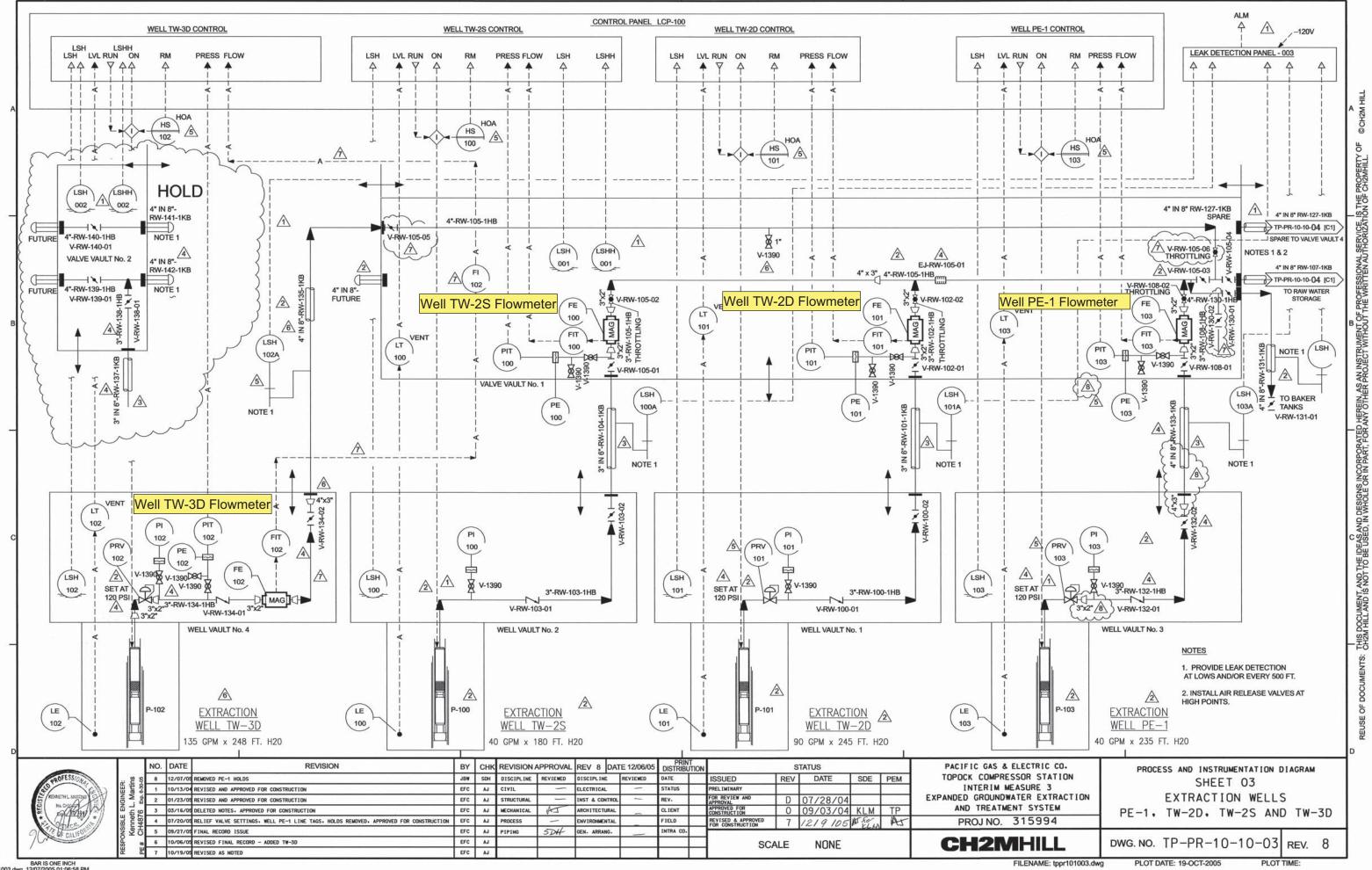
BAR IS ONE INCH ON ORIGINAL DRAWING.

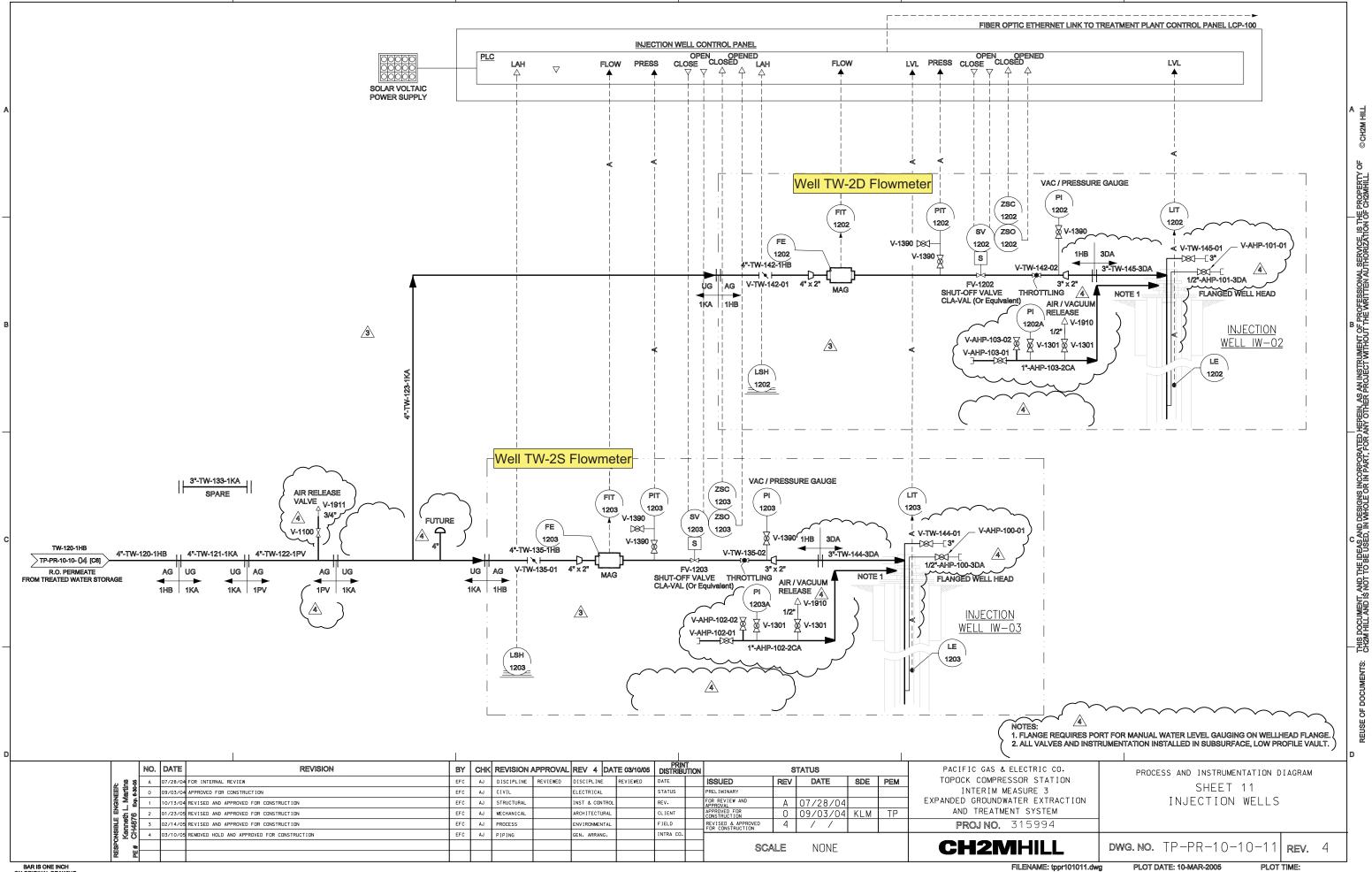
TO SEAL WATER TRUNK LINE PR-10-03 (HS 701 1 1/2" TW-154-1HB THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN AS AN INSTRUMENT OF PROFESSIONAL SERVICE. IS THE PROPERTY CHZM HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CHZMHILL. LOCATED IN CHEMICAL STORAGE AREA LOCATED NEAR EXISTING RO PR-10-03 -1/2" CH-112-1HB TO PRIMARY RO FROM P-2301 HCI ACID PUMP /-1/2" CH-114-1HB HYDRO-CHLORIC ACID (HCI) HCI ACID TOTE PUMP SKID SEE CROWN ANTISCALANT FEED PUMP SKID SEE CROWN SECONDARY RO PRIMARY RO ANTI-SCALANT CHEMICAL DRUM ANTI-SCALANT CHEMICAL DRUM 1A-102-3DV 1"-1A-108-3DV TP-PR-10-10-09(06) 90 PSIG AIR 1/4" CH-115-1HB FROM P-2402 120VAC 1 1/2" TW-152-1HB TO PRIMARY RO FROM P-2401 ANTI-SCALANT FEED PUMP RECYCLE COND COND 701 701 ST STAGE RO CONCENTATE V-1390 1 1/2"-TW-148-1HB PR-10-03 2"x1 1/2" NO SECONDARY REVERSE OSMOSIS SKID SEE CROWN SOLUTION DWG: PS-0689-08 1 1/2" TW-149-1HB T-2601 SECONDARY 1" TW-146-1HB SECONDAR RO FEED TANK SEE CROWN RO FEED PUMP SEE _x 701 (NOTE 3) TO T-603 TANK (LE) CROWN DWG PS-0689-07 V-1390 1 1/2" TW-151-1HB SAMPI ING 701 <u></u> ∩ VENT STATION D PR-10-03 O CONCENTRATE 701 CLOSE FROM PRIMARY RO FLOWMETER Oběv 5 T-701 FE 8000 GAL. 701 SEAL WATER TS-TW-111-01 ፵፫ T 6"x1 1/2" ▼ 3"x1" 3"x1" V-TW-112-01 V-TW-112-03 **RECORD DRAWINGS** SOV V-TW-112-03 701 J PORCELLA 6"-TW-111-1HB P-107 THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS, THEY ARE △ 1/2"x3/8" SEAL WATER RO CONCENTRATE TP-PR-10-10-08 [B6] NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TRANSFER PUMP 80 GPM X 85 FT H20 TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR 1" TW-147-1HB OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS. TW-112-1RB TP-PR-10-10 [C1] TO TRENCH DRAIN RO CONCENTRATE REVISION BY CHK PRINT DISTRIBUTION DATE REVISION APPROVAL REV 0 DATE 10/02/09 STATUS PACIFIC GAS & ELECTRIC CO. PROCESS AND INSTRUMENTATION DIAGRAM REV DATE TOPOCK COMPRESSOR STATION A 2/12/09 INTERNAL REVIEW DISCIPLINE REVIEWED DISCIPLINE REVIEWED ISSUED SDE PEM REVERSE OSMOSIS SYSTEM 2/12/09 JP INTERIM MEASURE 3 ORIGINALLY STAMPED /12/09 CLIENT REVIEW ELECTRICAL STATUS PREL [M] NARY R REVIEW AND SHEET TWO OF TWO 4/01/09 FOR REVIEW AND APPROVA PLANT PERFORMANCE IMPROVEMENTS 4/01/09 AND SIGNED BY: PPROVED FOR ONSTRUCTION JOHN PORCELLA 1/17/09 FINAL RECORD ISSUE JR MECHAN1CAL ARCH | TECTURAL LIENT CALIFORNIA PE NO. C70145 PROCESS FIELD **PROJ NO.** 362032 0 10/02/09 ON 04-01-2009 INTRA CO PIPING SJ GEN. ARRANG. **CH2M**HILL DWG. NO. PR-10-04 SCALE NONE REV. 0 BAR IS ONE INCH ON ORIGINAL DRAWING. FILENAME: PR-10-04.dgn PLOT DATE: 11/19/2009 PLOT TIME: 10:28:26 AM

COND

RUN ON FLOW







BAR IS ONE INCH ON ORIGINAL DRAWING

Appendix A Semiannual Operations and Maintenance Log, January 1, 2012 through June 30, 2012

APPENDIX A

Semiannual Operations and Maintenance Log, January 1, 2012 through June 30, 2012

Downtime is defined as any periods when all extraction wells are not operating, so that no groundwater is being extracted and piped into IM-3 as influent. Periods of planned and unplanned extraction system downtime are summarized here. The times shown are in Pacific Standard Time to be consistent with other data collected at the site.

January 2012

- **January 4, 2012 (planned):** The extraction well system was offline from 12:28 p.m. to 12:30 p.m. and 12:34 p.m. to 12: 36 p.m. due to critical alarm and leak detection system testing. Extraction system downtime 4 minutes.
- **January 9, 2012 (planned):** The extraction well system was offline from 2:20 p.m. to 3:46 p.m. due to microfilter flow meter repair. Extraction system downtime was 1 hour and 26 minutes.
- **January 12, 2012 (planned):** The extraction well system was offline from 11:18 a.m. to 12:54 p.m. due to clarifier cleaning. Extraction system downtime was 1 hour and 36 minutes.

February 2012

- **February 1, 2012 (planned):** The extraction well system was offline from 10:04 a.m. to 11:22 a.m. due to tank management to control tank levels and critical alarm and leak detection system testing. Extraction system downtime was 1 hour and 18 minutes.
- **February 3, 2012 (unplanned):** The extraction well system was offline from 11:42 p.m. to 11:46 p.m. due to air compressor failure. Extraction system downtime was 4 minutes.
- **February 7, 2012 (planned):** The extraction well system was offline from 1:04 p.m. to 1:30 p.m. due replacement of a pressure relief valve on the air compressor tank. Extraction system downtime was 26 minutes.
- **February 18, 2012 (planned):** The extraction well system was offline from 8:18 a.m. to 9:56 a.m. due to microfilter performance testing. Extraction system downtime was 1 hour and 38 minutes.
- **February 24, 2012 (unplanned):** The extraction well system was offline from 1:28 p.m. to 1:30 p.m. due City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.

March 2012

- March 6, 2012 (unplanned): The extraction well system was offline from 6:48 p.m. to 7:08 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 20 minutes.
- March 7, 2012 (planned): The extraction well system was offline from 2:40 a.m. to 2:46 a.m. due to switching to City of Needles power from generator power. Extraction system downtime was 6 minutes.
- March 7, 2012 (planned): The extraction well system was offline from 12:52 p.m. to 12:54 p.m., 1:02 p.m. to 1:04 p.m., 1:14 p.m. to 1:16 p.m., and 1:30 p.m. to 1:32 p.m. due to checking the specific capacity of extraction wells. Extraction system downtime was 8 minutes.
- March 20, 2012 (unplanned): The extraction well system was offline from 4:54 p.m. to 6:24 p.m. due to low air flow to the iron oxidation tanks. Extraction system downtime was 1 hour and 30 minutes.
- March 21, 2012 (planned): The extraction well system was offline from 11:52 a.m. to 5:12 p.m. due to extraction well PE-1 rehabilitation. Extraction system downtime was 5 hours and 20 minutes.
- March 21, 2012 (planned): The extraction well system was offline from 8:14 p.m. to 8:18 p.m. due to testing well PE-01 after maintenance. Extraction system downtime was 4 minutes.
- March 22, 2012 (planned): The extraction well system was offline from 6:08 p.m. to 6:24 p.m. and 6:26 p.m. to 7:28 p.m. due to a pressure relieving valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 18 minutes.
- March 24, 2012 (planned): The extraction well system was offline from 2:46 a.m. to 4:24 a.m. due to a pressure relieving valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 38 minutes.
- March 25, 2012 (planned): The extraction well system was offline from 11:48 a.m. to 12:50 p.m. due to a pressure relieving valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 2 minutes.
- March 26, 2012 (planned): The extraction well system was offline from 9:34 a.m. to 10:52 a.m. due to a pressure relieving valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 18 minutes.
- March 27, 2012 (planned): The extraction well system was offline from 6:08 a.m. to 7:44 a.m. due to a pressure relieving valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 36 minutes.

- March 28, 2012 (planned): The extraction well system was offline from 6:58 a.m. to 10:12 a.m., 10:14 a.m. to 2:18 p.m., and 2:20 p.m. to 2:38 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 7 hours and 36 minutes.
- March 31, 2012 (planned): The extraction well system was offline from 11:54 a.m. to 1:00 p.m. due to raw water tank management to control levels. Extraction system downtime was 1 hour and 6 minutes.

April 2012

- April 2, 2012 (planned): The extraction well system was offline from 8:44 a.m. to 9:22 a.m., 9:28 a.m. to 9:30 a.m., and 9:36 a.m. to 9:38 a.m. due to critical alarm and leak detection system testing, which shut down extraction wells. Extraction system downtime was 42 minutes.
- April 16, 2012 April 20, 2012 (planned): The extraction well system was offline from 4:54 a.m. on April 16, 2012 to 5:30 a.m. on April 18, 2012; 5:32 a.m. on April 18, 2012 to 8:22 a.m. on April 19, 2012; 10:00 a.m. to 12:20 p.m. on April 19, 2012; 2:08 p.m. on April 19, 2012 to 7:12 a.m. on April 20, 2012; 7:14 a.m. to 8:40 a.m. on April 20, 2012; and 8:42 a.m. to 10:18 a.m. on April 20, 2012 due to scheduled bi-annual plant maintenance. Extraction system downtime was 4 days, 1 hour and 52 minutes.
- April 27, 2012 (unplanned): The extraction well system was offline from 8:10 p.m. to 8:26 p.m. and 9:12 p.m. to 10:44 p.m. due to high water level in the raw water storage tank due to a slight increase in flow from extraction wells. Extraction system downtime was 1 hour and 48 minutes.

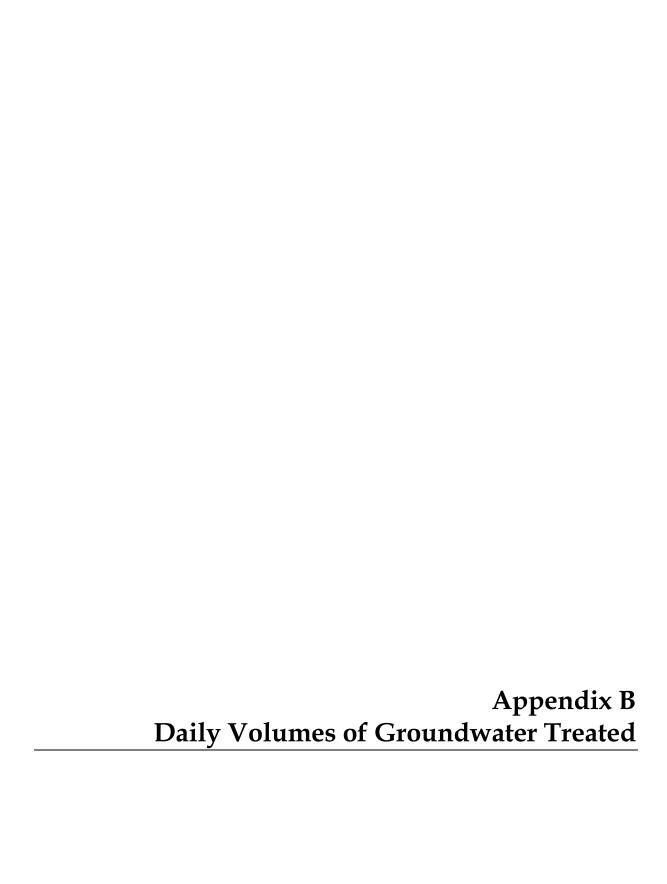
May 2012

- May 2, 2012 (planned): The extraction well system was offline from 11:40 a.m. to 12:10 p.m., 12:16 p.m. to 12:24 p.m., and 12:26 p.m. to 12:28 p.m. due to critical alarm and leak detection system testing that shut down extraction wells. Extraction system downtime was 40 minutes.
- May 3, 2012 (planned): The extraction well system was offline from 12:46 p.m. to 1:00 p.m. due to maintenance on the sump water level alarm. Extraction system downtime was 14 minutes.
- May 3, 2012 (unplanned): The extraction well system was offline from 2:18 p.m. to 2:20 p.m. due to a signal loss to data Historian. Extraction system downtime was 2 minutes.
- May 5, 2012 (unplanned): The extraction well system was offline from 4:02 a.m. to 4:34 a.m. due to a chemical mixing loop low flow alarm. Extraction system downtime was 32 minutes.
- May 5, 2012 (planned): The extraction well system was offline from 9:26 a.m. to 10:38 a.m. and 10:40 a.m. to 10:52 a.m. due to repair of chemical mixing loop flow switch, FSL 201. Extraction system downtime was 1 hour and 24 minutes.

- May 7, 2012 (unplanned): The extraction well system was offline from 12:06 p.m. to 1:38 p.m. due to malfunction of the chemical mixing loop flow switch, FSL 201. Extraction system downtime was 1 hour and 32 minutes.
- May 17, 2012 (planned): The extraction well system was offline from 4:38 p.m. to 4:48 p.m. to allow for acceptance of 24,500 gallons of backwash water from injection well, IW-03, rehabilitation. Extraction system downtime was 10 minutes.
- May 18, 2012 (planned): The extraction well system was offline from 3:40 a.m. to 4:38 a.m. and 9:06 a.m. to 11:44 a.m. to allow for acceptance of 28,000 gallons of backwash water from injection well, IW-02, rehabilitation. Extraction system downtime was 3 hours and 36 minutes.
- May 26, 2012 (unplanned): The extraction well system was offline from 6:36 a.m. to 7:10 a.m. due to high level alarm in the raw water storage tank. Extraction system downtime was 34 minutes.
- May 29, 2012 (planned): The extraction well system was offline from 8:38 a.m. to 10:06 a.m. and 10:08 a.m. to 10:18 a.m. due to monthly scheduled plant maintenance. Extraction system downtime was 1 hour and 38 minutes.

June 2012

- **June 1, 2012 (unplanned):** The extraction well system was offline from 1:18 p.m. to 1:32 p.m. due to a power outage caused by Needles Power transformer maintenance. Extraction system downtime was 14 minutes.
- **June 6, 2012 (planned):** The extraction well system was offline from 8:44 a.m. to 8:46 a.m., 8:54 a.m. to 8:56 a.m., 9:12 a.m. to 9:14 a.m., 9:20 a.m. to 9:22 a.m., and 9:30 a.m. to 9:32 a.m. due to critical alarm and leak detection system testing that shut down extraction wells. Extraction system downtime was 10 minutes.
- **June 27, 2012 (unplanned):** The extraction well system was offline from 1:00 a.m. to 1:06 a.m. and from 9:48 p.m. to 9:56 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 14 minutes.



January 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

				Extrac	tion Well Sys	tem		Injection Well System			
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
January	1	2012			154,759	37,867	192,626	189,547	16	189,562	3,034
January	2	2012			155,115	37,391	192,506	189,248	13	189,261	3,014
January	3	2012			155,195	37,042	192,237	191,028	8	191,035	3,060
January	4	2012			152,131	36,499	188,631	183,833	11	183,844	8
January	5	2012			154,910	36,688	191,598	193,416	16	193,432	4,912
January	6	2012			154,572	37,205	191,777	103,898	82,612	186,509	3,153
January	7	2012			154,450	37,281	191,731	35	189,071	189,106	3,037
January	8	2012			154,623	37,029	191,652	32	186,452	186,484	3,162
January	9	2012			145,091	34,762	179,853	1	177,706	177,707	6,012
January	10	2012			154,215	36,998	191,213	2	192,828	192,831	2,757
January	11	2012			154,513	36,486	190,999	39	184,011	184,049	2,867
January	12	2012			143,845	34,586	178,431	40	175,653	175,693	2,880
January	13	2012			154,182	37,620	191,802	0	188,571	188,572	3,281
January	14	2012			154,255	37,463	191,718	7	191,879	191,886	3,029
January	15	2012			154,509	37,125	191,635	22	189,840	189,863	3,121
January	16	2012			154,304	37,486	191,790	3	185,719	185,723	3,148
January	17	2012			154,492	37,146	191,638	10	188,990	189,000	3,219
January	18	2012			154,650	36,966	191,616	2,389	189,736	192,125	3,152
January	19	2012			154,608	36,913	191,521	1,618	188,645	190,264	2,897
January	20	2012			153,382	38,740	192,121	29	189,597	189,626	6,120
January	21	2012			153,473	38,500	191,973	3	191,714	191,718	3,280
January	22	2012			153,877	38,041	191,918	5	192,070	192,075	3,168
January	23	2012			154,062	37,868	191,929	5	186,224	186,229	3,157
January	24	2012			154,102	37,919	192,021	13	188,315	188,327	3,262
January	25	2012			154,176	37,787	191,963	3	190,148	190,152	3,109
January	26	2012			154,170	37,696	191,866	33	173,330	173,363	3,251
January	27	2012			154,240	37,501	191,740	17	199,220	199,237	3,280
January	28	2012			154,307	37,185	191,492	5	189,561	189,566	2,892
January	29	2012			154,376	36,988	191,364	9	189,050	189,059	6,023
January	30	2012			154,409	36,928	191,338	44	188,530	188,574	2,883
January	31	2012			154,265	37,304	191,569	24	192,654	192,678	3,270
tal Monthly	Volumes	(gal)	0	0	4,763,260	1,153,008	5,916,268	1,055,360	4,782,188	5,837,548	103,440
verage Pum	p/Injectio	n Rates (gpm)	0.0	0.0	106.7	25.8	132.5	23.6	107.1	130.8	2.3

a. Extraction wells TW-3D and PE-1 were operated during January 2011 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during January 2011.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during January 2011 is approximately 0.42 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

February 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

				Extrac	tion Well Sys	tem	Inje	RO Brine			
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
February	1	2012			145,407	35,253	180,661	70,527	105,384	175,911	3,128
February	2	2012			154,309	36,986	191,295	194,063	11	194,074	2,879
February	3	2012			153,385	37,448	190,833	187,626	13	187,639	5,917
February	4	2012			154,108	37,137	191,245	188,275	13	188,288	3,537
February	5	2012			153,978	37,418	191,396	189,767	12	189,779	3,159
February	6	2012			153,743	37,628	191,371	191,843	12	191,856	3,171
February	7	2012			150,491	37,153	187,645	186,333	14	186,347	3,142
February	8	2012			153,992	37,142	191,134	168,820	18,283	187,103	2,983
February	9	2012			154,080	36,979	191,059	189,919	7	189,925	3,158
February	10	2012			154,075	37,016	191,091	191,189	18	191,207	3,140
February	11	2012			153,949	37,360	191,309	190,326	10	190,336	3,133
February	12	2012			153,705	37,801	191,506	187,762	11	187,773	2,984
February	13	2012			154,003	37,252	191,255	193,914	11	193,925	3,026
February	14	2012			154,157	36,999	191,157	189,705	16	189,721	10
February	15	2012			154,315	36,921	191,236	187,334	10	187,344	3,031
February	16	2012			154,385	36,833	191,218	186,200	11	186,211	3,148
February	17	2012			153,727	37,985	191,713	77,361	111,707	189,069	5,151
February	18	2012			142,740	34,715	177,455	22	182,462	182,484	1,185
February	19	2012			154,083	36,897	190,980	14	188,090	188,104	3,018
February	20	2012			154,303	36,641	190,944	5	188,254	188,259	2,997
February	21	2012			154,151	36,925	191,076	24	186,743	186,766	2,970
February	22	2012			154,233	36,712	190,946	7	190,362	190,368	3,088
February	23	2012			154,018	37,208	191,226	7	187,644	187,651	8
February	24	2012			153,938	36,738	190,676	12	192,125	192,136	6,010
February	25	2012			154,044	37,120	191,164	5	194,975	194,980	8
February	26	2012			153,942	37,300	191,242	16	191,638	191,654	3,026
February	27	2012			153,864	37,466	191,330	37	176,538	176,575	2,950
February	28	2012			153,746	37,454	191,200	11	189,458	189,469	3,002
February	29	2012			125,488	30,283	155,772	21	157,857	157,878	3,142
otal Monthly	Volumes	(gal)	0	0	4,414,359	1,066,772	5,481,131	2,971,146	2,461,686	5,432,832	86,104
verage Pum	p/Injectio	n Rates (gpm)	0.0	0.0	105.7	25.5	131.3	71.1	58.9	130.1	2.1

a. Extraction wells TW-3D and PE-1 were operated during February 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during February 2012.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during February 2012 is approximately 0.69 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

				Extrac	tion Well Sys	tem	Injection Well System				
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
March	1	2012			154,139	36,875	191,014	78,273	114,506	192,779	2,965
March	2	2012			154,329	36,583	190,913	191,563	17	191,580	3,002
March	3	2012			154,164	36,993	191,157	190,230	10	190,240	8
March	4	2012			154,295	36,904	191,199	189,132	9	189,141	3,019
March	5	2012			153,993	37,255	191,247	192,128	13	192,141	2,996
March	6	2012			151,166	36,901	188,067	188,557	19	188,576	2,331
March	7	2012			150,448	36,695	187,143	186,353	15	186,368	3,646
March	8	2012			153,681	36,931	190,612	191,219	11	191,230	9
March	9	2012			153,735	36,865	190,600	188,376	14	188,390	2,872
March	10	2012			153,003	37,934	190,937	187,370	23	187,393	8
March	11	2012			153,141	37,735	190,876	191,027	20	191,047	3,125
March	12	2012			153,381	37,361	190,742	190,381	14	190,395	3,083
March	13	2012			153,568	37,098	190,666	189,305	16	189,321	9
March	14	2012			153,644	36,949	190,592	191,094	286	191,380	3,893
March	15	2012			153,717	36,852	190,569	190,471	13	190,484	7
March	16	2012			153,117	37,796	190,913	188,750	19	188,769	2,853
March	17	2012			153,381	37,201	190,582	189,415	11	189,426	8
March	18	2012			153,365	37,207	190,572	190,469	16	190,485	3,116
March	19	2012			153,246	37,379	190,624	193,020	18	193,038	2,961
March	20	2012			142,985	35,248	178,234	172,823	17	172,840	11
March	21	2012			120,625	25,209	145,835	137,999	15	138,014	2,979
March	22	2012			144,881	35,263	180,144	187,579	13	187,592	8
March	23	2012			156,195	37,732	193,927	186,947	15	186,962	2,982
March	24	2012			147,856	36,196	184,052	187,973	10	187,983	5
March	25	2012			151,707	36,940	188,646	187,458	13	187,471	2,996
March	26	2012			148,838	36,930	185,769	185,976	14	185,990	6
March	27	2012			144,920	36,872	181,792	181,251	23	181,273	2,565
March	28	2012			107,298	25,530	132,828	134,449	14	134,464	7
March	29	2012			159,871	36,384	196,254	193,595	9	193,604	2,993
March	30	2012			160,415	35,757	196,172	192,410	22	192,432	8
March	31	2012			151,186	34,629	185,815	186,779	13	186,792	3,249
otal Monthly	Volumes	(gal)	0	0	4,650,288	1,118,205	5,768,493	5,632,374	115,227	5,747,601	57,717
		n Rates (gpm) 0.0	0.0	104.2	25.0	129.2	126.2	2.6	128.8	1.3

a. Extraction wells TW-3D and PE-1 were operated during March 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during March 2012.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during March 2012 is approximately 0.64 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

				Extrac	tion Well Sys	tem		lnj	RO Brine		
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
April	1	2012			157,696	36,003	193,699	195,753	10	195,763	3,015
April	2	2012			151,271	35,013	186,283	188,469	1,859	190,328	6
April	3	2012			157,202	36,032	193,234	187,826	12	187,838	2,793
April	4	2012			157,536	35,541	193,077	190,287	16	190,302	7
April	5	2012			157,974	34,869	192,843	116,648	76,143	192,791	2,999
April	6	2012			158,458	34,184	192,642	3,957	191,239	195,196	9
April	7	2012			158,439	34,102	192,541	12	187,367	187,379	3,147
April	8	2012			158,546	34,082	192,628	19	194,176	194,195	2,976
April	9	2012			158,785	33,979	192,764	0	194,383	194,384	4
April	10	2012			158,878	33,927	192,805	16	193,981	193,997	2,941
April	11	2012			159,047	33,819	192,866	1,221	190,051	191,272	6
April	12	2012			159,170	33,686	192,856	4	191,397	191,402	3,809
April	13	2012			159,334	33,578	192,912	40	192,389	192,428	2,963
April	14	2012			159,330	33,620	192,951	12	191,990	192,002	10
April	15	2012			159,350	33,602	192,952	9	185,691	185,700	3,122
April	16	2012			32,548	6,874	39,422	17	55,322	55,340	9
April	17	2012			19	2	20	6	17	22	7
April	18	2012			14	5	19	22	19	41	8
April	19	2012			22,846	5,522	28,368	4	18,977	18,980	6
April	20	2012			89,797	21,867	111,664	5	108,776	108,781	5
April	21	2012			157,889	37,512	195,401	30	195,367	195,397	2,960
April	22	2012			156,947	37,542	194,489	11	191,597	191,608	4
April	23	2012			156,294	37,150	193,444	10	193,766	193,776	3,113
April	24	2012			156,329	36,923	193,252	42	192,901	192,943	6
April	25	2012			156,475	36,783	193,258	1,713	187,213	188,926	3,000
April	26	2012			156,506	36,738	193,244	43	194,151	194,194	3,115
April	27	2012			144,679	34,109	178,788	8	191,304	191,312	8
April	28	2012			156,315	37,422	193,737	8	188,485	188,492	2,985
April	29	2012			156,343	37,167	193,510	7	191,243	191,250	4
April	30	2012			156,358	37,081	193,439	16	189,680	189,695	2,998
otal Monthly	Volumes	s (gal)	0	0	4,070,373	918,734	4,989,107	886,214	4,089,520	4,975,734	46,036
		ກ Rates (gpmັ	0.0	0.0	94.2	21.3	115.5	20.5	94.7	115.2	1.1

NOTES: gal: gallons

gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW-3D and PE-1 were operated during April 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during April 2012.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during April 2012 is approximately 0.65 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

	Extraction Well System							Injection Well System			
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
May	1	2012			156,362	36,991	193,354	1	194,268	194,269	5
May	2	2012			150,885	36,000	186,884	1,797	191,611	193,407	2,736
May	3	2012			155,455	37,346	192,801	12	192,750	192,762	4
May	4	2012			157,600	37,931	195,531	8	189,584	189,591	2,955
May	5	2012			144,759	34,522	179,281	14	177,541	177,555	6
May	6	2012			157,788	37,466	195,254	12	193,304	193,316	2,992
May	7	2012			147,649	35,219	182,868	4	190,942	190,946	2,875
May	8	2012			157,785	37,556	195,341	5	189,711	189,717	1,273
May	9	2012			157,769	37,259	195,028	81,763	112,228	193,991	3
May	10	2012			155,735	38,071	193,806	198,437	50	198,487	3,140
May	11	2012			154,989	38,021	193,010	181,207	66	181,273	3,107
May	12	2012			154,967	37,843	192,810	194,785	44	194,829	3
May	13	2012			155,036	37,724	192,760	194,812	48	194,860	3,002
May	14	2012			155,111	37,729	192,841	192,921	46	192,966	6
May	15	2012			155,180	37,796	192,975	189,817	3,514	193,331	3,131
May	16	2012			155,135	37,607	192,742	197,857	26	197,884	2,716
May	17	2012			143,577	37,256	180,833	114,130	77,449	191,579	4
May	18	2012			131,565	32,810	164,375	76,678	115,919	192,597	2,930
May	19	2012			154,730	38,547	193,277	195,132	47	195,179	2,986
May	20	2012			154,788	38,478	193,266	194,355	44	194,399	3
May	21	2012			154,891	38,417	193,308	102,094	89,211	191,305	3,152
May	22	2012			154,895	38,366	193,260	46	195,291	195,337	2
May	23	2012			154,892	38,076	192,969	1,652	189,525	191,177	3,208
May	24	2012			154,816	37,995	192,811	40	194,603	194,643	1,790
May	25	2012			154,932	38,051	192,982	12	195,942	195,955	6
May	26	2012			151,003	37,048	188,051	6	190,427	190,432	6
May	27	2012			155,096	37,295	192,391	27	191,606	191,633	3,219
May	28	2012			155,231	37,099	192,330	10	194,384	194,394	3,237
May	29	2012			144,344	34,976	179,319	108,592	64,930	173,522	4
May	30	2012			155,102	37,365	192,466	195,227	40	195,267	2
May	31	2012			155,312	36,656	191,967	194,794	43	194,837	2,997
otal Monthly			0	0	4,747,379	1,153,512	5,900,892	2,616,248	3,335,192	5,951,440	51,497
-		ກ Rates (gpm		0.0	106.3	25.8	132.2	58.6	74.7	133.3	1.2

a. Extraction wells TW-3D and PE-1 were operated during May 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during May 2012.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during May 2012 is approximately 1.73 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

		Extraction Well System						Injection Well System			
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
June	1	2012			153,612	36,652	190,264	191,971	49	192,019	3
June	2	2012			155,155	37,101	192,256	34,022	153,228	187,250	3,122
June	3	2012			155,319	36,951	192,269	2,263	188,524	190,788	3
June	4	2012			155,394	36,887	192,281	13	194,291	194,305	2,998
June	5	2012			155,493	36,820	192,313	8	196,311	196,319	4
June	6	2012			153,126	37,847	190,972	2,316	187,086	189,401	5
June	7	2012			154,998	38,456	193,454	14	194,324	194,338	3,146
June	8	2012			154,947	38,281	193,228	5	195,150	195,155	1,657
June	9	2012			154,899	38,156	193,054	8	189,303	189,311	4
June	10	2012			155,022	38,091	193,113	9	193,809	193,818	2,861
June	11	2012			155,219	37,556	192,775	16	194,340	194,355	4
June	12	2012			155,306	37,214	192,520	8	193,058	193,066	2,964
June	13	2012			155,315	37,276	192,591	77,832	113,230	191,061	3
June	14	2012			155,284	37,383	192,667	115,899	77,397	193,297	3,005
June	15	2012			155,217	37,210	192,426	10	194,203	194,213	3,277
June	16	2012			155,156	37,192	192,349	35	190,932	190,966	3
June	17	2012			155,299	36,821	192,120	49	191,877	191,926	2,018
June	18	2012			155,464	36,781	192,245	22	196,048	196,070	3,576
June	19	2012			155,378	36,907	192,284	23	193,094	193,117	8,843
June	20	2012			155,456	36,739	192,195	74,590	117,265	191,855	9,094
June	21	2012			155,418	36,533	191,951	196,212	73	196,285	9,271
June	22	2012			155,559	36,350	191,910	192,635	91	192,726	9,326
June	23	2012			155,619	36,205	191,824	192,230	93	192,323	9,390
June	24	2012			156,629	35,950	192,578	194,338	74	194,412	10,084
June	25	2012			157,928	35,881	193,809	187,845	80	187,924	8,686
June	26	2012			157,971	35,863	193,834	197,616	70	197,686	8,564
June	27	2012			155,695	37,465	193,161	112,350	80,464	192,814	8,424
June	28	2012			157,166	37,603	194,769	17	199,112	199,128	9,744
June	29	2012			157,187	37,574	194,761	8	196,010	196,017	9,500
June	30	2012			157,400	37,506	194,906	18	193,415	193,433	9,141
tal Monthly	/ Volumes	s (gal)	0	0	4,667,629	1,113,252	5,780,881	1,772,382	4,022,997	5,795,380	138,720
verage Pum	p/Injectio	n Rates (gpm	0.0	0.0	108.0	25.8	133.8	41.0	93.1	134.2	3.2

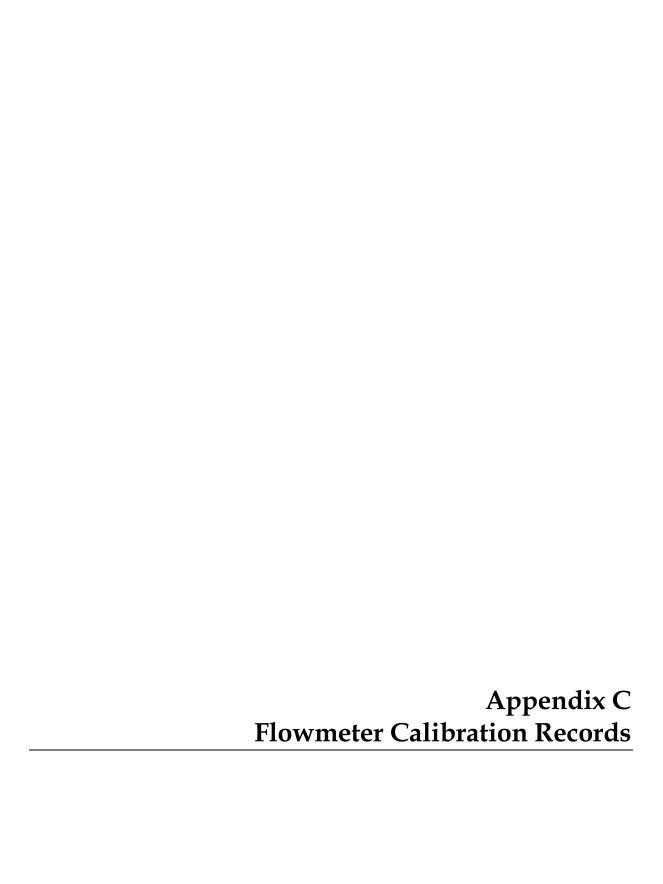
NOTES: gal: gallons gpm: gallo

gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW-3D and PE-1 were operated during June 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during June 2012.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during June 2012 is approximately 2.65 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.





People for Process Automation

Flow Calibration with Adjustment

30201334-130470

WWRA-008929F

Furchase order number

US-465002381-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037216000

6C037216000 Serial N°

Tag N°

FCP-6.F	
Calibration rig	
155.6102 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
0.9184	
Calibration factor	
20	
Zero point	
76.8 °F	

Flow [%]	7 Flow [as.gal/min]	Duration [s]	V :arget [us.gad]	V mezs. (us.gal]	Δ o.r.* [%]	Outp.**
9.9	15.4	30.2	7.7528	7.7611	0.11	5.59
39.5	61.4	30.2	30.907	30.917	0.03	10.32
39.9	62.1	30.2	31.246	31.239	-0.02	10.38
93.0	144.7	30.2	72.803	72.836	0.05	18.88
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*o.r.: of s	ate	•				

Measured error % o.t.

Tolerance limit: ±0.5% or.7 ± Zero stability

1.5
0.5
0.5
1.5
0 10 20 30 40 50 60 70 80 90 100 [%]

Flow

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzbou (CN).

07-15-2011 Date of calibration

**Calculated value (4-20 mA)

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 Leonard McGee

Water temperature

Operator

Certified acc. to ISO 9001, Reg.-Nº 030502.2 ISO 14001, Reg.-N° EMS561046

People for Process Automation

Flow Calibration without Adjustment

30201330-130470

WWRA-008929F

Purchase order number

US-465002381-20 / Endress+Hauser Flowtec

Order Nº/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037216000

Serial Nº

Tag Nº

FCP-	6.F
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Calibration rig

155.6102 us.gal/min

 $(\triangleq 100\%)$

Calibrated full scale

Current 4-20 mA

Calibrated output

0.9258

Calibration factor

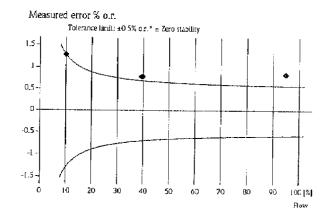
20

Zero point

75.9 °F

Water temperature

	Flow	Flow [us.gal/min]	Duration [sj	V target us.gal	V meas. [us.gal]	∆ o.r.* [%]	Outp.**
- 1	9.9	15.4	30.2	7.7490	7.8501	1.31	5.60
	39.3	1.16	30.2	30.760	31.006	0.80	10.34
	39.7	61.8	30.2	31,109	31.358	0.80	10.41
	94.9	[47.7	30.2	74.312	74.944	0.85	19.31
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For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

07-15-2011

Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 Leonard McGee

Operator

Certified acc. to ISO 9001, Reg.-N° 030502.2 ISO 14001, Reg.-N° EMS561046

or of rate

^{**}Calculated value (4 - 20 mA)

Flow Calibration with Adjustment

WWRA008929F
Furchase order number
US-465002380-10 / Endress+Hauser Flowtec
Orde: N°/Manufacturer
23P50-AL1A1AA022AW
Order code
PROMAG 23 P 2"
Transmitter/Sensor
6C037116000
Serial N°

ag	Ν°

Flow	Flow [us.gal/min]	Duration.	V targat (us.gal)	V m∈as. ¦us.gal]	Δ o.r.* %	Outp.** [mA]
9.9	15.4	30.2	7.7531	7.7639	0.14	5.59
39.4	61.4	30.2	30.874	30.873	0.00	10.31
39.9	62.1	30.2	31.207	31.206	0.00	10.38
94.1	146.4	30.2	73.642	73.601	-0.05	19.04
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	7 700 40	210		. —			•
	[%]	[us.gal/min]	5.	[us.gal]	[us.gal]	[%]	mA
i	9.9	15.4	30.2	7.7531	7.7639	0.14	5.59
	39.4	61.4	30.2	30.874	30.873	0.00	10.31
	39.9	62.1	30.2	31.207	31.206	0.00	10.38
ļ	94.1	146.4	30.2	73.642	73.601	-0.05	19.04
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	-	-	·	-	-	-	-
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o.r.: of rate ** Calculated value (4 - 20 mA)

FCP-6.F Calibration rig $(\triangleq 100\%)$ 155.6102 us.gal/min Calibrated full scale Current 4-20 mA Calibrated output 0.9106 Calibration factor Zero point 75.4°F Water temperature

Measi	red en	or % o	LΓ,							
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0.5						-			+-	
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. 0	10	20	30	40	50	60	70	80	90	100 [%]
										Glow

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

07-15-2011 Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143

Leonard McGee

Cperator

Certified acc. to ISO 9001, Reg.-Nº 030502.2 ISO 14001, Reg.-Nº EMS561046



People for Process Automation

Flow Calibration without Adjustment

30201327-1304707

WWRA008929F	
Purchase order number	
US-465002380-10 / Endress+Hauser Flowtec	
Orde: N°/Manufacturer	
23P50-AL1A1AA022AW	
Order code	
PROMAG 23 P 2"	
Transmitter/Sensor	
6C037116000	

Tag Nº

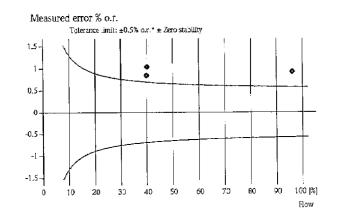
Serial N°

FCP-6.F	
Calibration rig	
155.6102 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
0.9195	
Calibration factor	·
0	
Zero point	
74.9 °F	

Flow M	Flow [us.gal/min]	Duration s	V target us.gal	V meas. [us.gal]	Δ oπ* [%]	Outp.** mAj
10.0	15.5	30.2	7.7934	7.9184	1.60	5.62
39.8	61.9	30.2	31.146	31.410	0.85	10.42
40.0	62.2	30.2	31.325	31.654	1.05	10.47
96.0	149,4	30.2	75.197	75.894	0.93	19.51
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*our.: of rate

**Catculated value (4 - 20 mA)



For detailed data concerning output specifications of the unit under test, see technical informations [TI], chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad [IN] and Suzhou (CN).

07-15-2011 Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 Leonard McGee

Water temperature

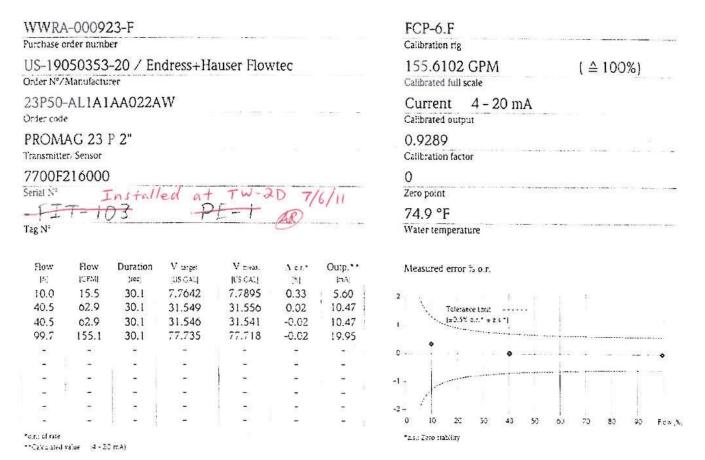
Cperator

Certified acc. to ISO 9001, Reg.-N° 030502.2 ISO 14001, Reg.-N° EMS561046



Flow Calibration with Adjustment People for Process Automation

30092171-1385273



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics. The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

11-30-2006 Date of calibration

Endress-Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 ME. Tilly.

Morris E. Trueblood Jr. Operator

Certified acc. to MIL-STD-45002A ISO 9001, Reg.-N° 030502.2

Flow Calibration with Adjustment

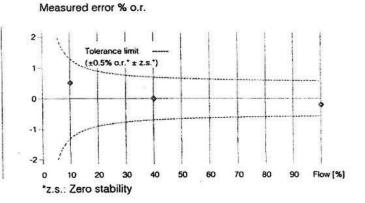


30057870-1275191

41724888	
Purchase Order Num	ber
USA-4931009	0-40 / Endress+Hauser Flowtec
Order Nº/Manufactur	er
23P50-AL1A1	RA022AW
Order Code	The second secon
PROMAG 23	P 2"
Transmitter/Sensor	
6A022016000	
Serial Nº FIT- 101 / T	W-25/installed 7/28/05
Tag №	

Calibration rig	
155.6102 GPM	(≙ 100%)
Calibrated full scale	20 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Current 4 - 20 mA	
Calibrated output	Consideration of the State of the Constant of the State o
0.9207	
Calibration factor	
0	
Zero point	
74.1 °F	
Water temperature	Annual Control of the

Flow (%)	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.*	Outp.**
10.0	15.6	30.0	7.7910	7.8318	0.52	5.61
40.0	62.3	30.0	31.157	31.160	0.01	10.40
40.1	62.4	30.0	31.229	31.229	0.00	10.42
100.2	155.9	30.0	78.017	77.856	-0.21	20.00
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848	-	-	-	-	-	



*o.r.: of rate
**Calculated value (4 - 20 mA)

For detailed data concerning output specifications of the unit under test, see technical informations (TI)

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

11-29-2004 Date of calibration

Endress+Hauser 2350 Endress Place Greenwood, IN 46143 Tim Swick

Operator

Certified acc. to MIL-STD-45662A

ISO 9001, Reg.-Nº 030502.2



People for Process Automation

Flow Calibration with Adjustment

30171212-1304705

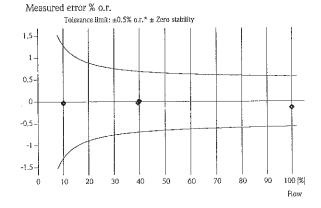
WWRA-006931-F	
Purchase order number	
US-19068473-30 / Endress+Hauser Flowtec	
Order N°/Manufacturer	
23P50-AL1A1AA022AW	
Order code	
PROMAG 23 P 2"	
Transmitter/Sensor	
6C036F16000	

Serial No

Tag N°

Calibration rig	
155.6102 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4 - 20 mA	
Calibrated output	
0.9101	
Calibration factor	
-34	
Zero point	

Flow [%]	Flow [us.gal/min]	Duration [8]	V target [us.gal]	V meas. [us.gal]	∆ o.r.* [%]	Outp.** [mA]
10.1	15.7	30.2	7.8942	7.8921	-0.03	5.61
39.5	61.5	30.2	30.956	30.950	-0.02	10.32
39.9	62.1	30.2	31,263	31.268	0.02	10.39
100.0	155.7	30.2	78.338	78.232	-0.14	19.98
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*o.r.: of rate **Calculated value (4 - 20 niA)

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

08-06-2010 Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143

John Davis Operator

78.7 °F Water temperature

Certified acc. to MIL-STD-45662A ISO 9001, Reg.-N° 030502.2



People for Process Automation

Flow Calibration with Adjustment

30171217-1275192

W	Λ	7R	A-	-()()6	9	3	1	-F

Purchase order number

US-19068473-20 / Endress+Hauser Flowtec

Order Nº/Manufacturer

23P50-AL1A1RA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6A022116000

Serial Nº

Tag Nº

FCP-6.F

Calibration rig

155.6102 us.gal/min

 $(\triangleq 100\%)$

Calibrated full scale

Current 4-20 mA

Calibrated output

0.9092

Calibration factor

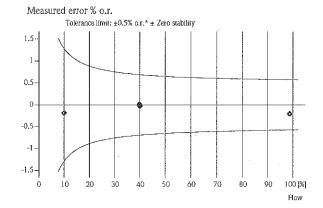
0

Zero point

79.6 °F

Water temperature

	Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	∆ o.r.* [%]	Outp.** [mA]
	10.0	15.5	30.2	7.8009	7.7865	-0.18	5.59
-	39.9	62.0	30.2	31.203	31.209	0.02	10.38
-	40.1	62.4	30.2	31.360	31.353	-0.02	10.41
	98.8	153.8	30.2	77.402	77.243	-0.20	19.78
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	_	-	_ `	- '	-	-



*o.r.: of rate

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

08-06-2010 Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 John Davis

Operator

Certified acc. to MIL-STD-45662A ISO 9001, Reg.-N° 030502.2

^{**}Calculated value (4 - 20 mA)



People for Process Automation

Flow Calibration without Adjustment

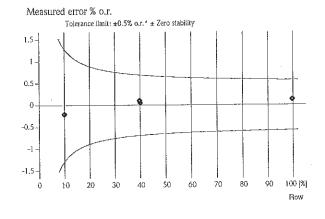
30171214-1275192

WWRA-006931-F
Purchase order number
US-19068473-20 / Endress+Hauser Flowtec
Order N°/Manufacturer
23P50-AL1A1RA022AW
Order code
PROMAG 23 P 2"
Transmitter/Sensor
6A022116000
Serial N°

1	ſa	а	Νo	

FCP-6.F	
Calibration rig	
155.6102 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
0.9111	
Calibration factor	
0	
Zero point	
79.2 °F	
Water temperature	

Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.2	7.8089	7.7928	-0.21	5.59
39.8	61.9	30.2	31.149	31.183	0.11	10.37
40.0	62.3	30.2	31.347	31.364	0.06	10.41
99.8	155.3	30.2	78.162	78.264	0.13	19.99
_	-	-	-	-	-	-
_	-	_	-	-		-
-		-	-	-	-	-
_	_	-	-	-	-	
-		-	-	-	-	-
	_	_	_	-	-	-



**Calculated value (4 - 20 mA)

*o.r.: of rate

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

08-06-2010

Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 John Davis

Operator

Certified acc. to MIL-STD-45662A ISO 9001, Reg.-N° 030502.2

Endress+Hauser 纽丁

People for Process Automation

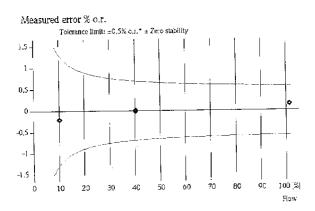
Flow Calibration with Adjustment

30202337-; 385113

WWRA008929F	
Purchase order number	
US-465002382-30 / Endress+Hauser Flowtec	. <u>-</u>
Crder Nº/Manufacturer	
23P80-AL1A1AA022AW	
Order code	
PROMAG 23 P 3"	
Transmitter/Sensor	
7700C616000	
Serial No	
<u> </u>	

FCP-7.1.B	
Catibration rig	
398.3621 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
1.1670	
Calibration factor	
35	
Zero point	
82.3 °F	
Water temperature	

	F.ow [%]	Flow [us.gal/min]	Duration isi	V target [us.gal]	V meas. us.gall	∆ o.r. ° %	Cutp.** [mA]
١	10.1	40.0	60.1	40.074	39.992	-0.20	5.60
ı	40.2	160.2	60.1	160.332	160.322	-0.01	10.43
	40.2	160.2	60.1	160.400	160.424	0.01	10.44
	101.4	404.0	60.1	404.438	405.041	0.15	20.25
	_	-	-	-	· - ,	-	_
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	-	_	-	-	-	-	-



Tag Nº

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset Intervals.

Endress-Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

07-25-2011 Date of calibration

Endress+Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 Taylor Shepard

Operator

Certified acc. to ISO 9001, Reg.-N° 030502.2 ISO 14001, Reg.-N° EMS561046

^{*}o.r.z of rate

^{**}Calculated value (4 - 20 mA)

Pov



People for Process Automation

Flow Calibration with Adjustment

20138407-136470

WWRA-004329-F						FCP-6.C			
Furchase order number						Calibration rig			
US-19061453-10 / Endress+Hauser Flowtec					155.6102 GPM (≙ 100%)				
Order N°/Manufacturer						Calibrated full scale			
23P50-AL1A1AA022AW						Current 4 - 20 mA			
Order code	e	Part Collection Collection	····				Calibrated output		
PROM	AG 23 I	2":					0.9146		
Transmitte	er/Sensor					707555	Calibration factor		
6C037	316000)					0		
Serial N°			at Ro	Concen	trate	4/1/2011	Zero poin:		
FIT-2	05 I	エナー	1202	It	J-0.	200	76.2 °F		
Tag N°	_					A	Water temperature		
Row	Flow	Duration	Vitage	V neas	A 0.1.*	Outp.**	Measured error % o.r.		
	2000	N	ILIS GALL	ILS GALL		***			
PK.	CPA	17	1000	les and	%;	!nA	Tolerance limit: ±0.5% p.r.* ± Zero stability		
10.0	15.5	30.1	7.7933	7.7939	C.01	5.60	Tolerance that: ±0.5% oz. *± Zero stability		
10.0 40.2	15.5 62.5	30.1	7.7933 31.394	7.7939 31.422	0.09	5.60 10.43	이렇게 지어가 있다. 그렇게 가게 하는 것 같아 가게 되었다면 되었다면 하는 것이 되었다면		
10.0 40.2 40.2	15.5 62.5 62.5	30.1 30.1 30.1	7.7933 31.394 31.416	7.7939 31.422 31.448	0.01 0.09 0.10	5.60 10.43 10.44	15.2		
10.0 40.2	15.5 62.5	30.1	7.7933 31.394	7.7939 31.422	0.09	5.60 10.43	152		
10.0 40.2 40.2	15.5 62.5 62.5	30.1 30.1 30.1	7.7933 31.394 31.416	7.7939 31.422 31.448	0.01 0.09 0.10	5.60 10.43 10.44	15.2		
10.0 40.2 40.2	15.5 62.5 62.5	30.1 30.1 30.1	7.7933 31.394 31.416	7.7939 31.422 31.448	0.01 0.09 0.10	5.60 10.43 10.44 19.95	15-		
10.0 40.2 40.2	15.5 62.5 62.5	30.1 30.1 30.1	7.7933 31.394 31.416	7.7939 31.422 31.448	0.01 0.09 0.10	5.60 10.43 10.44	15-		
10.0 40.2 40.2	15.5 62.5 62.5 155.3	30.1 30.1 30.1	7.7933 31.394 31.416	7.7939 31.422 31.448	0.01 0.09 0.10	5.60 10.43 10.44 19.95	15-		
10.0 40.2 40.2	15.5 62.5 62.5 155.3	30.1 30.1 30.1	7.7933 31.394 31.416	7.7939 31.422 31.448	0.01 0.09 0.10	5.60 10.43 10.44 19.95	15-		

For detailed data concerning output specifications of the unit uncer test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress—Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

C2-26-2009 Date of calibration.

**Ci culated value (4 - 20 ma)

Endress-Hauser Flowtec, Division USA 2330 Endress Place Greenwood, IN 46143 William Darnell

Operato:

Certified acc. to MilL-STD-45562A ISO 9001, Reg.-N° 030502.2

Appendix D Second Quarter 2012 Laboratory Analytical Reports

Established 1931



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

May 16, 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-355 PROJECT, SLUDGE

MONITORING,

TLI No.: 800829

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-355 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 April 3, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

The sample result for Total Molybdenum by SW 6010B is above the reporting limit and the sample duplicate is below the reporting limit. The sample result is within +/- two times the reporting limit and therefore meets the criteria.

No 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

EXCELLENCE IN INDEPENDENT TESTING



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

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

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 408401.01.DM

Laboratory No.: 800829

Date: May 16, 2012 Collected: April 3, 2012 Received: April 3, 2012

ANALYST LIST

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Laboratory No.: 800829
Date Received: April 3, 2012

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	<u>SW 7199</u> Hexavalent	EPA 300.0 Fluoride	EPA 300.0 Nitrate as N	SM 2540 B % Moisture	
			Chromium				
			mg/kg	mg/kg	mg/kg	%	
800829	SC-Sludge-WDR-355	13:57	60.0	30.4	16.0	61.4	

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.



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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Laboratory No.: 800829 Date Received: April 3, 2012

Analytical Results Summary

METALS ANALYSIS: Total Metal Analyses as Requested

Lab I.D.	Sample ID	Date of Analysis: Time Coll.	·	Antimony SW 6010B 04/06/12 mg/kg	Arsenic SW 6010B 04/06/12 mg/kg	Barium SW 6010B 04/06/12 mg/kg	Beryllium SW 6020A 04/18/12 mg/kg	Cadmium SW 6010B 04/06/12 mg/kg	Chromium SW 6010B 04/12/12 mg/kg	Cobalt SW 6010B 04/06/12 mg/kg	Copper SW 6010B 04/26/12 mg/kg	Lead SW 6010B 04/06/12 mg/kg
800829	SC-Sludge-V	VDR-355 13:57		114	ND	76.3	ND	16.0	7670	ND	11.6	7.52
Lab I.D.	Sample ID		Manganese SW 6010B 04/06/12 mg/kg	Mercury SW 6020A 04/18/12 mg/kg	Molybdenum SW 6010B 04/12/12 mg/kg	Nickel SW 6010B 04/06/12 mg/kg	Selenium SW 6010B 04/06/12 mg/kg	Silver SW 6010B 04/12/12 mg/kg	Thallium SW 6010B 04/06/12 mg/kg	Vanadium SW 6010B 04/06/12 mg/kg	Zinc SW 6010B 04/06/12 mg/kg	
800829	SC-Sludge-V	VDR-355 13:57	457	0.238	15.1	25.2	ND	ND	ND	77.1	88.6	

NOTES:

ND: Not detected, or below limit of detection

Truesdail Laboratories, Inc.

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

Laboratory No.: 800829

Collected: April 3, 2012

Received: April 3, 2012 Prep/ Analyzed: April 25, 2012

Analytical Batch: 04CrH12V

Date: May 16, 2012

REPORT

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Prep. Batch: 04CrH12V

Project Name: PG&E Topock Project

Investigation:

Hexavalent Chromium by IC Using Method SW 7199

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	<u>Units</u>	<u>DF</u>	RL	Results
800829	SC-Sludge-WDR-35	55 13:57	16:27	mg/kg	5.0	5.11	60.0

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	800829	60.0	61.6	2.54%	≤ 20%	Yes
		T	Measure	d Theoretica		

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	800829	60.0	25.0	16.4	409	466	469	99.3%	75-125%	Yes
IMS	800829	60.0	100	27.6	2764	2840	2824	101%	75-125%	Yes
PDMS	800829	60.0	25.0	10.4	259	327	319	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	2.02	2.00	101%	90% - 110%	Yes
MRCVS#1	2.05	2.00	103%	90% - 110%	Yes
MRCVS#2	2.12	2.00	106%	90% - 110%	Yes
MRCVS#3	1.89	2.00	94.3%	90% - 110%	Yes
LLCS	0.00991	0.0100	99.1%	70% - 130%	Yes
LCS	2.00	2.00	99.9%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

EXCELLENCE IN INDEPENDENT TESTING



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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012 Received: April 3, 2012

Prep/ Analyzed: April 4, 2012 Analytical Batch: 04SOLID12A

Investigation:

Total Solids by SM 2540 B

REPORT

Analytical Results % Moisture

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

 800829
 SC-Sludge-WDR-355
 13:57
 %
 61.4

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	800829	61.4	59.8	2.58%	≤ 20%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012

Received: April 3, 2012 Prep/ Analyzed: April 4, 2012

Analytical Batch: 04AN12C

Investigation:

Fluoride by Ion Chromatography using EPA 300.0

Analytical Results Fluoride

TLI I.D. Field I.D. Sample Time **Run Time** Units DF <u>RL</u> Results 800829 SC-Sludge-WDR-355 13:57 12:33 mg/kg 1.00 5.18 30.4

QA/QC Summary

	QC STD I.D. Number		aboratory Number	Concentra	ation	ľ	plicate entration	Relative Percent Difference	Acceptance limits	QC Within Control
			800831-2	2.59			2.57	0.89%	≤ 20%	Yes
		one of		Addad			Measured	Theoretical		

	Std Lat D. Numb	١,	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	80083	1-2	2.59	5.00	4.00	20.0	22.8	22.6	101%	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	4.13	4.00	103%	90% - 110%	Yes
MRCVS#1	3.15	3.00	105%	90% - 110%	Yes
MRCVS#2	3,14	3.00	105%	90% - 110%	Yes
LCS	4.13	4.00	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012 Received: April 3, 2012

Prep/ Analyzed: April 4, 2012

Analytical Batch: 04AN12C

Investigation:

Nitrate as N by Ion Chromatography using EPA 300.0

Analytical Results Nitrate as N

RL Results Field I.D. Sample Time **Run Time** Units DF TLI I.D. 13:57 12:33 mg/kg 1.00 10.4 16.0 SC-Sludge-WDR-355 800829

QA/QC Summary

Relative

	QC STE	1111	aboratory Number	Concentra	ation		plicate entration	Percent Difference	Acceptance limits	QC Within Control	
	Duplic	ate 8	300831-2	3.20			3.26	1.86%	≤ 20%	Yes	
QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.		MS nount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	800831-2	3.20	5.00	4.00	2	20.0	23.7	23.2	103%	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	4.00	4.00	100%	90% - 110%	Yes
MRCVS#1	3.00	3.00	99.8%	90% - 110%	Yes
MRCVS#2	2.99	3.00	99.5%	90% - 110%	Yes
LCS	4.00	4.00	99.9%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Ho - Mona Nassimi, Manager Analytical Services

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 408401.01.DM P.O. No.: 408401.01.DM

Investigation: Total Metal Analyses as Requested

Reported: May 16, 2012 Collected: April 3, 2012 Received: April 3, 2012 Analyzed: See Below

Analytical Results

00 01 -1 MDD 255	Time Coll	ected:	13:57		LAB ID:	800829	
SC-Sludge-WDR-355		00.001				Date	Time
Mathad	•	DF	Units	RL	Batch	Analyzed	Analyzed
			ma/ka	6.70	040612B	04/06/12	17:21
				and the second of	040612B	04/06/12	17:21
	A SECURITY OF THE PARTY OF THE					04/06/12	17:21
SW 6010B							14:16
SW 6020A	ND						17:21
SW 6010B	16.0						13:47
SW 6010B	7670	10.0	mg/kg				17:21
SW 6010B	ND	5.00	mg/kg				
SW 6010B	11.6	2.00	mg/kg	2.68			12:01
SW 6010B	7.52	5.00	mg/kg	6.70	040612B		17:21
	457	5.00	mg/kg	6.70	040612B	04/06/12	17:21
		10.0	mg/kg	0.231	041812A	04/18/12	13:47
		10.0	ma/ka	13.4	041212A	04/12/12	13:47
				6.70	040612B	04/06/12	17:21
					040612B	04/06/12	17:21
						04/12/12	13:47
SW 6010B							17:21
SW 6010B	ND						17:21
SW 6010B	77.1	5.00					17:21
SW 6010B	88.6	5.00	mg/kg	6.70	040612B	04/00/12	11.41
	SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B SW 6010B	Method Reported Value SW 6010B 114 SW 6010B ND SW 6010B 76.3 SW 6020A ND SW 6010B 16.0 SW 6010B 7670 SW 6010B ND SW 6010B 11.6 SW 6010B 7.52 SW 6010B 457 SW 6020A 0.238 SW 6010B 15.1 SW 6010B 25.2 SW 6010B ND SW 6010B 77.1	Method Value DF SW 6010B 114 5.00 SW 6010B ND 5.00 SW 6010B 76.3 5.00 SW 6020A ND 20.0 SW 6010B 16.0 5.00 SW 6010B 7670 10.0 SW 6010B ND 5.00 SW 6010B 11.6 2.00 SW 6010B 7.52 5.00 SW 6010B 457 5.00 SW 6020A 0.238 10.0 SW 6010B 15.1 10.0 SW 6010B 25.2 5.00 SW 6010B ND 5.00	Reported Value DF Units SW 6010B 114 5.00 mg/kg SW 6010B ND 5.00 mg/kg SW 6010B 76.3 5.00 mg/kg SW 6020A ND 20.0 mg/kg SW 6010B 16.0 5.00 mg/kg SW 6010B 7670 10.0 mg/kg SW 6010B ND 5.00 mg/kg SW 6010B 11.6 2.00 mg/kg SW 6010B 7.52 5.00 mg/kg SW 6010B 457 5.00 mg/kg SW 6010B 15.1 10.0 mg/kg SW 6010B 15.1 10.0 mg/kg SW 6010B ND 5.00 mg/kg SW 6010	Method Value DF Units RL SW 6010B 114 5.00 mg/kg 6.70 SW 6010B ND 5.00 mg/kg 6.70 SW 6010B 76.3 5.00 mg/kg 6.70 SW 6020A ND 20.0 mg/kg 2.31 SW 6010B 16.0 5.00 mg/kg 6.70 SW 6010B 7670 10.0 mg/kg 6.70 SW 6010B ND 5.00 mg/kg 6.70 SW 6010B 11.6 2.00 mg/kg 2.68 SW 6010B 7.52 5.00 mg/kg 6.70 SW 6010B 457 5.00 mg/kg 6.70 SW 6020A 0.238 10.0 mg/kg 0.231 SW 6010B 15.1 10.0 mg/kg 6.70 SW 6010B ND 5.00 mg/kg 6.70 SW 6010B ND 5.00 mg/kg 6.70 SW 6010B ND	Nethod Value DF	SC-Sludge-WDR-355 Time Collected: 13.37

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

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Attention: Shawn Duffy

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

Project No.: 408401.01.DM P.O. No.: 408401.01.DM Laboratory No.: 800829 Reported: May 16, 2012 Collected: April 3, 2012 Received: April 3, 2012

Quality Control/Quality Assurance Report

			DIGES	TED 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	040612B	mg/kg	ND	2.00	4.85	5.00	97.0%	90-110%	4.86	5.00	97.1%	90-110%
Arsenic	SW 6010B	040612B	mg/kg	ND	0.500	4.86	5.00	97.2%	90-110%	4.89	5.00	97.8%	90-110%
Barium	SW 6010B	040612B	mg/kg	ND	1.00	4.79	5.00	95.7%	90-110%	4.83	5.00	96.7%	90-110%
Beryllium	SW 6020A	041812A	mg/kg	ND	1.00	0.00978	0.0100	97.8%	90-110%	0.0101	0.0100	101%	90-110%
Cadmium	SW 6010B	040612B	mg/kg	ND	0.500	4.92	5.00	98.5%	90-110%	4.93	5.00	98.6%	90-110%
Chromium	SW 6010B	041212A	mg/kg	ND	1.00	5.41	5.00	108%	90-110%	5.30	5.00	106%	
Cobalt	SW 6010B	040612B	mg/kg	ND	1.00	4.84	5.00	96.9%	90-110%	4.85	5.00	97.0%	90-110%
Copper	SW 6010B	042612A	mg/kg	ND	1.00	4.54	5.00	90.8%	90-110%	4.57			90-110%
Lead	SW 6010B	040612B	mg/kg	ND	1.00	4.67	5.00	93.5%	90-110%		5.00	91.4%	90-110%
Manganese	SW 6010B	040612B	mg/kg	ND	1.00	4.77	5.00	95.4%	90-110%	4.69	5.00	93.9%	90-110%
Mercury	SW 6020A	041812A	mg/kg	ND ND	0.100	0.00207				4.64	5.00	92.8%	90-110%
Molybdenum	SW 6010B	041212A		ND			0.00200	104%	90-110%	0.00199	0.00200	99.5%	90-110%
Nickel			mg/kg	·	1.00	4.98	5.00	99.5%	90-110%	4.62	5.00	92.3%	90-110%
	SW 6010B	040612B	mg/kg	ND	1.00	4.87	5.00	97.4%	90-110%	4.89	5.00	97.8%	90-110%
Selenium	SW 6010B	040612B	mg/kg	ND	1.00	5.01	5.00	100%	90-110%	4.99	5.00	99.9%	90-110%
Silver	SW 6010B	041212A	mg/kg	ND	1.00	5.26	5.00	105%	90-110%	4.66	5.00	93.2%	90-110%
Thallium	SW 6010B	040612B	mg/kg	ND	2.00	5.01	5.00	100%	90-110%	5.03	5.00	101%	90-110%
Vanadium	SW 6010B	040612B	mg/kg	ND	1.00	4.61	5.00	92.3%	90-110%	4.50	5.00	90.1%	
Zinc	SW 6010B	040612B	mg/kg	ND	2.00	5.06	5.00	101%	90-110%	4.95	5.00	99.0%	90-110% 90-110%



	OUTON OTANDAS	D (100 A + D #4)
INTERFERENCE	CHECK STANDAR	KD (105 A+B #1)

INTERFERENCE CHECK STANDARD (ICS A+B #2)

Parameter	Method	Units	ICS	ICS	%	Control	ICS	ICS	%	Control
			Obs.	Theo.	Rec.	Limits	Obs.	Theo.	Rec.	Limits
Arsenic	SW 6010B	mg/kg	1.93	2.00	96.4%	80-120%	1.93	2.00	96.7%	80-120%
Cadmium	SW 6010B	mg/kg	2.00	2.00	100%	80-120%	1.98	2.00	98.8%	80-120%
Chromium	SW 6010B	mg/kg	2.17	2.00	109%	80-120%	2.29	2.00	114%	80-120%
Cobalt	SW 6010B	mg/kg	2.01	2.00	100%	80-120%	1.95	2.00	97.7%	80-120%
Copper	SW 6010B	mg/kg	1.84	2.00	92.1%	80-120%	1.85	2.00	92.4%	80-120%
Manganese	SW 6010B	mg/kg	1.96	2.00	97.9%	80-120%	1.89	2.00	94.3%	80-120%
Mercury	SW 6020A	mg/kg	0.00210	0.00200	105%	80-120%	0.00208	0.00200	104%	80-120%
Nickel	SW 6010B	mg/kg	2.02	2.00	101%	80-120%	1.98	2.00	99.1%	80-120%
Silver	SW 6010B	mg/kg	2.06	2.00	103%	80-120%	1.90	2.00	95.2%	80-120%
Zinc	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	2.00	2.00	100%	80-120%

LABORATORY CONTROL SAMPLES

SAMPLE DUPLICATES

			LABORATO	RY CONTROL	SAMPLES		SAMPLE DUPLIN	JATES			Precision
Parameter	Method	Units	LCS	LCS	%	Control	SAMPLE	SAMPLE	DUP	%	Control
			Obs.	Theo.	Rec.	Limits	ID	RESULT	RESULT	RPD	Limits %
Antimony	SW 6010B	mg/kg	5.18	5.00	104%	85-115%	800829	114	95.5	17.6%	≤20
Arsenic	SW 6010B	mg/kg	4.73	5.00	94.5%	85-115%	800829	ND	ND	0.00%	≤20
Barium	SW 6010B	mg/kg	4.61	5.00	92.1%	85-115%	800829	76.3	74.8	1.95%	≤20
Beryllium	SW 6020A	mg/kg	5.01	5.00	100%	85-115%	800829	ND	ND	0.00%	≤20
Cadmium	SW 6010B	mg/kg	5.02	5.00	100%	85-115%	800829	16.0	13.4	18.0%	≤20
Chromium	SW 6010B	mg/kg	5.58	5.00	112%	85-115%	800829	7670	6560	15.6%	≤20
Cobalt	SW 6010B	mg/kg	5.04	5.00	101%	85-115%	800829	ND	4.94	0.00%	≤20
Copper	SW 6010B	mg/kg	5.61	5.00	112%	85-115%	800829	11.6	10.7	8.08%	≤20
Lead	SW 6010B	mg/kg	4.84	5.00	96.8%	85-115%	800829	7.52	6.48	14.9%	≤20
Manganese	SW 6010B	mg/kg	4.79	5.00	95.9%	85-115%	800829	457	499	8.87%	≤20
Mercury	SW 6020A	mg/kg	0.997	1.00	99.7%	85-115%	800829	0.238	0.217	9.24%	≤20
Molybdenum	SW 6010B	mg/kg	4.61	5.00	92.2%	85-115%	800829	15.1	ND	0.00%	≤20
Nickel	SW 6010B	mg/kg	5,44	5.00	109%	85-115%	800829	25.2	24.3	3.46%	≤20
Selenium	SW 6010B	mg/kg	4.94	5.00	98.9%	85-115%	800829	ND	ND	0.00%	≤20
Silver	SW 6010B	mg/kg	5.63	5.00	113%	85-115%	800829	ND	ND	0.00%	≤20
Thallium	SW 6010B	mg/kg	5.31	5.00	106%	85-115%	800829	ND	ND	0.00%	≤20
→ Yanadium	SW 6010B	mg/kg	4.60	5.00	91.9%	85-115%	800829	77.1	64.1	18.4%	≤20
Q inc	SW 6010B	mg/kg	5.17	5.00	103%	85-115%	800829	88.6	85.0	4.14%	≤20



MATRIX SP	IKE								***	0/	Accuracy
Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Control Limits %
800829	Antimony	SW 6010B	mg/kg	114	5.00	134	670	784	731	92.1%	75-125%
800829	Arsenic	SW 6010B	mg/kg	0.00	5.00	134	670	670	709	106%	75-125%
800829	Barium	SW 6010B	mg/kg	76.3	5.00	134	670	746	738	98.8%	75-125%
800829	Bervllium	SW 6020A	mg/kg	0.00	20.0	1.34	26.8	26.8	28.8	107%	75-125%
800829	Cadmium	SW 6010B	mg/kg	16.0	5.00	134	670	686	666	97.1%	75-125%
800829	Chromium	SW 6010B	mg/kg	7670	10.0	134	1340	9010	9030	102%	75-125%
800829	Cobalt	SW 6010B	mg/kg	0.00	5.00	134	670	670	635	94.8%	75-125%
800829	Copper	SW 6010B	mg/kg	11.6	2.00	6.37	12.7	24.4	22.7	86.9%	75-125%
800829	Lead	SW 6010B	mg/kg	7.52	5.00	134	670	677	601	88.6%	75-125%
800829	Manganese	SW 6010B	mg/kg	457	5.00	134	670	1127	1120	99.0%	75-125%
800829	Mercury	SW 6020A	mg/kg	0.238	10.0	0.268	2.68	2.92	2.84	97.3%	75-125%
800829	Molybdenum	SW 6010B	mg/kg	15.1	10.0	134	1340	1355	1370	101%	75-125%
800829	Nickel	SW 6010B	mg/kg	25.2	5.00	134	670	695	662	95.0%	75-125%
800829	Selenium	SW 6010B	mg/kg	0.00	5.00	134	670	670	667	99.6%	75-125%
800829	Silver	SW 6010B	mg/kg	0.00	10.0	134	1340	1340	1100	82.1%	75-125%
800829	Thallium	SW 6010B	mg/kg	0.00	5.00	134	670	670	594	88.7%	75-125%
800829	Vanadium	SW 6010B	mg/kg	77.1	5.00	134	670	747	697	92.6%	75-125%
800829	Zinc	SW 6010B	mg/kg	88.6	5.00	134	670	758	752	99.1%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services





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

Dry Weight Calculations

Date Calculated: 5/16/2012

	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	11.752		61.4	30.4125	30.4	2.00	5.18
Nitrate as N	6.176		61.4	15.9826	16.0	4.00	10.4
Hexavalent Chromium	23.2007		61.4	60.0401	60.0	1.98	5.11
Hexavalent Chromium - Dup	23.7984		61.4	61.5868	61.6	1.98	5.11
Hexavalent Chromium - MS	180.1715		61.4	466.258	466	10.1	26.1
Hexavalent Chromium - IMS	1096.533		61.4	2837.671	2840	40.0	104
Hexavalent Chromium - PDMS	126.5500		61.4	327.493	327	9.88	25.6
Antimony	44.03	5.00	61.4	113.9434	114	2.59	6.70
Arsenic	ND	5.00	61.4	ND	ND	2.59	6.70
Barium	29.47	5.00	61.4	76.26417	76.3	2.59	6.70
Beryllium	ND	20.0	61.4	ND	ND	0.891	2.31
Cadmium	6.195	5.00	61,4	16.0318	16.0	2.59	6.70
Chromium	2965	10.0	61.4	7672.9983	7670	5.177	13.4
Cobalt	2,049	5.00	61.4	5.3025	ND	2.59	6.70
Copper	4.493	2.00	61.4	11.6272	11.6	1.04	2.68
Lead	2.906	5.00	61.4	7.5203	7.52	2.59	6.70
Manganese	176.6	5.00	61.4	457.0157	457	2.59	6.70
Mercury	0.09208	10.0	61.4	0.23829	0.238	0.0891	0.231
Molybdenum	5.833	10.00	61.4	15.0950	15.1	5.18	13.4
Nickel	9.737	5.00	61.4	25.1980	25.2	2.59	6.70
Selenium	ND	5.00	61.4	ND	ND	2.59	6.70
Silver	ND	10.0	61.4	ND	ND	5.18	13.4
Thallium	ND	5.00	61.4	ND	ND	2.59	6.70
Vanadium	29.79	5.00	61.4	77.0923	77.1	2.59	6.70
Zinc	34.23	5.00	61.4	88.5824	88.6	2.59	6.70

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

where:

Sampleww = Sample result in wet weight



TOTAL SOLIDS BY SM 2540 B

Date of Analysis:

04/04/12

Analytical Batch: 04SOLID12A Oven Temp, °C: 105

Lab No.	Dish Number	Weight of dish, g	Wt of wet sample, g	Wt of wet sample+ dish, g	Wt of dried residue+dish,g	Wt of dried residue, g	% Total Solids	% Moisture
800829	1	1.3040	4.4925	5.7965	3.0400	4 7000		
800829 D	2	1.2956	4.7577	6.0533	3.2083	1,7360	38.642	61.358
				9,000	3.2063	1,9127	40.202	59.798
					9			
								
				5477,557,55				
			,					
								
				-				
			——————————————————————————————————————					
								

Comple ID	Rel	ative Percent Difference	
Sample ID 800829	Sample 38.640	Sample Dup 40.202	RPD
			4.0

% Total Solids =

(A-B)*100 =

Weight of dried residue x 100
Weight of wet sample

Where:

A = Weight of dried Residue + Dish, g

B = Weight of dish, g

C = Weight of wet sample + Dish, g

_G_Savani Analyst Name

Analyst Signature

Reviewer Name

Peviewer Signature

TRUESC 14201 Fr (714)730 www.tru

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-355] **800829**

TURNAROUND TIME

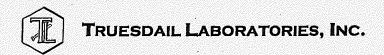
10 Days

DATE 04/03/12 PAGE 1 OF

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COMPANY	CH2M HILL / E2)								Si/						7			7		7		
PROJECT NAME	PG&E Topock II	M3							(includes M.											//	/	COMMENT	S
PHONE -	530-229-33	03	FAX _530	-339-3303		/	/ ,	/ ,	$\langle \eta_{c} \rangle$	/ ,	/ ,	/ ,	/ ,	/ ,	/ ,	/	/ ,	/ ,	/ ,	/ [.]	/		
-	155 Grand Ave						_ /		<u>.</u>														
2	Oakland, CA 94	612				/\$	0/\$		×/	/_	. /									[\vec{x}]			
P.O. NUMBER	408401.01.D M					10/	\ \frac{7}{40}	(B)	/ ,	(8) M	/ .	/ ,	/ ,	/ ,	/ ,	/	/ ,	/ ,	/ ,	<i> §</i>			
SAMPLERS (SIGNATU	URE CI	Congut	***************************************			Bioass (300.0) F, NO.2	Metals (Cr6 (72, 6010B) Title 2	66/	M (80109) M										THER OF CONTAINERS			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	Anio	Bioas	Metal	3	Meta		\angle	\angle	_					_	NCIVIE				,
SC-Sludge-W	VDR-355	04/03/12	13:57	Sludge	Х		Х	Х	Х										4				
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Constitution of the state of th																			4	TOTAL NU	MBER O	F CONTAINE	RS

		CHAIN OF CUSTO		S	AMPLE C	CONDIT	IONS					
Signature (Relinquishe	ed) C.Kmqut	Printed C. Knig Name	Company/ Agency	CHZMHILL	Date/ 4 Time	3/12,15:45	RECEIVED	COOL	ď	WAR	м□ З	-4° ℃
Signature (Received)	NS	Printed Name	Company/ Agency	H1	Date/ 4-3 Time	15:45	CUSTODY SE	EALED	YES		NO 🗹	,
Signature (Relinquishe	ed) Jel 3	Printed Name 1100	Company/ Agency	121	Date/ イー】 Time	42	SPECIAL REQUIR	EMENTS:			***************************************	
Signature (Received)	Luda	Printed Shaku. Name Shaku	Company/ WW4 Agency	TLI	Date/ Time 4/3/2	221:30						
Signature (Relinquishe	ed)	Printed Name	Company/ Agency		Date/ Time							
Signature (Received)		Printed Name	Company/ Agency		Date/ Tìme		4					



Sample Integrity & Analysis Discrepancy Form

Client.	E2	Lab # <u>\$00939</u>
Date D	elivered:ºººº / ºººº / 12 Time: ᠘/፡ኝ♡ · By: □Mail ÞÓI	Field Service
1, ,	Was a Chain of Custody received and signed?	ÆİYes □No □N/A
<u>2</u> , i	Does Customer require an acknowledgement of the COC?	□Yes □No ÞN/A
	Are there any special requirements or notes on the COC?	□Yes □No ΦN/A
1	f a letter was sent with the COC, does it match the COC?	□Yes □No ∌N/A
) 	Nere all requested analyses understood and acceptable?	odYes □No □N/A
	Nere samples received in a chilled condition? Temperature (if yes)? 3.4° C	odYes □No □N/A
	Vere samples received intact i.e. broken bottles, leaks, air bubbles, etc)?	. Æ(Yes □No □N/A
٩V	Vere sample custody seals intact?	□Yes □No ÆN/A
E	oes the number of samples received agree with COC	DYes □No □N/A
D	id sample labels correspond with the client ID's?	☑Yes □No □N/A
	id sample labels indicate proper preservation? reserved (if yes) by: □ Truesdail □Client	OPYes ONO MINA
И	/ere samples pH checked? pH =	□Yes □No ÆN/A
	ere all analyses within holding time at time of receipt? not, notify Project Manager.	Afres □No □N/A
	ave Project due dates been checked and accepted? urn Around Time (TAT):	Tayes ONO ON/A
	ample Matrix: □Liquid □Drinking Water □Ground V	
×	Sludge □Soil □Wipe □Paint □Solid □	Other
Co	omments:	

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

April 17, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-193, GROUNDWATER MONITORING

PROJECT, TLI NO.: 800830

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-193 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on April 3, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael the

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 800830

Date: April 17, 2012 Collected: April 3, 2012 Received: April 3, 2012

ANALYST LIST

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



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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

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

Analytical Results Summary

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

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results: Results below 0.01 will have two (2) significant figures.

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

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Page 1 of 6

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Printed 4/17/2012

Laboratory No. 800830

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

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

Field ID Lab ID Collected Matrix PE-01-193 800830-001 04/03/2012 13:33 Water TW-03D-193 800830-002 04/03/2012 13:40 Water Specific Conductivity - EPA 120.1 Batch 04EC12A Parameter Unit Analyzed DF MDL RL Result 800830-001 Specific Conductivity umhos/cm 04/04/2012 1.00 0.0950 2.00 4910 800830-002 Specific Conductivity umhos/cm 04/04/2012 1.00 0.0950 2.00 8450 Method Blank Parameter Unit DF Result Specific Conductivity umhos 1.00 ND Duplicate Lab ID = 800831-002 Parameter Unit DF Result Expected **RPD** Acceptance Range Specific Conductivity umhos 1.00 7750 7760 0.129 0 - 10Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 701 706 99.3 90 - 110 MRCCS - Secondary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 703 706 99.6 90 - 110 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 960. 998 96.2 90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 2 of 6 Printed 4/17/2012

Chrome VI by EPA 218.6

Batch 04CrH12B

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
800830-001 Chromium, Hexa	valent	ug/L	04/04	/2012 12:50	1.00	0.0260	0.20	7.4
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	800830-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 7.36	Expected 7.36	RPD 0.0367	Acceptance Range 0 - 20		
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.196	Expected 0.200	F	Recovery 97.8	Accepta 70 - 130	ance Range)
Parameter Chromium, Hexavalent Matrix Spìke	Unit ug/L	DF 1.00	Result 5.02	Expected 5.00	F	Recovery 100.	90 - 110	ance Range) 800830-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 17.2	Expected/Adde 17.4(10.0)	ed F	Recovery 98.4	90 - 110	ance Range) 800831-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.11	Expected/Adde 5.09(5.00)	ed F	Recovery 100.	Acceptance Rar 90 - 110 Lab ID = 800831-	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.04	Expected/Adde 1.09(1.00)	ed F	Recovery 94.5	90 - 110	ance Range) 800831-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 50.0	Result 1720	Expected/Adde 1770(1000)	ed F	Recovery 94.8	90 - 110	ance Range) 800831-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 10.0	Result 11.1	Expected/Adde 11.1(10.0)	ed F	Recovery 99.7	90 - 110	ance Range) 800831-003
Parameter Chromium, Hexavalent	Unit DF Result Expected/Added Recovery avalent ug/L 1.00 0.00 1.00(1.00) 0.00				-	Acceptance Range 90 - 110		



Client: E2 Consulting Eng	ineers, In		oject Name: oject Numbe	PG&E Topock P r: 424973.01.DM	roject	Page 3 of 6 Printed 4/17/2012		
Matrix Spike						Lab ID = 8	800831-003	
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 5.00	Result 5.89	Expected/Added 5.87(5.00)	d Recovery 100.	Acceptance Range 90 - 110		
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.03	Expected 5.00	Recovery 101.	Acceptar 90 - 110	nce Range	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptar 95 - 105	nce Range	
Parameter Chromium, Hexavalent	,					Acceptar 95 - 105	nce Range	
Chromium, Hexavalent by	/ SM 350	0-Cr B	Batch	04CrH12A				
Parameter		Unit	Anal	yzed D	F MDL	RL	Result	
800830-002 Chromium, Hexav	/alent	ug/L	04/04	/2012 15:33 10	0.0 15.0	100.	937.	
Method Blank					TO THE STATE OF TH			
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND			1 ah 10 - 8	00830-002	
	1.124	5.5	D	E t d	DDD			
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 10.0	Result 937.	Expected 937	RPD 0.0213	Acceptar 0 - 20	ice Range	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 108.	Expected 100.	Recovery 108.	90 - 110	oce Range 00830-002	
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 10.0	Result 1920	Expected/Added	Recovery 98.9	Acceptar 85 - 115	ice Range	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 57.6	Expected 60.0	Recovery 96.0	Acceptar 90 - 110	nce Range	
Parameter Chromium, Hexavalent	Unit ug/L	ter Unit DF Result Expected Recovery				Acceptar 90 - 110	ice Range	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Printed 4/17/2012

Project Number: 424973.01.DM

Total Dissolved Solids by SM 2540 C

Batch 04TDS12A

i otai Dissolveu Solius	UY 3191 234	U	Datci	1 041D312A						
Parameter	meter Unit				DF	MDL	RL	Result		
800830-001 Total Dissolved	Solids	mg/L	04/04	1/2012	1.00	0.400	125 2800			
800830-002 Total Dissolved	Solids	mg/L	04/04	1/2012	1.00	0.400	0.400 250. 530			
Method Blank										
Parameter	Unit	DF	Result							
Total Dissolved Solids	mg/L	1.00	ND							
Duplicate							Lab ID =	800831-001		
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range		
Total Dissolved Solids	mg/L	1.00	4520	4430		2.01	0 - 5	•		
Lab Control Sample										
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range		
Total Dissolved Solids	mg/L	1.00	455	500.		91.0	90 - 110)		



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Dissolved			Batch	041012A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
800830-001 Chromium		ug/L	04/10	0/2012 20:00 5.0	00 0.110	1.0	7.5
800830-002 Chromium		ug/L	04/10)/2012 20:28 10	.0 0.220	2.0	929.
Method Blank				-			
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Duplicate						Lab ID =	800830-001
Parameter	Unit	DF	Result	Expected	RPD	•	ance Range
Chromium	ug/L	5.00	7.15	7.52	5.09	0 - 20	
Low Level Calibration '	Verification	l					
Parameter	Unit	DF	Result	Expected	Recovery	•	ance Range
Chromium	ug/L	1.00	0.176	0.200	88.0	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	90.7	100.	90.7	85 - 115	5
Matrix Spike						Lab ID =	800830-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	99.8	108.(100.)	92.3	75 - 125	5
Matrix Spike Duplicate						Lab ID =	800830-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	101.	108.(100.)	93.2	75 - 125	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	9.94	10.0	99.4	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.64	10.0	96.4	90 - 110)



Client: E2 Consulting E	ngineers, Inc.		oject Name: oject Number	PG&E Topock F : 424973.01.DM	Project	Page 6 of 6 Printed 4/17/2012		
MRCVS - Primary								
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 90 - 110		
Parameter Chromium Interference Check S	Unit ug/L Standard A	DF 1.00	Result 9.58	Expected 10.0	Recovery 95.8	Acceptance Range 90 - 110		
Parameter Chromium Interference Check S	Unit ug/L Standard A	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Parameter Chromium Interference Check S	Unit ug/L Standard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Parameter Chromium Interference Check S	Unit ug/L Standard AB	DF 1.00	Result 9.94	Expected 10.0	Recovery 99.4	Acceptance Range 80 - 120		
Parameter Chromium Serial Dilution	Unit ug/L	DF 1.00	Result 9.77	Expected 10.0	Recovery 97.7	Acceptance Range 80 - 120 Lab ID = 800830-002		
Parameter Chromium	Unit ug/L	DF 50.0	Result 917.	Expected 929	RPD 1.28	Acceptance Range 0 - 10		

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS12A

Date Calculated: 4/4/12

Laboratory Number	Sample volume, ml	Initial weight,g	t,g weight,g weight,g g Yes/No		Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF		
BLANK	100	109.0687	109.0691	109.0689	0.0002	No	0.0002	2.0	25.0	ND	1
800804-16	100	72.3936	72.4530	72.4528	0.0002	No	0.0592	592.0	25.0	592.0	1
800813-11	100	75,3045	75.3621	75.3618	0.0003	No	0.0573	573.0	25.0	573.0	1
800813-12	100	75,6546	75.7109	75.7105	0.0004	No	0.0559	559.0	25.0	559.0	1
800830-1	20	71.3052	71.3615	71.3613	0.0002	No	0.0561	2805.0	125.0	2805.0	1
800830-2	10	75.6757	75.7291	75.7287	0.0004	No	0.0530	5300.0	250.0	5300.0	1
800831-1	10	50.1641	50.2086	50.2084	0.0002	No	0.0443	4430.0	250.0	4430.0	1
800831-2	10	49.6824	49.7271	49.7268	0.0003	No	0.0444	4440.0	250.0	4440.0	1
800831-3	2	50.1269	50,1895	50.1892	0.0003	No	0,0623	31150.0	1250,0	31150.0	1
800831-1D	10	51.5081	51.5536	51.5533	0.0003	No	0.0452	4520.0	250.0	4520.0	1
LCS	100	110.9525	110.9988	110.998	0.0008	Yes	0.0455	455.0	25.0	455.0	1

Calculation as follows:

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

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)

Analyst Printed Name

Analyst Signature

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS12A Date Calculated: 4/4/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
800804-16	762	0.78	495.3	1.20
800813-11	915	0.63	594.75	0.96
800813-12	897	0.62	583.05	0.96
800830-1	4910	0.57	3191.5	0.88
800830-2	8450	0.63	5492.5	0.96
800831-1	7510	0.59	4881.5	0.91
800831-2	7750	0.57	5037.5	0.88
800831-3	40700	0.77	26455	1.18
800831-1D	7510	0.60	4881.5	0.93
		* ***		
	JEAN.		-	
nur.				





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

CHAIN OF CUSTODY RECORD

COC Number

[IM3Plant-EW-193]	
-------------------	--

800 830

10 Days TURNAROUND TIME DATE 04/03/12 PAGE 1

OF 1

											V		69	V	,									
COMPANY	CH2M HILL /E	2							/	7	7	7	$\overline{}$	$\overline{}$		7	7	/	7		1	7 .	OMMEN	ITS
PROJECT NAME	PG&E Topock	IM3Plant-E\	N																		/ /	C.	Ommen	113
PHONE	530-229-3	303	FAX _53	0-339-3303_		,	$\langle e_{e_0} \rangle$	/ ,	/ ,	/ ,	/ ,	/ ,	/ ,	/	/	/ ,	/ ,	/	/	/ /	_ /			
ADDRESS	155 Grand Ave	e Ste 1000					ap till		/										/					
	Oakland, CA 9	4612					:/_	/ 5	j.,											AF.	/			
P.O. NUMBER	424973.01.Di	М				\g \g	\frac{\gamma}{g}	$\frac{1}{2}$		/_ ,	/ ,	/ ,	/				/ ,	/	/ ,	[§				
SAMPLERS (SIGNA	ATURE C	. Cuey ht				Cr(M) (200,2),	PH (17 00°C'B)	10s (120)	Cr(V), (50.7)	7 (278.6)										WBER OF CONTAINEDS				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	Disse		Ha																	
PE-01-193		04/03/12	13:33	Ground water	Х		Х	X	X										4			DH=	62.	7.00.
TW-03D-1	93	04/03/12	13:40	Ground water	Х	Х	Х	Х											4			DH=		
																					1			
	* 1000 special to 2 of assumer A (force) to	S of the same and		e de la compania del compania del compania de la compania del compania de la compania de la compania del compania de la compania de la compania de la compania del compania		<i>5</i> 44.	ra C	20	- 3-9 P	100	P	M		110	m	B.								
		CRI	OF CONTRACTOR	A VIOLET A VIOLET		5,3	3 4	J CA		9 1 50		44	IVI	FIF	ri i s									
	Leva		ŌC		unika imanisimak		16	ini)	-0		1/2	Lle	C	G	A			<u> Enmonmonana</u>	8	тотл	AL NUMB	SER OF C	CONTAI	VERS
	reconstruction of 1 arts 1 of the selection and or many	THE RESERVE THE RESERVE TO THE RESERVE THE		T A																				

CHA	AIN OF CUSTODY SIG	SAMPLE CONDITIONS		
Signature (Relinquished)	Printed C. Knight	Company/ CH2MHLL Agency	Date/ 4/3/12 Time 15:45	RECEIVED COOL WARM 3. 4 00
Signature (Received)	Printed Hypolito	Company/ Agency	Date/ 4 - 3 - 1 4 Time 15745	CUSTODY SEALED YES 🔲 NO 🗹
Signature (Relinquished)	Printed Apolite	Company/ Agency	Date/ 4-1-18 Time 2130	SPECIAL REQUIREMENTS:
Signature (Received) And a	Printed Hunburna	Company/ Agency 72 2	Date/ 4/3/12 21:30	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Tìme	

Subject: FW: Topock COC discrepancy - SDG 800830

From: "Shawn.Duffy@CH2M.com" < Shawn.Duffy@CH2M.com>

Date: Wed, 4 Apr 2012 19:39:30 -0400 **To:** Sean Condon <seanc@truesdail.com>

See response below from Chris.

Shawn

----Original Message---From: Knight, Chris/TCK

Sent: Wednesday, April 04, 2012 3:57 PM

To: Duffy, Shawn/RDD

Subject: RE: Topock COC discrepancy - SDG 800830

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

Chris

----Original Message----

From: Duffy, Shawn/RDD

Sent: Wednesday, April 04, 2012 1:35 PM

To: Knight, Chris/TCK

Subject: FW: Topock COC discrepancy - SDG 800830

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

Shawn

----Original Message----

From: Sean Condon [mailto:seanc@truesdail.com]

Sent: Wednesday, April 04, 2012 1:14 PM

To: Duffy, Shawn/RDD

Subject: Topock COC discrepancy - SDG 800830

Hi Shawn,

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

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

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

Sean Condon Project Manager

Truesdail Laboratories, Inc.

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

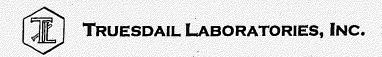
Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials	7
3/16/12	800534-1	9.5	N/A	N/A	N/A	149	1
,	-2	<i>\$</i>	Í	1		1,1	-
	-3					1/1	-
	-4						1
	-5						
↓	V ~6	V	V	V			-
3/21/12	800584	7.0	5mL	9,5	10:1500	m	1
3/23/12	800651-1	9.5	NA	NA	NA	m	
	-2					Ĭ	
<u></u>	√ -3	4	4	4	4	7	
3/28/12	800732	7,0	5mL	9,5	9:25cm	mf	
3/28/12	800732	7	SinL	9.5	9:30 Am		
3/28/12	800 742	7.0	5mL	9,5	10:35am	my	·
3/29/12	800756	9.5	NA	NA	NAMA	TH	- 1
3/30/12	800770-1	9,5	NA	NA	130am	m	Gu 4/2/12
	-2				N/A		
\	- -3	+	4	<u>†</u>	→ N/A	$\overline{\uparrow}$	-\
4/4/12	800830 -1	7.0	2mL	9,5	9:30an	Mt	
4/4/12	800830 -2	7.0	2mL	9.5	9:45am	MI	
4/4/12	900831 -1	7.0	2nL	9.5	10:00 am	auf	
	-2				10:10am		
4	- 3	·F	4	+	10:20 am	\(\rightarrow \)	
	3						
	·						
			·				
					·		,

G- 4/1/2

Turbidity/pH Check

			ıuı	bidity/pH C	neck		
!	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
	900646	12	12	3/26/12	KK	Ves :	3010 A
	800 648			1		Ti	3/21/1
	800679				1		
	7,90680	< \$	12	3-27-12	BE	N°0	No
	800691	<1	<2	1	1	1	1
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	80=71011-5		-572			1	3 -> xcs 9.45 "
	800711(1-8)		-772				-8 → × es 9:45 "
	80071211-8		7,872			1 .1	7,8 -> xc3 9:45 "
	800713(1-8)		798 72				798 → × c) 9:45 ·
	200 714U-8)		79872				798 -> ×c59:45:
	800 715L1-10)		72				XCS 9:45 AM
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	80- 751	۲۱		3.27-2-		No	NO
	800 756	< \	<2 >2 0 10 t	3.27-12		Yes	340A ************************************
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	800 77811-71 800 78 1	105 4-2-	2 42	J		BE 4-2-12	NO 7:35AM
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Sample Integrity & Analysis Discrepancy Form

Clien	nt: <u>E2*</u>	Lab #_ <i>\$00\$30</i>
Date	Delivered: <u>04103</u> /12 Time: 2/:30 By: □Mail ØF	ield Service □Client
1. ,	Was a Chain of Custody received and signed?	ØYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ∞⊠N/A
3 .	Are there any special requirements or notes on the COC?	□Yes □No □N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ÆN/A
5.	Were all requested analyses understood and acceptable?	ØYes □No □N/A
5.	Were samples received in a chilled condition? Temperature (if yes)? 3. 4° C Were samples received intact	⊴Y es □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	∞dYes □No □N/A
	Were sample custody seals intact?	>□Yes □No ÆN/A
	Does the number of samples received agree with COC?	JEYes □No □N/A
0.	Did sample labels correspond with the client ID's?	ﷺ Yes □No □N/A
	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No ÆN/A
2.	Were samples pH checked? pH = <u>See</u> C. O. C	⊠rYes □No □N/A
	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	-ØYes □No □N/A
l. ,	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	d⊋Yes □No □N/A
	<u>Sample Matrix:</u> □Liquid □Drinking Water ဩGround W □Sludge □Soil □Wipe □Paint □Solid □C	•
S. (Comments:	
7. 8	Sample Check-In completed by Truesdail Log-In/Receiving: <u></u>	l. Shabunin

Truesdail Laboratories, Inc.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

May 2, 2012

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

14201 FRANKLIN AVENUE

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

Dear Mr. Duffy:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-355 PROJECT, GROUNDWATER SUBJECT:

MONITORING,

TLI NO.: 800831

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-355 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 April 3, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The Terbium (Tb) internal standard recovery for the calibration blank analyzed at 19:25 on April 10, 2012 in Analytical Batch 041012A for Total Antimony, Thallium, and Lead by EPA 200.8 was 130.4% which exceeds the upper limit of 130%. All other QA/QC were within acceptable limits and all results for samples associated with this internal standard were below the reporting limit. Mr. Shawn Duffy of CH2M Hill was notified and accepted the data.

The matrix spike recovery for Total Silver by EPA 200.8 in batch 041712B was 53.4%, which was outside the acceptance limits of 75-125%. A post-spike addition was then performed on the sample and had a recovery of 76.2%, which is within the acceptance limits of 75-125%. Mr. Duffy was notified and accepted the data.

The Lithium (Li) internal standard recovery for the Mid-range Calibration Check Standard (MRCCS) analyzed at 13:16 on April 20, 2012 in Analytical Batch 042012A for Total Beryllium by EPA 200.8 was 147% which exceeds the upper limit of 130%. All other QA/QC were within acceptable limits and the sample result was below the reporting limit. Mr. Duffy was notified and accepted the data.

No other violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

40 - Mona Nassimi

Manager, Analytical Services

Michael It

Michael Ngo

Quality Assurance/Quality Control Officer 002

EXCELLENCE IN INDEPENDENT TESTING



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

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

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 424973.01.DM

Laboratory No.: 800831

Date: May 2, 2012 Collected: April 3, 2012 Received: April 3, 2012

ANALYST LIST

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

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

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

Laboratory No.: 800831 Date Received: April 3, 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
800831-001	SC-700B-WDR-355	E120.1	NONE	4/3/2012	14:29	EC	7510	umhos/cm	2.00
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Aluminum	ND	ug/L	50.0
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	BORON	1030	ug/L	200
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Iron	ND	ug/L	20.0
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Molybdenum	18.9	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Zinc	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Antimony	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Arsenic	ND	ug/L	1.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Barium	11.8	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Chromium	ND	ug/L	1.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Copper	ND	ug/L	5.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Lead	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Manganese	3.1	ug/L	1.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Nickel	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E218.6	LABFLT	4/3/2012	14:29	Chromium, hexavalent	ND	ug/L	0.20
800831-001	SC-700B-WDR-355	E300	NONE	4/3/2012	14:29	Fluoride	2.11	mg/L	0.500
800831-001	SC-700B-WDR-355	E300	NONE	4/3/2012	14:29	Nitrate as N	3.06	mg/L	1.00
800831-001	SC-700B-WDR-355	E300	NONE	4/3/2012	14:29	Sulfate	564	mg/L	25.0
800831-001	SC-700B-WDR-355	SM2130B	NONE	4/3/2012	14:29	Turbidity	0.108	NTU	0.100
800831-001	SC-700B-WDR-355	SM2540C	NONE	4/3/2012	14:29	Total Dissolved Solids	4430	mg/L	250
800831-001	SC-700B-WDR-355	SM4500NH3D	NONE	4/3/2012	14:29	Ammonia-N	ND	mg/L	0.500
800831-001	SC-700B-WDR-355	SM4500NO2B	NONE	4/3/2012	14:29	Nitrite as N	ND	mg/L	0.0050

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		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
800831-002	SC-100B-WDR-355	E120.1	NONE	4/3/2012	14:47	EC	7760	umhos/cm	2.00
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Aluminum	ND	ug/L	50.0
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	BORON	1070	ug/L	200
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Iron	ND	ug/L	20.0
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Molybdenum	20.4	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Zinc	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Antimony	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Arsenic	3.4	ug/L	1.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Barium	26.0	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Chromium	804	ug/L	1.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Copper	ND	ug/L	5.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Lead	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Manganese	6.0	ug/L	1.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Nickel	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E218.6	LABFLT	4/3/2012	14:47	Chromium, hexavalent	768	ug/L	10.0
800831-002	SC-100B-WDR-355	E300	NONE	4/3/2012	14:47	Fluoride	2.59	mg/L	0.500
800831-002	SC-100B-WDR-355	E300	NONE	4/3/2012	14:47	Nitrate as N	3.20	mg/L	1.00
800831-002	SC-100B-WDR-355	E300	NONE	4/3/2012	14:47	Sulfate	543	mg/L	50.0
800831-002	SC-100B-WDR-355	SM2130B	NONE	4/3/2012	14:47	Turbidity	0.134	NTU	0.100
800831-002	SC-100B-WDR-355	SM2540C	NONE	4/3/2012	14:47	Total Dissolved Solids	4440	mg/L	250
800831-002	SC-100B-WDR-355	SM4500NH3D	NONE	4/3/2012	14:47	Ammonia-N	ND	mg/L	0.500
800831-002	SC-100B-WDR-355	SM4500NO2B	NONE	4/3/2012	14:47	Nitrite as N	ND	mg/L	0.0050



		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
800831-003	SC-701-WDR-355	E120.1	NONE	4/3/2012	14:14	EC	40300	umhos/cm	2.00
800831-003	SC-701-WDR-355	E200.7	NONE	4/3/2012	14:14	Molybdenum	113	ug/L	10.0
800831-003	SC-701-WDR-355	E200.7	NONE	4/3/2012	14:14	Zinc	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Antimony	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Arsenic	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Barium	68.5	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Beryllium	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Cadmium	ND	ug/L	3.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Chromium	3.5	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Cobalt	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Copper	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Lead	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Manganese	24.8	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Mercury	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Nickel	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Selenium	19.4	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Silver	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Thallium	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Vanadium	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E218.6	LABFLT	4/3/2012	14:14	Chromium, hexavalent	ND	ug/L	2.0
800831-003	SC-701-WDR-355	E300	NONE	4/3/2012	14:14	Fluoride	13.8	mg/L	0.500
800831-003	SC-701-WDR-355	SM2540C	NONE	4/3/2012	14:14	Total Dissolved Solids	31200	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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Page 1 of 31

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

Printed 5/2/2012

Laboratory No. 800831

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

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

	`	Jampioo I II						
Field ID				Lab ID	Coll	lected	Matri	x
SC-700B-WDR-355				800831-001	04/03/2012 14:29		Wate	er
SC-100B-WDR-355				800831-002	04/03/	/2012 14:47	Water	
SC-701-WDR-355				800831-003	04/03/	/2012 14:14	Wate	er
Anions By I.C EPA	300.0		Batch	04AN12C				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
800831-001 Fluoride		mg/L	04/04	/2012 11:47	5.00	0.155	0.500	2.11
Nitrate as Nit	rogen	mg/L	04/04	/2012 11:47	5.00	0.135	1.00	3.06
Sulfate	J	mg/L	04/04	/2012 15:16	50.0	5.70	25.0	564.
800831-002 Fluoride		mg/L	04/04	/2012 11:59	5.00	0.155	0.500	2.59
Nitrate as Nit	rogen	mg/L	04/04	/2012 11:59	5.00	0.135	1.00	3.20
Sulfate	_	mg/L	04/04	/2012 15:27	100	11.4	50.0	543.
800831-003 Fluoride		mg/L	04/04	/2012 12:10	5.00	0.155	0.500	13.8
Method Blank								
Parameter	Unit	DF	Result					
Fluoride	mg/L	1.00	ND					
Sulfate	mg/L	1.00	ND					
Nitrate as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID =	800831-002
Parameter	Unit	DF	Result	Expected	F	RPD	· ·	nce Range
Fluoride	mg/L	5.00	2.57 2.59			0.736	0 - 20	
Sulfate	mg/L	100	546.	543		0.604	0 - 20	
Nitrate as Nitrogen	mg/L	5.00	3.26	3.20		1.92	0 - 20	



Client: E2 Consulting Eng		oject Name: oject Number	Page 2 of 31 Printed 5/2/2012			
Lab Control Sample						
Parameter Fluoride Sulfate Nitrate as Nitrogen Matrix Spike	Unit mg/L mg/L mg/L	DF 1.00 1.00 1.00	Result 4.13 20.0 4.00	Expected 4.00 20.0 4.00	Recovery 103. 99.8 99.9	Acceptance Range 90 - 110 90 - 110 90 - 110 Lab ID = 800831-002
Parameter Fluoride Sulfate Nitrate as Nitrogen MRCCS - Secondary	Unit mg/L mg/L mg/L	DF 5.00 100 5.00	Result 22.8 1560 23.7	Expected/Added 22.6(20.0) 1540(1000) 23.2(20.0)	Recovery 101. 102. 103.	Acceptance Range 85 - 115 85 - 115 85 - 115
Parameter Fluoride Sulfate Nitrate as Nitrogen MRCVS - Primary	Unit mg/L mg/L mg/L	DF 1.00 1.00 1.00	Result 4.13 20.0 4.00	Expected 4.00 20.0 4.00	Recovery 103. 100. 100.	Acceptance Range 90 - 110 90 - 110 90 - 110
Parameter Fluoride MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.15	Expected 3.00	Recovery 105.	Acceptance Range 90 - 110
Parameter Fluoride MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.14	Expected 3.00	Recovery 105.	Acceptance Range 90 - 110
Parameter Sulfate MRCVS - Primary	Unit mg/L	DF 1.00	Result 15.0	Expected 15.0	Recovery 100.	Acceptance Range 90 - 110
Parameter Sulfate MRCVS - Primary	Unit mg/L	DF 1.00	Result 15.0	Expected 15.0	Recovery 100.	Acceptance Range 90 - 110
Parameter Nitrate as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.00	Expected 3.00	Recovery 99.8	Acceptance Range 90 - 110
Parameter Nitrate as Nitrogen	Unit mg/L	DF 1.00	Result 2.99	Expected 3.00	Recovery 99.5	Acceptance Range 90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Batch 04NO212C Nitrite SM 4500-NO2 B DF MDL RL Result Analyzed Unit Parameter 0.0050 ND 04/04/2012 18:04 1.00 0.000400 mg/L 800831-001 Nitrite as Nitrogen 0.000400 0.0050 ND 04/04/2012 18:05 1.00 800831-002 Nitrite as Nitrogen mq/L Method Blank Unit DF Result Parameter ND mg/L 1.00 Nitrite as Nitrogen Lab ID = 800831-001 Duplicate Expected **RPD** Acceptance Range DF Result Unit Parameter 0 - 200 0.00 1.00 ND mg/L Nitrite as Nitrogen Lab Control Sample Acceptance Range Recovery Expected Unit DF Result Parameter 0.0400 103. 90 - 110 1.00 0.0411 mg/L Nitrite as Nitrogen Lab ID = 800831-001 Matrix Spike Expected/Added Recovery Acceptance Range Unit DF Result Parameter 85 - 115 104. 0.0200(0.0200)1.00 0.0209 Nitrite as Nitrogen mg/L Lab ID = 800831-001 Matrix Spike Duplicate Acceptance Range Expected/Added Recovery Result Unit DF Parameter 0.0200(0.0200) 101 85 - 115 0.0202 1.00 mg/L Nitrite as Nitrogen MRCCS - Secondary Result Expected Recovery Acceptance Range Unit DF Parameter 90 - 110 101 0.0200 1.00 0.0202 Nitrite as Nitrogen mg/L MRCVS - Primary Acceptance Range Recovery Unit DF Result Expected Parameter 0.0200 104. 90 - 110 0.0207 1.00 mg/L Nitrite as Nitrogen



Unit

umhos

Unit

umhos

Parameter

Parameter

Specific Conductivity

Specific Conductivity

MRCVS - Primary

DF

1.00

DF

1.00

Report Continued

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Specific Conductivity -	EPA 120.1	Batch 04EC12A						
Parameter		Unit Analyzed		alyzed	DF	MDL	RL	Result
800831-001 Specific Conduc	800831-001 Specific Conductivity		:m 04/04	04/04/2012		0.0950	2.00	7510
800831-002 Specific Conductivity		umhos/c	m 04/04	04/04/2012		0.0950	2.00	7760
800831-003 Specific Conductivity		umhos/c	m 04/04	4/2012	1.00	0.0950	2.00	40300
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND				i ah ID	800831-002
Duplicate								
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7750	Expected 7760	F	RPD 0.129	Accepta 0 - 10	ance Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 701	Expected 706	F	Recovery 99.3	Accepta 90 - 110	ance Range)

Result

Result

960.

703

Expected

Expected

706

998

Recovery

Recovery

96.2

99.6

Acceptance Range

Acceptance Range

90 - 110

90 - 110



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Chrome VI by EPA 218.6	3 5 45 17.		Batch 04CrH12B					
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
800831-001 Chromium, Hex	avalent	ug/L	04/04	/2012 13:11	1.00	0.0260	0.20	ND
800831-002 Chromium, Hex	avalent	ug/L	04/04	/2012 13:22	50.0	1.30	10.0	768.
800831-003 Chromium, Hex	avalent	ug/L	04/04	/2012 17:40	10.0	0.260	2.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	800830-001
Parameter	Unit	DF	Result	Expected		RPD	•	ance Range
Chromium, Hexavalent	ug/L	1.00	7.36	7.36		0.0367	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200		97.8	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00		100.	90 - 110	
Matrix Spike							Lab ID =	800830-001
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	17.2	17.4(10.0)		98.4	90 - 11	
Matrix Spike							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	5.00	5.11	5.09(5.00)		100.	90 - 11	
Matrix Spike								800831-001
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.09(1.00)		94.5	90 - 11	
Matrix Spike								: 800831-002
Parameter	Unit	DF	Result	Expected/A		Recovery	•	ance Range
Chromium, Hexavalent	ug/L	50.0	1720	1770(1000))	94.8	90 - 11	
Matrix Spike								: 800831-003
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	10.0	11.1	11.1(10.0)		99.7	90 - 11	
Matrix Spike								= 800831-003
Parameter	Unit	DF	Result	Expected/A	\dded	Recovery	Accept 90 - 11	ance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)		0.00	90 - 11	U



Client: E2 Consulting Eng	ineers, Inc		roject Name: roject Number:	PG&E Topock Pro 424973.01.DM	ject	Page 6 of 31 Printed 5/2/2012
Matrix Spike						Lab ID = 800831-003
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 5.00	Result 5.89	Expected/Added 5.87(5.00)	Recovery 100.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.03	Expected 5.00	Recovery 101.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105



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Batch 040612A Metals by EPA 200.7, Total Analyzed DF MDL RL Result Unit Parameter 04/06/2012 11:10 1.00 4.02 10.0 18.9 ug/L 800831-001 Molybdenum 1.00 4.02 10.0 20.4 04/06/2012 11:16 ug/L 800831-002 Molybdenum 4.02 10.0 113. 04/06/2012 11:22 1.00 ug/L 800831-003 Molybdenum Method Blank Unit DF Result Parameter 1.00 ND ug/L Molybdenum Lab ID = 800831-003 Duplicate **RPD** Acceptance Range Unit DF Result Expected Parameter 0 - 20 3.90 ug/L 1.00 118. 113 Molybdenum Lab Control Sample Recovery Acceptance Range Unit DF Result Expected Parameter 85 - 115 102. 102. 100. ug/L 1.00 Molybdenum Lab ID = 800831-003 Matrix Spike Acceptance Range DF Result Expected/Added Recovery Unit Parameter 105. 75 - 125 218. 213(100.) ug/L 1.00 Molybdenum MRCCS - Secondary Acceptance Range Expected Recovery Unit DF Result Parameter 90 - 110 5000 100. 1.00 5030 ug/L Molybdenum MRCVS - Primary Expected Recovery Acceptance Range Unit DF Result Parameter 90 - 110 1.00 4860 5000 97.3 ug/L Molybdenum MRCVS - Primary Acceptance Range DF Result Expected Recovery Unit Parameter 90 - 110 4880 5000 97.5 ug/L 1.00 Molvbdenum Interference Check Standard A Acceptance Range Expected Recovery Unit DF Result Parameter 108. 80 - 120 43.0 40.0 ug/L 1.00 Molybdenum Interference Check Standard A Recovery Acceptance Range Result Expected Parameter Unit DF 101 80 - 120 40.0 40.4 ug/L 1.00 Molybdenum Interference Check Standard AB Acceptance Range DF Expected Recovery Result Parameter Unit 40.0 103. 80 - 120 41.1 ug/L 1.00 Molybdenum



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Batch	041212A
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inetals by El A 200,7, 10	la:		Data	I UTIZIZA				
Parameter		Unit	Ana	lyzed	OF	MDL	RL	Result
800831-001 Aluminum		ug/L	04/12	2/2012 12:45 5	.00	14.2	50.0	ND
Boron		ug/L	04/12	2/2012 11:51 1	.00	1.50	200.	1030
Iron		ug/L	04/12	2/2012 11:51 1	.00	1.34	20.0	ND
800831-002 Aluminum		ug/L	04/12	2/2012 12:39 1	.00	2.83	50.0	ND
Boron		ug/L	04/12	2/2012 12:39 1	.00	1.50	200.	1070
Iron		ug/L	04/12	2/2012 12:39 1	.00	1.34	20.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Aluminum	ug/L	1.00	ND					
Iron	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected	R	PD.	Accepta	nce Range
Aluminum	ug/L	5.00	ND	0.00		0	0 - 20	J
Iron	ug/L	1.00	ND	0.00		0	0 - 20	
Boron	ug/L	1.00	1010	1030		1.76	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Aluminum	ug/L	1.00	2170	2000		108.	85 - 115	
Iron	ug/L	1.00	2140	2000		107.	85 - 115	
Boron	ug/L	1.00	2180	2000		109.	85 - 115	
Matrix Spike							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected/Adde	d R	ecovery	Accepta	nce Range
Aluminum	ug/L	5.00	7840	10000(10000)		78.4	75 - 125	_
Iron	ug/L	1.00	1800	2000(2000)		89.8	75 - 125	
Boron	ug/L	1.00	3180	3030(2000)		107.	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Aluminum	ug/L	1.00	5160	5000		103.	90 - 110	_
Iron	ug/L	1.00	5220	5000		104.	90 - 110	
Boron	ug/L	1.00	5190	5000		104.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Aluminum	ug/L	1.00	4870	5000		97.4	90 - 110	_



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Metals by EPA 200.7, Total Parameter		Batch 042512A						Result
		Unit Analyzed		DF	MDL	RL		
800831-001 Zinc		ug/L	04/25	/2012 16:09	1.00	3.89	10.0	ND
800831-002 Zinc		ug/L	04/25	/2012 16:27	1.00	3.89	10.0	ND
800831-003 Zinc		ug/L	04/25/2012 16:33		1.00	3.89	10.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Zinc	ug/L	1.00	ND					
Duplicate							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range

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Method Blank						
Parameter	Unit	DF	Result			
Zinc	ug/L	1.00	ND			
Duplicate						Lab ID = 800831-001
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Zinc	ug/L	1.00	ND	0.00	0	0 - 20
Lab Control Sampl	e					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	91.6	100.	91.6	85 - 115
Matrix Spike						Lab ID = 800831-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	2080	2000(2000)	104.	75 - 125
MRCCS - Seconda	агу					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5000	5000	99.9	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5020	5000	100.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	4760	5000	95.3	90 - 110
Interference Check	k Standard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	ND	0.00		
Interference Chec	k Standard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	ND	0.00		
Interference Chec	k Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	1940	2000	97.0	80 - 120



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Metals by EPA 200.8,	Total	Batch	041012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Antimony	ug/L	04/10/2012 17:39	5.00	0.120	10.0	ND
Arsenic	ug/L	04/10/2012 17:39	5.00	0.285	1.0	ND
Chromium	ug/L	04/10/2012 17:39	5.00	0.110	1.0	ND
Lead	ug/L	04/10/2012 17:39	5.00	0.110	10.0	ND
Manganese	ug/L	04/10/2012 17:39	5.00	0.285	1.0	3.1
800831-002 Antimony	ug/L	04/10/2012 17:46	5.00	0.120	10.0	ND
Arsenic	ug/L	04/10/2012 17:46	5.00	0.285	1.0	3.4
Chromium	ug/L	04/10/2012 17:46	5.00	0.110	1.0	804.
Lead	ug/L	04/10/2012 17:46	5.00	0.110	10.0	ND
Manganese	ug/L	04/10/2012 17:46	5.00	0.285	1.0	6.0
800831-003 Antimony	ug/L	04/10/2012 18:07	5.00	0.120	10.0	ND
Arsenic	ug/L	04/10/2012 18:07	5.00	0.285	1.0	ND
Chromium	ug/L	04/10/2012 18:07	5.00	0.110	1.0	3.5
Cobalt	ug/L	04/10/2012 18:07	5.00	0.485	5.0	ND
Lead	ug/L	04/10/2012 18:07	5.00	0.110	10.0	ND
Manganese	ug/L	04/10/2012 18:07	5.00	0.285	1.0	24.8
Mercury	ug/L	04/10/2012 18:07	5.00	0.0750	1.0	ND
Selenium	ug/L	04/10/2012 18:07	5.00	0.340	10.0	19.4
Thallium	ug/L	04/10/2012 18:07	5.00	0.125	1.0	ND
Vanadium	ug/L	04/10/2012 18:07	5.00	0.370	5.0	ND

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IVI		IIU	u	D	aı	IN.

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Cobalt	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Mercury	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Thallium	ug/L	1.00	ND
Vanadium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND



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Low Level Calibration	Verification					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.220	0.200	110.	70 - 130
Cobalt	ug/L	1.00	0.905	1.00	90.5	70 - 130
Chromium	ug/L	1.00	0.176	0.200	88.0	70 - 130
Mercury	ug/L	1.00	0.229	0.200	115.	70 - 130
Selenium	ug/L	1.00	0.986	1.00	98.6	70 - 130
Antimony	ug/L	1.00	0.979	1.00	97.9	70 - 130
Lead	ug/L	1.00	0.958	1.00	95.8	70 - 130
Thallium	ug/L	1.00	0.218	0.200	109.	70 - 130
Vanadium	ug/L	1.00	0.940	1.00	94.0	70 - 130
Manganese	ug/L	1.00	0.222	0.200	111	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	92.0	100.	92.0	85 - 115
Cobalt	ug/L	5.00	91.3	100.	91.3	85 - 115
Chromium	ug/L	5.00	90.7	100.	90.7	85 - 115
Mercury	ug/L	5.00	19.6	20.0	97.8	85 - 115
Selenium	ug/L	5.00	94.9	100.	94.9	85 - 115
Antimony	ug/L	5.00	92.5	100.	92.5	85 - 115
Lead	ug/L	5.00	93.1	100.	93.1	85 - 115
Thallium	ug/L	5.00	97.7	100.	97.7	85 - 115
Vanadium	ug/L	5.00	92.0	100.	92.0	85 - 115
Manganese	ug/L	5.00	91.5	100.	91.5	85 - 115
Matrix Spike						Lab ID = 800831-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.1	100.(100.)	99.1	75 - 125
Cobalt	ug/L	5.00	96.9	100.(100.)	96.9	75 - 125
Chromium	ug/L	5.00	109.	104.(100.)	105.	75 - 125
Mercury	ug/L	5.00	19.3	20.0(20.0)	96.3	75 - 125
Selenium	ug/L	5.00	94.9	119.(100.)	75.5	75 - 125
Antimony	ug/L	5.00	102	100.(100.)	102	75 - 125
Lead	ug/L	5.00	88.0	100.(100.)	88.0	75 - 125
Thallium	ug/L	5.00	85.6	100.(100.)	85.6	75 - 125
Vanadium	ug/L	5.00	115.	100.(100.)	115.	75 - 125
Manganese	ug/L	5.00	127.	125.(100.)	102	75 - 125



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Matrix Spike Duplicate						Lab ID = 800831-003	
Parameter	Unit	DF 5.00	Result 101.	Expected/Added 100.(100.)	Recovery 101.	Acceptance Range 75 - 125	
Arsenic	ug/L	5.00	95.6	100.(100.)	95.6	75 - 125	
Cobalt	ug/L	5.00	110.	104.(100.)	106.	75 - 125	
Chromium	ug/L	5.00	18.9	20.0(20.0)	94.5	75 - 125	
Mercury	ug/L	5.00	105.	119.(100.)	85.3	75 - 125	
Selenium	ug/L	5.00	99.9	100.(100.)	99.9	75 - 125	
Antimony	ug/L		99.9 86.6	100.(100.)	86.6	75 - 125	
Lead	ug/L	5.00		100.(100.)	85.0	75 - 125	
Thailium	ug/L	5.00	85.0	• •	117.	75 - 125 75 - 125	
Vanadium	ug/L	5.00	117.	100.(100.) 125.(100.)	100.	75 - 125 75 - 125	
Manganese	ug/L	5.00	125.	125.(100.)	100.	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	10.4	10.0	104.	90 - 110	
Cobalt	ug/L	1.00	10.4	10.0	104.	90 - 110	
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110	
Mercury	ug/L	1.00	2.18	2.00	109.	90 - 110	
Selenium	ug/L	1.00	11.0	10.0	110.	90 - 110	
Antimony	ug/L	1.00	10.5	10.0	105.	90 - 110	
Lead	ug/L	1.00	10.8	10.0	108.	90 - 110	
Thallium	ug/L	1.00	10.7	10.0	107.	90 - 110	
Vanadium	ug/L	1.00	10.4	10.0	104.	90 - 110	
Manganese	ug/L	1.00	10.5	10.0	105.	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	9.87	10.0	98.7	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	10.2	10.0	102.	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	10.1	10.0	101.	90 - 110	



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Interference Check Sta	ndard AB					
Parameter Selenium Interference Check Sta	Unit ug/L ındard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Parameter Antimony Interference Check Sta	Unit ug/L undard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Parameter Antimony Interference Check Sta	Unit ug/L andard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Parameter Lead Interference Check Sta	Unit ug/L andard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Parameter Lead Thallium Interference Check Sta	Unit ug/L ug/L andard AB	DF 1.00 1.00	Result ND ND	Expected 0.00 0.00	Recovery	Acceptance Range
Parameter Thallium Vanadium Interference Check Sta	Unit ug/L ug/L andard AB	DF 1.00 1.00	Result ND ND	Expected 0.00 0.00	Recovery	Acceptance Range
Parameter Vanadium Manganese	Unit ug/L ug/L	DF 1.00 1.00	Result ND 9.78	Expected 0.00 10.0	Recovery 97.8	Acceptance Range 80 - 120
Interference Check Sta	_					
Parameter Manganese Serial Dilution	Unit ug/L	DF 1.00	Result 9.83	Expected 10.0	Recovery 98.3	Acceptance Range 80 - 120 Lab ID = 800831-002
Parameter Chromium	Unit ug/L	DF 25.0	Result 777.	Expected 804	RPD 3.40	Acceptance Range 0 - 10



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Metals by EPA 200.8,	Total		Batch	041712B				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
800831-001 Barium		ug/L	04/17/	/2012 19:40	5.00	0.200	10.0	11.8
Copper		ug/L	04/17/	/2012 19:40	5.00	0.125	5.0	ND
Nickel		ug/L	04/17	/2012 19:40	5.00	0.0750	10.0	ND
800831-002 Barium		ug/L	04/17	/2012 19:47	5.00	0.200	10.0	26.0
Copper		ug/L	04/17	/2012 19:47	5.00	0.125	5.0	ND
Nickel		ug/L	04/17	/2012 19:47	5.00	0.0750	10.0	ND
800831-003 Barium		ug/L	04/17	/2012 20:01	5.00	0.200	10.0	68.5
Cadmium		ug/L	04/17	/2012 20:01	5.00	0.470	3.0	ND
Copper		ug/L	04/17	/2012 20:01	5.00	0.125	5.0	ND
Nickel		ug/L	04/17	/2012 20:01	5.00	0.0750	10.0	ND
Silver		ug/L	04/17	/2012 20:01	5.00	0.175	5.0	ND
Method Blank		<u> </u>						
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Cadmium	ug/L	1.00	ND					
Nickel	ug/L	1.00	ND					
Copper	ug/L	1.00	ND					
Silver	ug/L	1.00	ND					
Duplicate							Lab ID =	800831-003
Parameter	Unit	DF	Result	Expected	F	RPD	-	ance Range
Barium	ug/L	5.00	67.3	68.5		1.72	0 - 20	
Cadmium	ug/L	5.00	ND	0.00		0	0 - 20	
Nickel	ug/L	5.00	ND	9.57		0	0 - 20	
Copper	ug/L	5.00	ND	0.00		0	0 - 20	
Silver	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibrat	ion Verification	1						
Parameter	Unit	DF	Result	Expected	i	Recovery		ance Range
Barium	ug/L	1.00	0.948	1.00		94.8	70 - 13	
Cadmium	ug/L	1.00	0.211	0.200		106.	70 - 13	
Nickel	ug/L	1.00	1.02	1.00		102	70 - 13	
Copper	ug/L	1.00	0.842	1.00		84.2	70 - 13	
Silver	ug/L	1.00	0.895	1.00		89.5	70 - 13	0



Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 5.00 98.4 100. 98.4 85 - 115 Cadmium ug/L 5.00 97.3 100. 97.3 85 - 115 Nickel ug/L 5.00 98.4 100. 98.4 85 - 115	Client: E2 Consulting Engineers, Inc.		
Barium ug/L 5.00 98.4 100. 98.4 85 - 115 Cadmium ug/L 5.00 97.3 100. 97.3 85 - 115	Lab Control Sample		
Cadmium ug/L 5.00 97.3 100. 97.3 85 - 115	ameter		
Gadillatif	ium		
	dmium		
Nicker agree 5.55	kel		
Copper ug/L 5.00 96.8 100. 96.8 85 - 115	pper		
Silver ug/L 5.00 101. 100. 101. 85 - 115	/er		
Matrix Spike Lab ID = 800831-00	Matrix Spike		
Parameter Unit DF Result Expected/Added Recovery Acceptance Rang	rameter		
Barium ug/L 5.00 168. 168.(100.) 99.4 75 - 125	rium		
Cadmium ug/L 5.00 75.4 100.(100.) 75.4 75 - 125	dmium		
Nickel ug/L 5.00 97.7 110.(100.) 88.2 75 - 125	:kel		
Copper ug/L 5.00 91.7 100.(100.) 91.7 75 - 125	pper		
Silver ug/L 5.00 76.2 100.(100.) 76.2 75 - 125	/er		
MRCCS - Secondary	MRCCS - Secondary		
Parameter Unit DF Result Expected Recovery Acceptance Rang	rameter		
Barium ug/L 1.00 9.97 10.0 99.7 90 - 110	rium		
Cadmium ug/L 1.00 9.99 10.0 99.9 90 - 110	dmium		
Nickel ug/L 1.00 10.0 10.0 100. 90 - 110	kel		
Copper ug/L 1.00 10.0 10.0 100. 90 - 110	pper		
Silver ug/L 1.00 10.4 10.0 104. 90 - 110	ver		
MRCVS - Primary	MRCVS - Primary		
Parameter Unit DF Result Expected Recovery Acceptance Rang	rameter		
Barium ug/L 1.00 10.0 10.0 100. 90 - 110	rium		
MRCVS - Primary	MRCVS - Primary		
Parameter Unit DF Result Expected Recovery Acceptance Range	rameter		
Barium ug/L 1.00 9.83 10.0 98.3 90 - 110	rium		
Cadmium ug/L 1.00 9.66 10.0 96.6 90 - 110	dmium		
MRCVS - Primary	MRCVS - Primary		
Parameter Unit DF Result Expected Recovery Acceptance Rang	rameter		
Cadmium ug/L 1.00 9.20 10.0 92.0 90 - 110	dmium		
MRCVS - Primary	MRCVS - Primary		
Parameter Unit DF Result Expected Recovery Acceptance Range	rameter		
Nickel ug/L 1.00 9.37 10.0 93.7 90 - 110			



PG&E Topock Project Page 27 of 31 Project Name: Client: E2 Consulting Engineers, Inc. Project Number: 424973.01.DM Printed 5/2/2012 Interference Check Standard A Recovery Acceptance Range DF Result Expected Parameter Unit ND 0.00 1.00 ug/L Silver Interference Check Standard AB Expected Recovery Acceptance Range Unit DF Result Parameter ND 0.00 Barium ug/L 1.00 Interference Check Standard AB Acceptance Range Expected Recovery Parameter Unit DF Result 0.00 1.00 ND ug/L Barium 10.0 96.9 80 - 1209.69 Cadmium ug/L 1.00 Interference Check Standard AB Expected Recovery Acceptance Range Parameter Unit DF Result 93.7 80 - 120 9.37 10.0 Cadmium ua/L 1.00 Interference Check Standard AB Acceptance Range DF Result Expected Recovery Parameter Unit 80 - 120 10.0 87.0 Nickel ug/L 1.00 8.70 Interference Check Standard AB Expected Acceptance Range Unit DF Result Recovery Parameter 97.2 80 - 120 ug/L 10.0 Nickel 1.00 9.72 10.0 93.3 80 - 1209.33 ug/L 1.00 Copper Interference Check Standard AB Recovery Acceptance Range Unit DF Result Expected Parameter 84.6 80 - 1208.46 10.0 ug/L 1.00 Copper Interference Check Standard AB Acceptance Range Result Expected Recovery Unit DF Parameter 80 - 120 10.0 94.3 ug/L 1.00 9.43 Silver Interference Check Standard AB Acceptance Range Unit DF Result Expected Recovery Parameter 80 - 12010.0 95.0 ug/L 1.00 9.50 Silver Lab ID = 800831-003 Serial Dilution **RPD** Acceptance Range Unit DF Result Expected Parameter 0 - 10 68.5 2.53 25.0 66.8 Barium ug/L



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

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Project Number: 424973.01.DM

Printed 5/2/2012

Metals by EPA	200.8. Total	Batch 042012A

Parameter		Unit	Ana	ılyzed [OF MDL	RL	Result
800831-003 Beryllium		ug/L	04/20	0/2012 14:13 5.	00 0.140	1.0	ND
Method Blank							
Parameter Beryllium	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	800831-003
Parameter Beryllium Low Level Calibration	Unit ug/L Verification	DF 5.00	Result ND	Expected 0.00	RPD 0	Accepta 0 - 20	ance Range
Parameter Beryllium Lab Control Sample	Unit ug/L	DF 1.00	Result 0.212	Expected 0.200	Recovery 106.	Accepta 70 - 130	ance Range)
Parameter Beryllium Matrix Spike	Unit ug/L	DF 5.00	Result 95.8	Expected 100.	Recovery 95.8	85 - 115	ance Range 5 800831-003
Parameter Beryllium Matrix Spike Duplicat	Unit ug/L e	DF 5.00	Result 100.	Expected/Added 100.(100.)	d Recovery 100.	75 - 125	ance Range 5 800831-003
Parameter Beryllium MRCCS - Secondary	Unit ug/L	DF 5.00	Result 99.1	Expected/Added	d Recovery 99.1	Accepta 75 - 125	ance Range
Parameter Beryllium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.24	Expected 10.0	Recovery 92.4	Accepta 90 - 110	ince Range)
Parameter Beryllium Interference Check S	Unit ug/L tandard A	DF 1.00	Result 9.44	Expected 10.0	Recovery 94.4	Accepta 90 - 110	ince Range)
Parameter Beryllium Interference Check S	Unit ug/L tandard A	DF 1.00	Result ND	Expected 0.00	Recovery	Accepta	ince Range
Parameter Beryllium	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Accepta	nce Range



Lab Control Sample

Total Dissolved Solids

Parameter

Unit

mg/L

DF

1.00

Report Continued

Page 29 of 31 PG&E Topock Project Client: E2 Consulting Engineers, Inc. Project Name: Project Number: 424973.01.DM Printed 5/2/2012 Interference Check Standard AB Acceptance Range DF Expected Recovery Unit Result Parameter ND 0.00 ug/L 1.00 Beryllium Interference Check Standard AB Expected Recovery Acceptance Range Unit DF Result Parameter 0.00 ug/L 1.00 ND Beryllium Batch 04TDS12A Total Dissolved Solids by SM 2540 C DF RL Unit Analyzed MDL Result Parameter 04/04/2012 1.00 0.400 250. 4430 800831-001 Total Dissolved Solids mg/L 4440 800831-002 Total Dissolved Solids mg/L 04/04/2012 1.00 0.400 250. 04/04/2012 1.00 0.400 1250 31200 800831-003 Total Dissolved Solids mg/L Method Blank DF Result Unit Parameter 1.00 ND mg/L **Total Dissolved Solids** Lab ID = 800831-001 Duplicate **RPD** Unit DF Result Expected Acceptance Range Parameter 4430 2.01 0 - 5 1.00 4520 mg/L Total Dissolved Solids

Result

455

Expected

500.

Recovery

91.0

Acceptance Range

90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Printed 5/2/2012

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Project Number: 424973.01.DM

Ammonia Nitrogen by SM4500-NH3D Batch 04NH3-E12A

Ammonia Nitrogen by Sivi	40UU-NI	שנו	Daten	0-11110 = 1271				
Parameter		Unit	Anal	lyzed [F	MDL	RL	Result
800831-001 Ammonia as N		mg/L	04/05	/2012 1.	00	0.00120	0.500	ND
800831-002 Ammonia as N		mg/L	04/05	/2012 1.	00	0.00120	0.500	ND
Method Blank								
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Duplicate							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected	F	RPD	=	nce Range
Ammonia as N	mg/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Ammonia as N	mg/L	1.00	10.4	10.0		104.	90 - 110	
Matrix Spike							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	•	nce Range
Ammonia as N	mg/L	1.00	6.28	6.00(6.00)		105.	75 - 125	
Matrix Spike Duplicate							Lab ID =	800831-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	•	ince Range
Ammonia as N	mg/L	1.00	6.50	6.00(6.00)		108.	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Ammonia as N	mg/L	1.00	6.12	6.00		102.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Ammonia as N	mg/L	1.00	5.97	6.00		99.4	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Ammonia as N	mg/L	1.00	6.02	6.00		100.	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 5/2/2012

Turbidit	by SM	2130 B
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Batch 0	4TUC12B
---------	---------

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
800831-001 Turbidity	NTU	04/04	/2012	1.00	0.0140	0.100	0.108	
800831-002 Turbidity		NTU	04/04	/2012	1.00	0.0140	0.100	0.134
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID = 8	800831-002
Parameter Turbidity	Unit NTU	DF 1.00	Result 0.136	Expected 0.134	F	RPD 1.48	Accepta 0 - 20	nce Range
Lab Control Sample								
Parameter Turbidity Lab Control Sample Du	Unit NTU uplicate	DF 1.00	Result 8.10	Expected 8.00	F	Recovery 101.	Accepta 90 - 110	nce Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.16	Expected 8.00	F	Recovery 102	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS12A

Date Calculated: 4/4/12

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL , ppm	Reported Value, ppm	ÐF
BLANK	100	109.0687	109.0691	109.0689	0.0002	No	0.0002	2.0	25.0	ND	1
800804-16	100	72.3936	72.4530	72.4528	0.0002	No	0.0592	592.0	25.0	592.0	1
800813-11	100	75.3045	75.3621	75.3618	0.0003	No	0.0573	573.0	25.0	573.0	1
800813-12	100	75.6546	75.7109	75.7105	0.0004	No	0.0559	559.0	25.0	559.0	11
800830-1	20	71,3052	71.3615	71.3613	0.0002	No	0.0561	2805.0	125.0	2805.0	1
800830-2	10	75.6757	75.7291	75.7287	0.0004	No	0.0530	5300,0	250.0	5300.0	11
800831-1	10	50.1641	50.2086	50.2084	0.0002	No	0.0443	4430.0	250.0	4430.0	11
800831-2	10	49.6824	49.7271	49.7268	0.0003	No	0.0444	4440.0	250.0	4440.0	1
800831-3	2	50.1269	50.1895	50.1892	0.0003	No	0.0623	31150.0	1250.0	31150.0	1
800831-1D	10	51.5081	51.5536	51.5533	0.0003	No	0.0452	4520.0	250.0	4520.0	11
LCS	100	110.9525	110.9988	110.998	0.0008	Yes	0.0455	455.0	25.0	455.0	1

Calculation as follows:

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

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Signature

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS12A Date Calculated: 4/4/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
			-	
800804-16	762	0.78	495.3	1.20
800813-11	915	0.63	594.75	0.96
800813-12	897	0.62	583.05	0,96
800830-1	4910	0.57	3191.5	0.88
800830-2	8450	0.63	5492.5	0.96
800831-1	7510	0.59	4881.5	0.91
800831-2	7750	0.57	5037.5	0.88
800831-3	40700	0.77	26455	1.18
800831-1D	7510	0.60	4881.5	0.93





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-355]

800831

TURNAROUND TIME 10 DATE 04/03/12 PAG

10 Days
PAGE 1 OF

												~ @		y 🕪	Ø							
COMPANY	CH2M HILL /E2	2					7	/	12/	7	7	7	7		7	/		$\overline{}$	$\overline{}$	///	7	MMENTS
PROJECT NAME	PG&E Topock	IM3							×45				•							//	/ "	JIMIMIEN I S
PHONE	530-229-3	303 1	FAX 530	-339-3303			/ ,	200.8 8.00.8	/ ,	/ ,	/ /	List Below	/ ,	/ /	/ 20g/	/ ,	/ /	/	/ ,	/ / , ,		
ADDRESS	155 Grand Ave	Ste 1000	******				ρ_{Q}	~;/ oc/				7 990	- /	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	بر دی/	/,	<u>,</u>			VER'S		
	Oakland, CA 94	4612						<u>v</u>				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	5)	\\ \tilde{\zero}	-	/~	$\langle \rangle$./				
P.O. NUMBER	408401.01.DM					$\frac{1}{2}$	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	/ ,		/ ,	/8/	2005	16/	(0.0	/ ගැ	/8°.	/8/	/	/ /			
SAMPLERS (SIGN)	ATURE	Claugh	Ut-			(278,	2 Meta	60.1	045/	Total 1.	Metals	4) eju,	, (300) 2	70C (52) OO. 0) F; A	0/5/2	rietals (*)	,500 ₂			6		
SAMPLE I.D.		DATE	TIME	DESCRIPTION	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7146 2 (3.86) Lab E:	EC /12 Metals List /2		Turb (2)		Ammo (200.7) S	Anios (4500-NH2)	Anion (300.0) +	$\frac{1}{2}$	Total	No ₂ (1)	, (4500.NO2B) , (4500.NO2B)		NUN	JEROF CONTAINERS		
SC-700B-V	WDR-355	04/03/12	14:29		X		Х	Х	Х	Х	Х		Х			Х		******************	4		DU = 2	2)
SC-100B-\	WDR-355	04/03/12	14:47		X		Х	Х	Х	Х	Х		Х			Х			4		DU = +	1 & met
SC-701-W	/DR-355	04/03/12	14:14		Х	Х	Х	Х				Χ			Х				4		m=	2)
																					y	
				******		Reside.		3 2 4		S #75		***************************************										***************************************
AL		Charlest St.	, di Jan jih	7 5 7 5	0	Go	<u>) (1</u>	JII	101	15												
Low	SIMA		4 %		MAN .	Af	12	eh	90													
Land V				odd I VI	1001	员 新原	G SELECTION .	ettle in en											12	TOTAL N	UMBER OF CO	ONTAINERS

		CH	IAIN OF CUSTODY SIG	SNATURE	RECORD		SAMPLE CONDITIONS
	Signature (Relinquished)	C. Wight	Printed C. Knight	Company/ Agency	CH2m Hill	Date/ 4 · 3 · 12 Time 15:45	RECEIVED COOL ★ WARM □ 3.4°C of
	Signature (Received)	ples	Printed Apol/6	Company/ Agency	HI	Date/ 4-3-18 Time 15:45	CUSTODY SEALED YES ☐ NO ☑
	Signature (Relinquished)	pel-3	Printed Name	Company/ Agency	11/	Date/ 4-3-18 Time 2/36	SPECIAL REQUIREMENTS:
- 1	Signature (Received)	duda	Printed Placeum/uq	Company/ Agency	76]	Date/ 4/3/12 21:30	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Ξ	Signature (Relinquished)		Printed Name	Company/ Agency		Date/ Time	100, 10, 10, 211
- 1	Signature (Received)		Printed Name	Company/ Agency		Date/ Tìme	·

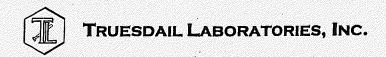
Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials	7
3/16/12	800534-1		N/A	N/A	N/A	MG	1
	-2	\$		1		1,1	1
	-3					1/1	1
	-4		·			·	1
	-5						
1	V ~6	V	¥	V	· 1]
3/21/12	800584	7.0	5MC	9,5	10:15am	M	
3/23/12	800651-1	9.5	NA	NA	NA	mf	
	-2						
<u>→</u>	√ -3	♦	4	4	4	4	
3/28/12	1	7,0	5mL	9.5	9:25cm	M	
	800732	1	5mL	9.5	9:30 Am		
3/28/12	800 742	7.0	5mL	9,5	10:35am	my	
3/2/12	800756	9.5	NA	NA	NANA	My	
3/30/12	800770-1	9,5	NA NA	NA	7,80am	m	Gy 4/2
4	-2	1			N/A		
	, ,		4	4	→ N(A	<u></u>	-\
4/4/12	800830 -1	7.0	2mL	9,5	9:30an	Mt.	•
4/4/12	800830 -2 800831 -1	7.0	8	9.5		MJ	
19/10	Į.	7.0	201	9.5	10:00 am	auf	
4	<u> </u>			+	10:10am	+	
7	· · · · · · · · · · · · · · · · · · ·		<u> </u>		10:20 on	-	
			`				
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		L					

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

C- 4/10/12

		Turb	idity/pH Ch	IGUN		Adjusted to
	Touchielite	рН	Date	Analyst	Need Digest	pH<2 (Y/N)
Sample Number	Turbidity		3/26/12	KK	VRS !	3010 A
800646	12	1	740115		Ti	عامرا.
800 648				1		
800679		+++	7 77 12	BE	№ 0	Mo
E33 680	< \$	<u> </u>	3-27-12	120	+	
800691	<1	<2			+	
800692	1	V			+ 1	xes 14:00
900700	<1	72				
800 701	7	0 13 6 2	3-28-12	BE	No	5- xes 9:45
200 707(1.5)) <1	1-4 <2	3-62-16		-	No
800 709		<z< td=""><td></td><td></td><td></td><td>5 -> xes 9.45 AM</td></z<>				5 -> xes 9.45 AM
800708(1-5))	.5 > 2			A .	5 -> xcs 9.45 "
80=71011-5		-572				-8 → × =59:45 °
80071161-8)	-872	<u> </u>			7,8 -> xc3 4:45 "
80071211-8		7,872			-	798 -> xc3 9:45 "
80071361-8	5)	798 72			-	798 -> xc59:45 :
800 714U-8	.) [7,872	1			XCS 9:45 AM
200 715U-10	·)	72				798 -> yes 9:45 "
822722-(1-8	<u>s</u>)	79872	30 -17			Na
800 720		12-217	B£3-28-12	* * -		
800 721	1	ح/دلمين	135 3-128	-1	<u> </u>	3010 A
800 717	71	(2 +272	Bt3-28-16	1	Xes	Sawii
800 718	-	1				
80° 719	+ 1		1			ZaloA yes lo an A
80032	BE 3 <1	>2		<u> </u>	¥ c 5	30104 Yes 10 1017
	1	36 42 >2	3/29/12	2 BE		3010A J
800 747	71	4	11_	T_1_	yes	3010H V
800 19.		72	+		Na	
800 750 U-	31		-3-27-2		No	340A 34647.15
800 758	-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\	⟨2 > 2		1	· Yes	
		(2)Z	2-20-1		- 40 / 0	3010A 405 4100
9.00 7700	1 31	. >2	4-2-12	2 35	* No	- T AE
800 77811	10 E 4	1-2-2 42	1	1	No No	Na Na
\$59.78 \			41-3-12	2 BE	No	№ 9
804788			+ + + + + + + + + + + + + + + + + + + +	+	4	V
800 789		72	+	1	*	XC5 12:45 PM
9.00797			+-1	+ 1		Xes 15: PM
800 804			4-4-12	2 B E	yes	3010 A xes 7:4
4 c 3 8 3 0	11,2) <1	>2		-		1 -2 - xes
800 8316		-272			χe	3010
1200 4.837						
800 808				-+		
113008	, <u>v</u>				NO.	No.
800869						
800810				-+-+		
800 815				-+-+		
800 8 16						
800 826-						
800 827						XCS 10.00 AM
800823		>2				
800823		1	1	+	*	- V
1 8000-	(1-)/ V <u>(1-)/</u> ×	<u> </u>	- 1 :1-4.	12 4	Yes	3 301eA



Sample Integrity & Analysis Discrepancy Form

. Cli	ent: <u>F</u> 2 *	Lab #
Dat	te Delivered: <u>04 / 03</u> / 12 Time: <u>2/ ⋅ 30</u> · By: □Mail 🗯 F	Field Service
1.	, Was a Chain of Custody received and signed?	⊠Yes □No □N/A
2	Does Customer require an acknowledgement of the COC?	□Yes □No ÄN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No ÞÍN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ∞IN/A
5 .	Were all requested analyses understood and acceptable?	æqYes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? ³ . <u>∀</u> ° C	∞aYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Z 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?	ДYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail ☑Clien	Ø(Yes □No □N/A
12.	Were samples pH checked? pH = <u>See C</u>	AZÝes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Yes ONO ON/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): RUSH Std	Ø(Yes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground V	Vater □Waste Water
	□Sludge □Soil □Wipe □Paint □Solid 烒(Other Water
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	d. Stubume



www.truesdail.com



April 23, 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-356 PROJECT, GROUNDWATER

MONITORING, TLI No.: 800967

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-356 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 April 10, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

√c - Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 800967

Date: April 23, 2012 **Collected:** April 10, 2012

Received: April 10, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST					
EPA 120.1	Specific Conductivity	Gautam Savani					
SM 2540C	Total Dissolved Solids	Kim Luck					
SM 2130B	Turbidity	Gautam Savani					
EPA 200.8	Total Metals	Katia Kiarashpoor					
EPA 218.6	Hexavalent Chromium	Melissa Scharfe / Maksim Gorbunov / George Wahba					

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Laboratory No.: 800967

Date Received: April 10, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800967-001 800967-001 800967-001 800967-001 800967-001 800967-001	SC-700B-WDR-356 SC-700B-WDR-356 SC-700B-WDR-356 SC-700B-WDR-356 SC-700B-WDR-356 SC-700B-WDR-356	E200.8 E200.8 E218.6 SM2130B	NONE NONE NONE LABFLT NONE NONE	4/10/2012 4/10/2012 4/10/2012 4/10/2012 4/10/2012 4/10/2012	12:50 12:50 12:50 12:50 12:50 12:50	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids	7350 ND 2.4 ND ND 4290	umhos/cm ug/L ug/L ug/L NTU mg/L	2.00 1.0 1.0 0.20 0.100 250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

005

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Page 1 of 9

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Printed 4/23/2012

Laboratory No. 800967

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

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

Field ID			Lab ID	Collected		Matrix		
SC-700B-WDR-356 Specific Conductivity - EPA 120.1 Parameter 800967-001 Specific Conductivity				800967-001	04/10/2012 12:50		Water	
		Unit		n 04EC12C	DF	MDL	RL	Result
		umhos/cm 04/13/2012		1.00	0.0950	2.00	7350	
Method Blank	·						***************************************	
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND				Lab ID =	800967-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7340	Expected 7350		RPD 0.136	Acceptance Range 0 - 10	
Parameter Specific Conductivity Lab Control Sample D	Unit umhos uplicate	DF 1.00	Result 701	Expected 706	•		Acceptance Range 90 - 110	
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 703	Expected 706	Recovery 99.6		Acceptance Range 90 - 110	
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 678	Expected 706	Recovery 96.0		Acceptance Range 90 - 110	
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 970.	Expected 998	R	Recovery 97.2	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 957	Expected 998	R	ecovery 95.9	Accepta 90 - 110	nce Range



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

Page 3 of 9

Project Number: 424973.01.DM

Printed 4/23/2012

Chrome	VI by	FPA	218.6	

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
800967-001 Chromium, Hexa	avalent	ug/L	04/12	2/2012 18:41	1.00	0.0260	0.20	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	800936-003
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result Expected 8.05 8.08		RPD 0.382		Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	•			Recovery 95.8	Accepta 70 - 130	ance Range O
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.00	t Expected 5.00		Recovery 100.	90 - 110	ance Range) 800934-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.40	Expected/Add 6.46(5.00)	led	Recovery 98.9	90 - 110	ance Range) 800934-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.01	Expected/Add 8.28(5.00)	led	Recovery 94.7	90 - 110	ance Range) 800934-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.09	Expected/Add 8.28(5.00)	led	Recovery 96.2	90 - 110	ance Range) 800934-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 9.65	Expected/Add 9.80(5.00)		Recovery 97.1	90 - 110	ance Range) 800934-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result Expected/Add 18.5 18.9(10.0)		dded Recovery 96.3		90 - 110	ance Range) 800934-006
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 18.4	Expected/Add 18.4(10.0)	led	Recovery 99.2	Accepta 90 - 110	ance Range)



Client: E2 Consulting Eng		oject Name: oject Number:	PG&E Topock Pro 424973.01.DM	ject	Page 4 of 9 Printed 4/23/2012	
Matrix Spike						Lab ID = 800934-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 14.5	Expected/Added 15.4(10.0)	Recovery 91.8	Acceptance Range 90 - 110 Lab ID = 800934-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 9.64	Expected/Added 9.85(5.00)	Recovery 95.9	Acceptance Range 90 - 110 Lab ID = 800934-010
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.987	Expected/Added 1.00(1.00)	Recovery 98.7	Acceptance Range 90 - 110 Lab ID = 800936-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.81	Expected/Added 1.84(1.00)	Recovery 97.2	Acceptance Range 90 - 110 Lab ID = 800936-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.81	Expected/Added 1.82(1.00)	Recovery 98.8	Acceptance Range 90 - 110 Lab ID = 800936-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 18.0	Expected/Added 18.1(10.0)	Recovery 99.0	Acceptance Range 90 - 110 Lab ID = 800936-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 17.8	Expected/Added 18.0(10.0)	Recovery 97.8	Acceptance Range 90 - 110 Lab ID = 800936-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.35	Expected/Added 6.52(5.00)	Recovery 96.7	Acceptance Range 90 - 110 Lab ID = 800936-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 9.86	Expected/Added 9.96(5.00)	Recovery 98.0	Acceptance Range 90 - 110 Lab ID = 800967-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.10	Expected/Added 1.11(1.00)	Recovery 99.1	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.02	Expected 5.00	Recovery 100.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 4/23/2012

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Metals by EPA 200.8, Total

Batch 041812C

Micials by Li A 20010, 10	lai			4							
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result			
800967-001 Chromium		ug/L	04/19	/2012 09:20	5.00	0.195	1.0	ND			
Manganese		ug/L	04/19	/2012 09:20 5	5.00	0.270	1.0	2.4			
Method Blank											
Parameter	Unit	DF	Result								
Chromium	ug/L	1.00	ND								
Manganese	ug/L	1.00	ND								
Duplicate							Lab ID =	800967-001			
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range			
Chromium	ug/L	5.00	ND	0.00		0	0 - 20				
Manganese	ug/L	5.00	2.48	2.39		3.78	0 - 20				
Low Level Calibration	Verification	1									
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptance Rang				
Chromium	ug/L	1.00	0.231	0.200		115.	70 - 130	כ			
Manganese	ug/L	1.00	0.218	0.200	109.		70 - 130				
Lab Control Sample											
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptance Rang				
Chromium	ug/L	5.00	101.	100.		101.	85 - 115				
Manganese	ug/L	5.00	95.3	100.	95.3		85 - 115				
Matrix Spike							Lab ID =	800967-001			
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range			
Chromium	ug/L	5.00	100.	100.(100.)		100.	75 - 12	5			
Manganese	ug/L	5.00	95.1	102.(100.)		92.7	75 - 12	5			
Matrix Spike Duplicate)			•			Lab ID =	800967-001			
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	-	ance Range			
Chromium	ug/L	1.00	105.	100.(100.)		105.	75 - 12	5			
Manganese	ug/L	1.00	98.8	102.(100.)		96.4	75 - 12	5			
MRCCS - Secondary											
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range			
Chromium	ug/L	1.00	10.2	10.0		102.	90 - 110				
Manganese	ug/L	1.00	9.81	10.0		98.1	90 - 110	כ			
MRCVS - Primary											
					_	_		_			
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range			



Client: E2 Consulting Er		roject Name: roject Numbe	PG&E Topod r: 424973.01.D	•	Page 8 of 9 Printed 4/23/2012			
Interference Check S	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		
Manganese	ug/L	1.00	9.62	10.0	96.2	80 - 120		
Interference Check Standard AB								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range		
Manganese	ug/L	1.00	9.56	10.0	95.6	80 - 120		
Total Dissolved Solids by SM 2540 Parameter) C Unit		04TDS12D lyzed	DF MDL	RL Result		
800967-001 Total Dissolved	Solids	mg/L	04/12	/2012	1.00 0.400	250. 4290		
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate						Lab ID = 800935-005		
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range		
Total Dissolved Solids	mg/L	1.00	1280	1270	0.471	0 - 5		
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range		
Total Dissolved Solids	mg/L	1.00	494	500.	98.8	90 - 110		



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9 Printed 4/23/2012

Project Number: 424973.01.DM

Turbidity by SM 2130 B

Batch 04TUC12I

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
800967-001 Turbidity		NTU	04/11	/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity Duplicate	Unit NTU	DF 1.00	Result ND				Lab ID =	800967-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range
Parameter Turbidity Lab Control Sample [Unit NTU Duplicate	DF 1.00	Result 8.53	Expected 8.00	Recovery 107.		Accepta 90 - 110	ince Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.30	Expected 8.00	F	Recovery 104.	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 03TDS12D

Date Calculated: 4/12/12

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	105.2862	105.2868	105.2868	0.0000	No	0.0006	6.0	25.0	ND	1
800935-3	100	51.1915	51.2194	51.2191	0.0003	No	0.0276	276.0	25.0	276.0	1
800935-4	50	47.9647	48.0603	48.0598	0.0005	No	0.0951	1902.0	50.0	1902.0	1
800935-5	50	49.2587	49.3225	49.3222	0.0003	No	0.0635	1270.0	50.0	1270,0	1
800935-6	50	48.0134	48.0742	48.0738	0.0004	No	0.0604	1208.0	50.0	1208.0	1
800936-1	20	51.4359	51.4908	51.4905	0.0003	No	0.0546	2730.0	125.0	2730.0	1
800936-2	20	51.0850	51.1588	51.1585	0.0003	No	0.0735	3675.0	125.0	3675.0	1
800936-3	50	69.4817	69.5446	69.5443	0.0003	No	0.0626	1252.0	50.0	1252.0	1
800936-4	50	69.3630	69.4182	69.4179	0.0003	No	0.0549	1098.0	50.0	1098.0	1
800936-5	50	67.7365	67.8354	67.835	0.0004	No	0.0985	1970.0	50.0	1970.0	1
800936-6	20	49.3266	49.3803	49.38	0.0003	No	0.0534	2670.0	125.0	2670.0	1
800936-7	50	69.2121	69.3135	69.3133	0,0002	No	0.1012	2024.0	50.0	2024.0	1
800963-1	10	76.1983	76.2402	76.2399	0.0003	No	0.0416	4160.0	250.0	4160.0	1
800967	10	76.3439	76.3871	76.3868	0.0003	No	0.0429	4290.0	250.0	4290.0	1
800935-5D	50	76.8695	76.9336	76.9333	0.0003	No	0.0638	1276.0	50.0	1276.0	1
LCS	100	92.1015	92.1510	92.1509	0.0001	No	0.0494	494.0	25.0	494.0	1

Calculation as follows:

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

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

A UK
Batch: 08TDS12D

Date Calculated: 4/12/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
800935-3	437	0.63	284.05	0.97
800935-4	2830	0.67	1839.5	1.03
800935-5	2010	0.63	1306.5	0.97
800935-6	1950	0.62	1267.5	0.95
800936-1	4330	0.63	2814.5	0.97
800936-2	5460	0.67	3549	1.04
800936-3	2000	0.63	1300	0.96
800936-4	2000	0.55	1300	0.84
800936-5	3000	0.66	1950	1.01
800936-6	4180	0.64	2717	0.98
800936-7	2930	0.69	1904.5	1.06
800963-1	7330	0.57	4764.5	0.87
800967	7470	0.57	4855.5	0.88
800935-5D	2010	0.63	1306.5	0.98



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

CHAIN OF CUSTODY RECORD

COC Number

[IM3Plant-WDR-356]	80096	7
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TURNA	ROUND TIME	10	Day	S	
DATE	04/10/12	PAGE	1	OF	

COMPANY	E2						7	7	7	/	/ /	$\overline{}$	$\overline{}$	$\overline{\mathcal{I}}$	$\overline{}$	$\overline{}$	7	7	7	7	7		
PROJECT NAME	PG&E Topock								/ /	/ /										/ /	COF	MENTS	
PHONE	(530) 229-3303		fax <u>(530</u>) 339-3303			/ ,	/ /	' /			/ ,	/ /	/ /	/ /	/ /	/	/	/ /				
ADDRESS	155 Grand Ave		and the second s				ر /	20 11 P		/ ,	/ /								CONTAINERS				
	Oakland, CA 94	612				rered	. /	. / 22	/ /				/ .	/ ,	/	/ ,		/	NVZ/	•			
P.O. NUMBER	424973.01.DM) TEAN	1	/	Lab Fillered	Specific	TDS (SM25400	3/	'urbidity (SM2130)	//	/ /				' /			ŏ/				
SAMPLERS (SIGNA	ATURE	p Ni	M5		Cro (210.2	(9.0)		10S (SM25802)	///	(S) (S) (S)	/ /							NUMBE	<i>#</i> /				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	18	100	Spec	\8 \ \8	/ /,	<u>\$</u>	_/	_		/	/	/ /		\$	/				l
SC-700B-WDI	R-356	04/10/12	12:55	Water	х	х	х	х)	ζ								3		D	H= 6	(700 o	7
			12:50	a.				Mile Congression	and an inches in the company									3	TOTA	L NUMB	.,	NTAINERS	ľ
																	•						•



1 / CH	HAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished) Mus Luc	Printed Name CHRIS CENTE	Company/ -Agency <i>Om I</i>	Date/ 4-/0-/2 Time /5:40	RECEIVED COOL WARM 1 4.5° €
Signature (Received)	Printed Hipolife	Company/ Agency	Date/ 4-10-12 Time 18:40	CUSTODY SEALED YES NO T
Signature (Relinquished)	Printed Hipolites	Company/ Agency	Date/ 4-10-1-1 Time 27600	SPECIAL REQUIREMENTS:
Signature (Received) Mula	Printed Suabirwing	Company/ Agency TLI	Date/ Time 4/10/12 22:00	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date		Number	In	itial pH	Buf	fer Added (mL)	F	inal pH	Tim	e Buffered	Ir	itials
4/10/12	80	0934-1	9	.5		JA	_	NA	1)A	7	
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4/11/12	800	967	7.0	0	Q.C	DmL	9.	5	9:1	5am	M	_
4/11/12	400	Procen	9,8	5	1)/		J.)	4	<i>\\</i>	4	M	5
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		-3									1	
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		7	\perp				\perp					
		-6 -7 -6 -9				·	\perp					
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C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

MVh

G-1/7/1041

Turbidity/pH Check Adjusted to Sample Number **Turbidity** Hq Date **Analyst Need Digest** pH<2 (Y/N) 800853 (11-13) < 1 72 4-5-12 BE NO XCS 7: 30 AM 800881(1-21) < 1 <2 × 25 3314A 800 875-4 < 1 ΚZ NO yes 800866 71 72 Ves x < 5 = 14 130 301 mA 800 878 Ţ < 2 3010A 700 111.20 BE4.5.12 XCS 800880 <1 NO 800879 71 Yes 3010 A BE 12 800 891 800 907 71 < 2. 4-6-12 BE 425 3 10A 8008351:-51 Κ١ **۷**2 202809 42 >1 500121(12) ۷ ک 42 YC3 3010 A 800 913 <1 71 4-9-12 BE Xe3 30104 800914 71 < \ 800 91511-33) 12 NO. XCS 7:45AM 800916(1-18) 800917 (1-17) 200918 (1-18) S00928 <1 2 Z 4-10-12 BE NO NO 800929 4-10-Ryes 800930 >2 30104 YES 7: 30 79 M 800 931 (1-4) -2,3 71 < 2 - 293 xc5 3010A 80093447 3010A ¥ 05 800 736(1-7) 800 9354-6) 200939 Yes 30AA NO 8=3764L1-101 < 1 < 2 4-11-12 x 25 30104 800 963-1 800 965(1-1) 800 966L1-9) 800967 72 YCS 8 30 AM 80076811-14) -1271, 42 800 9354-3 <1 72 BE 4 xe5 14:00 NO Con 949 800 940 71 <2 yes BelaA 800950 8 00 970 800974-4 800 972 < 1 NO Me 800 971 xes 30/0A 1 BE 4-11-12 800 18 21-31 <1 72 4-12-12 BE No xes 8:30 800986L1-31 - 271 <2 -2 Xes 3010 A -2 1-1272 800998(1-28) <1 Na 1-12 725 8:45 8,00 999LI-24 **<** \ 22 NO NO 800 9974-281 くヽ **4**2 Vo No 800 98 9 ۲. 12 NO NO 200999 71 12 yes 3010A 800991 71 72 y ES 30 lo A 7 = 5 (1 1 A A) 200992 < 1 72 No XCS 14: 20AM

51

>1

12

くて

4-13-12

BE

804007

8001008

Xes

Yes

3-104

3010A



Sample Integrity & Analysis Discrepancy Form

. Cli	ent: $E\mathcal{L}$	Lab # <u>80096</u> 7
Dat	te Delivered: <u>0 4</u> / <u>10</u> / 12 Time: <u> </u>	Field Service
1.	, Was a Chain of Custody received and signed?	√2Yes □No □N/A
2 .	Does Customer require an acknowledgement of the COC?	□Yes □No ÞN/A
3 .	Are there any special requirements or notes on the COC?	□Yes □No ÞN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ŹN/A
<i>5</i> .	Were all requested analyses understood and acceptable?	AYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? 3.5°C	, \$\forall Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)?	Layes ONO ON/A
8.	Were sample custody seals intact?	□Yes □No ZIN/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?	ØYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	Yes □No ∞ NA
12.	Were samples pH checked? pH = $\frac{\mathcal{L} C \cdot C \cdot C}{\mathcal{L} \cdot C}$	∰Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	∠ÓYes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	,⊈Yes □No □N/A
5.	Sample Matrix: □Liquid □Drinking Water □Ground W	
	□Sludge □Soil □Wipe □Paint □Solid 및	Other <u>Waser</u>
6 .	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	2. Sleabucci



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

April 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-357A PROJECT, GROUNDWATER

MONITORING, TLI NO.: 801083

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-357a 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 April 16, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

√v – Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801083

Date: April 30, 2012

Collected: April 16, 2012 Received: April 16, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Kim Luck
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba / David Blackburn

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Laboratory No.: 801083

Date Received: April 16, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801083-001	SC-700B-WDR-357a	E120.1	NONE	4/16/2012	6:06	EC	7500	umhos/cm	2.00
801083-001	SC-700B-WDR-357a	E200.8	NONE	4/16/2012	6:06	Chromium	ND	ug/L	1.0
801083-001	SC-700B-WDR-357a	E200.8	NONE	4/16/2012	6:06	Manganese	2.2	ug/L	1.0
801083-001	SC-700B-WDR-357a	E218.6	LABFLT	4/16/2012	6:06	Chromium, hexavalent	ND	ug/L	1.0
801083-001	SC-700B-WDR-357a	SM2130B	NONE	4/16/2012	6:06	Turbidity	ND	NTU	0,100
801083-001	SC-700B-WDR-357a	SM2540C	NONE	4/16/2012	6:06	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.

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

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Page 1 of 8

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Printed 4/30/2012

Laboratory No. 801083

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 4/16/2012 10:20:00 PM

Field ID				Lab ID	Col	lected	Matr	rix
SC-700B-WDR-357a				801083-001	04/16	/2012 06:06	Wat	er
Specific Conductivity - E	PA 120.1		Batch	04EC12D				e ^r
Parameter	`	Unit	Ana	lyzed	DF	MDL	RL	Result
801083-001 Specific Conduct	ivity	umhos/	cm 04/18	1/2012	1.00	0.0950	2.00	7500
Method Blank								
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND				Lab ID =	801083-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7500	Expected 7500	F	RPD 0.00	Accepta 0 - 10	ance Range
Parameter Specific Conductivity Lab Control Sample D	Unit umhos uplicate	DF 1.00	Result 700.	Expected 706	F	Recovery 99.2	Accepta 90 - 110	nce Range)
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 702	Expected 706	F	Recovery 99.4	Accepta 90 - 110	ance Range)
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 701	Expected 706	F	Recovery 99.3	Accepta 90 - 110	ince Range)
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 939	Expected 998	F	Recovery 94.1	Accepta 90 - 110	ince Range)
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 945	Expected 998	F	Recovery 94.7	Accepta 90 - 110	ince Range)



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 4/30/2012

Page 3 of 8

Chrome VI by EPA 218.6

Batch 04CrH12N

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801083-001 Chromium, Hexa	valent	ug/L	04/17	/2012 13:18	5,00	0.130	1.0	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	801057-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 33.7	Expected 33.6		RPD 0.234	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.187	Expected 0.200		Recovery 93.3	Accepta 70 - 130	ance Range)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.00	Expected 5.00		Recovery 100.	90 - 110	ance Range) 800963-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.54	Expected/Ac 6.54(5.00)	dded	Recovery 100.0	90 - 110	ance Range) 800963-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.979	Expected/Ac 1.00(1.00)	ded	Recovery 97.9	90 - 110	ance Range) 801057-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.982	Expected/Ac 1.00(1.00)	dded	Recovery 98.2	90 - 110	ance Range) 801058-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 16.7	Expected/Ac 16.8(10.0)	dded	Recovery 98.9	90 - 110	ance Range) 801058-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Ad 1.02(1.00)	dded	Recovery 97.9	90 - 11	ance Range 0 801081-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 6.60	Expected/Ac 6.63(5.00)	dded	Recovery 99.3	Accepta 90 - 110	ance Range)



Client: E2 Consulting Eng	ineers, Inc.		oject Name: oject Number	PG&E Topock Pro : 424973.01.DM	ject	Page 4 of 8 Printed 4/30/2012
Matrix Spike						Lab ID = 801081-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.60	Expected/Added 6.60(5.00)	Recovery 99.9	Acceptance Range 90 - 110 Lab ID = 801081-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.88	Expected/Added 1.88(1.00)	Recovery 100.0	Acceptance Range 90 - 110 Lab ID = 801081-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.01	Expected/Added 1.00(1.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801083-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 4.94	Expected/Added 5.00(5.00)	Recovery 98.7	Acceptance Range 90 - 110 Lab ID = 801083-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 0.924	Expected/Added 1.04(1.00)	Recovery 88.4	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.02	Expected 5.00	Recovery 100.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 5 of 8 Printed 4/30/2012

Metals by EPA 200.8, Total Parameter		Unit	Batch Analy	042512A yzed I	DF	MDL	RL	Result
801083-001 Chromium		ug/L	04/25/	2012 17:06 5	.00	0.195	1,0	ND
Manganese		ug/L	04/25/	2012 17:06 5	.00	0.270	1.0	2.2
Method Blank								
Parameter	Unit	DF	Result					
Chromium u	ug/L	1.00	ND					
Manganese t	ug/L	1.00	ND					
Duplicate							Lab ID =	801083-001
Parameter	Unit	DF	Result	Expected		RPD	•	ance Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	2.00	2.25		11.9	0 - 20	
Low Level Calibration Ver	ification							
Parameter	Unit	DF	Result	Expected		Recovery	,	ance Range
Chromium	ug/L	1.00	0.218	0.200		109.	70 - 13	0
Manganese	ug/L	1.00	0.212	0.200		106.	70 - 13	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery		ance Range
Chromium	ug/L	5.00	100.	100.		100.	85 - 11	5
Manganese	ug/L	5.00	96.9	100.		96.9	85 - 11	
Matrix Spike							Lab ID =	801083-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range
	ug/L	5.00	113.	100.(100.)		113.	75 - 12	5
Manganese	ug/L	5.00	112.	102.(100.)		109.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accept	ance Range
	ug/L	1.00	9.90	10.0		99.0	90 - 11	0
Manganese	ug/L	1.00	9.63	10.0		96.3	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery		ance Range
	ug/L	1.00	9.84	10.0		98.4	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery		ance Range
	ug/L	1.00	9.69	10.0		96.9	90 - 11	0



Client: E2 Consulting Er	ngineers, Ind		oject Name: oject Numbe	PG&E Topodr: 424973.01.E	•	ct	Printed 4	age 7 of 8 /30/2012
Interference Check S	standard AB							
Parameter	Unit	DF	Result	Expected	f	Recovery	•	nce Range
Manganese	ug/L	1.00	9.41	10.0		94.1	80 - 120)
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	ance Range
Manganese	ug/L	1.00	9.57	10.0		95.7	80 - 120)
Total Dissolved Solids Parameter	by SM 2540	Unit		05TDS12G lyzed	DF	MDL	RL	Result
801083-001 Total Dissolved	Solids	mg/L	04/18	3/2012	1.00	0.400	250,	4110
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	801120-005
Parameter	Unit	DF	Result	Expected	ı	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	804	828		2.94	0 - 5	
Lab Control Sample								

Result

Result

504

465

DF

1.00

DF

1.00

Unit

mg/L

Unit

mg/L

Parameter

Parameter

Total Dissolved Solids

Total Dissolved Solids

Lab Control Sample Duplicate

Expected

Expected

500.

500.

Recovery

Recovery

101.

93.0

Acceptance Range

Acceptance Range

90 - 110

90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Printed 4/30/2012

Turbidity by SM 2130 B			Batch	04TUC12N			·	
Parameter		Unit	Anal	lyzed	DF	MDL	RL	Result
801083-001 Turbidity		NTU	04/17	/2012	1.00	0.0140	0.100	ND
Method Blank	-							
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	801083-001
Parameter	Unit	DF	Result	Expected	ſ	RPD	Accepta	ance Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	ı	Recovery	•	ance Range
Turbidity	NTU	1.00	8.13	8.00		102.	90 - 110	ו
Lab Control Sample Du	plicate							
Parameter	Unit	DF	Result	Expected	!	Recovery	Accepta	ance Range
Turbidity	NTU	1.00	8.10	8.00		101.	90 - 110)

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS12G

Date Calculated: 4/18/12

Laboratory Number	Sample volume, ml	Initial Weight,g	1st Final Weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0,5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL,	Reported Value, ppm	DF
BLANK	100	68.1057	68.1068	68.1066	0.0002	No	0.0009	9.0	25.0	ND	1
801057-1	50	71.0892	71.1471	71.1468	0.0003	No	0.0576	1152.0	50.0	1152.0	1
801057-2	50	105.3568	105,4135	105.4131	0.0004	No	0.0563	1126.0	50,0	1126.0	1
801057-3	50	68.3182	68,3796	68,3794	0,0002	No	0.0612	1224.0	50.0	1224.0	1
801057-4	50	67,7758	67.8272	67.8268	0.0004	No	0.0510	1020.0	50.0	1020,0	1
801057-5	50	67.2111	67.2412	67.2408	0.0004	No	0.0297	594,0	50,0	594.0	1
801083	10	65,6285	65,6699	65.6696	0.0003	No	0.0411	4110.0	250.0	4110,0	1
801118-1	100	108,6863	108.7211	108.7208	0,0003	No	0.0345	345,0	25.0	345.0	1
801120-1	100	104.2404	104.2698	104.2694	0.0004	No	0.0290	290.0	25.0	290,0	1
801120-3	100	115,2360	115.2758	115.2755	0.0003	No	0.0395	395.0	25.0	395.0	1
801120-5	50	72.4985	72.5403	72.5399	0.0004	No	0.0414	828.0	50.0	828,0	1
801120-5D	50	70.3026	70.3431	70.3428	0,0003	No	0.0402	804,0	50.0	804.0	1
801129-5	100	105.6288	105.6672	105.6668	0.0004	No	0.0380	380,0	25.0	380.0	1
801130	50	76.5146	76.5602	76,5598	0.0004	No	0.0452	904.0	50.0	904.0	1
LCSD	100	73.4950	73.5458	73.5454	0.0004	No	0.0504	504,0	25.0	504,0	1
LCS	100	67.0590	67.1059	67.1055	0.0004	No	0,0465	465.0	25.0	465.0	1

Calculation as follows:

Fifterable 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)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS12G Date Calculated: 4/18/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801057-1	1711	0.67	1112.15	1.04
801057-2	1780	0.63	1157	0.97
801057-3	1906	0.64	1238.9	0.99
801057-4	1516	0.67	985.4	1.04
801057-5	993	0.60	645.45	0.92
801083	7500	0.55	4875	0.84
801118-1	548	0.63	356.2	0.97
801120-1	510	0.57	331.5	0.87
801120-3	618	0,64	401.7	0.98
801120-5	1365	0.61	887.25	0,93
801120-5D	1365	0.59	887.25	0.91
801129-5	640	0.59	416	0.91
801130	1629	0.55	1058.85	0.85



AX





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-357a]

Rec'd 04/16/12 sea 80 10 8 3

COU Number

TURNAROUND TIME	10	Days		
DATE 04/16/12	PAGE	1_	QF	1

COMPANY	E2						$\overline{}$	$\overline{}$	7	7	7	7	7	7	7	7	\mathcal{I}	7	7	\overline{I}	T	7		
PROJECT NAME	PG&E Topock	·										/			/	/					/	/	COMME	NIS
PHONE	(530) 229-3303	3	fax <u>(530</u>) 339-3303		,	/ /	/ /	/ /	/ /	/ /	/	/ /	/ /	' 	/	/ /	/ /	/ /	/ /	/ /	/		
ADDRESS	155 Grand Ave	Ste 1000						r / =													ž/			
	Oakland, CA 94	4612				/2	s / , u	720 4,							/									
P.O. NUMBER	424973.01.DM		TEAM	1		5 Filler	70.77 C	tance (/_/	/ /		/	/ /	/ /	/ /	/	/ /	/	/ /	CONTAINE				
SAMPLERS (SIGNA	TURE	Chris b	eutz			(9) (g	\$ \ \$ \ \$ \	TO COL	ş /		12/11/01									40 X				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	20,85	Tob/Ma	Specific	TDS (SM2C)		Turbidity for		/ ,	/	/ /	/ /	Ι,	/ /	/	NUMBER					
SC-700B-WDF	≀-357a	04/16/12	06:06	Water	х	х	х	x		х			M*************************************						3	P	11 =	7 (700	7)
					,														3	το:	TAL NU	MBER	OF CONTA	INERS



Sample Conditions Ree Form Attached

	CHAIN OF CUSTO	DY SIGNATURE RECO	RD	SAMPLE CONDITIONS
Signature (Relinquished)	night Printed OKnigi	+ Company/ CHZW Agency	Hu Date/ 4-16-12 Time /650	RECEIVED COOL WARM "F
<u> </u>		Company/ CAgency	Date/ 4/16/12 Time //6/2	CUSTODY SEALED YES NO NO
		Company/ CCCAgency 7.6	Date Date Date	SPECIAL REQUIREMENTS:
Signature (Received)	Printed Name Key	Company/ TC/	Date/ 4-16-22	2.20
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
4/17/12	801081-1	9-5	NA	NIA	WA	QJ
	<u> </u>				ĺ	
	3					
1	<u> </u>					
	<u>₩</u> \$	<u> </u>	- V		<u> </u>	
14/17/12	801084-1	9.5	NA	MA	NA	4
	-3					
	- 4					
	-5					
	-6					
	11					
	8					
	-9					
V	1 -11	4	V	1	V	
4/17/12	80(082-(9-5	N/A	1.5 9.5	N/A 7:30	125
4/17/12	80(083.	7	2mL	9.5	730	MG
						,
•						
						···
			***************************************			······································

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

GW 0421/12

Turbidity/pH Check

		ı vı	Didity/pri C	HOOK		
Sample Number	Turbidity	рH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 1013-4	71	12	4-13-12	BE	×es	3010 4
801014	٧,		1		No	No
80102361-8	ا				Yes	30\0A
F1 0103	≻ ί					
801018	. <1				No	No
2010年(1+2)	<u> </u>	<2	4-16-12	BE	yes	301871
80105761-51	Ĺ	Ì		Ĭ	1	
201043(1,3)	>1					
801045(1-24)	<1	> 2			No	xe3 8:00 Am
801046 C1-50)						8:00 AM
20 10 HE (1-80)						8:45 AM
801047493)		1-2342 24-0372				7e3 24-93 1541
ça 1050	71	∠H-0372 <2			y <5	3°10A
80104411-34)		> 2			N e	xes 10:15 AM
801059	71	72			x es	3010 A x c3 : 11:15
821068	<١	< 2	4-17-12	BE	No	No
801067						
801075		>2				X C> 1:30 A M
801081453)		42			×c5	3010 A
80 1082-1	>1	<u>ر</u> و				
8010841-11	/ \ \	Ì				
801083	Ī	72				YCS 9:30 A M
801077	४।	42	4-19-12	BE	No	NO
801078(1,2)	71	42			yes	3010A
80107911-27	j					
801403(1-3)	<u>۲</u> ۱	>2			No	yes 8:00 AM
801110		42		-		№ 0
801111						
801112		-				
80 1113						
80 1114						
80 N 15					\$ XLS	301eA
80 1116					NO	
	7)				yes	3010 A
8011194	5)			1		
80 11 1811- 80 111912- 80 112011	93-0)					
80 11 299)		>2			No	xc5 8:30 Am
80 1/34(10-12)		>42	B&4-19-12			1. 1
80 1736 (192-7)		<2			yes.	3910A
80 113761-3	·					
80 1 138(1-8)		,				
501144 11-7	₹1	>2		Y	No	xc5 17:15
80 1145 (1-7)	T T	1			1	1
8011480-10)		<2			No	No
80 1147 (1-10)	*	72				xes 17:15
80 1148 (1-10)				<u> </u>		
80 1149L1-5	<u> </u>				1 1	T.
801142(1-2)	71	1 12			yes	30104
80 1135	- (i	>2			No	Y = 5 17:15
0 1125		1 , , ,	1V			





Sample Integrity & Analysis Discrepancy Form

CII	ent: EQ	_ Lab# <u>80108</u>
Dat	te Delivered: <u>4</u> / <u>/6</u> / 12 Time: <u>22∶7</u> 0 By: □Mail 🏚	dField 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 ÞNA
3 .	Are there any special requirements or notes on the COC?	□Yes □No □NA
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ⊅NA
5 .	Were all requested analyses understood and acceptable?	ДYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>1°C</u>	¤(Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	
8.	Were sample custody seals intact?	□Yes □No ØN/A
9.	Does the number of samples received agree with COC?	ØYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ØYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdal l □Client	□Yes ⊠No □N/A
12.	Were samples pH checked? pH =	□Yes pá∖no □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Ø(Yes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	Yes □No □N/A
5 .	Sample Matrix: □Liquid □Drinking Water □Ground □Sludge □Soil □Wipe □Paint □Solid)	
6 .	Comments:	
7	Sample Check-In completed by Truesdail Log-In/Receiving:	Hex

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

May 2, 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-357B PROJECT,

GROUNDWATER MONITORING, TLI NO.: 801188

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-357b 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 April 20, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

No other violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801188

Date: April 30, 2012

Collected: April 20, 2012 Received: April 20, 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	George Wahba / Maksim Gorbunov

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Laboratory No.: 801188

Date Received: April 20, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801188-001	SC-700B-WDR-357b	E120.1	NONE	4/20/2012	13:00	EC	7870	umhos/cm	2.00
801188-001	SC-700B-WDR-357b	E200.8	NONE	4/20/2012	13:00	Chromium	4.0	ug/L	1.0
801188-001	SC-700B-WDR-357b	E200.8	NONE	4/20/2012	13:00	Manganese	22.2	ug/L	1.0
801188-001	SC-700B-WDR-357b	E218.6	LABFLT	4/20/2012	13:00	Chromium, hexavalent	2.6	ug/L	1.0
801188-001	SC-700B-WDR-357b	SM2130B	NONE	4/20/2012	13:00	Turbidity	0.100	NTU	0.100
801188-001	SC-700B-WDR-357b	SM2540C	NONE	4/20/2012	13:00	Total Dissolved Solids	4390	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

005

EXCELLENCE IN INDEPENDENT TESTING



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Page 1 of 8

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

Printed 4/30/2012

Laboratory No. 801188

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

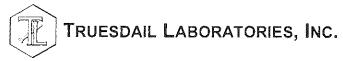
Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 4/20/2012 8:30:00 PM

Matrix Collected Lab ID Field ID 04/20/2012 13:00 Water 801188-001 SC-700B-WDR-357b Batch 04EC12F Specific Conductivity - EPA 120.1 DF MDL RL Result Unit Analyzed Parameter 7870 04/23/2012 1.00 0.0950 2.00 801188-001 Specific Conductivity umhos/cm Method Blank Unit DF Result Parameter umhos ND Specific Conductivity 1.00 Lab ID = 801188-001 Duplicate **RPD** Acceptance Range DF Expected Unit Result Parameter 0 - 57870 0.00 umhos 1.00 7870 Specific Conductivity Lab Control Sample DF Result Expected Recovery Acceptance Range Unit Parameter 706 98.9 90 - 110 1.00 698 umhos Specific Conductivity MRCCS - Secondary Acceptance Range Unit DF Result Expected Recovery Parameter 90 - 110 706 99.3 701 umhos 1.00 Specific Conductivity MRCVS - Primary Acceptance Range Expected Recovery Unit DF Result Parameter 90 - 110 96.2 960. 998 umhos 1.00 Specific Conductivity



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 4/30/2012

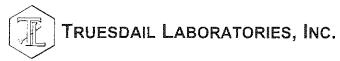
Page 2 of 8

Chrome VI by EPA 218.6 Batch 04CrH12S

Parameter		Unit	Ana	lyzed [F MDL	RL Result
801188-001 Chromium, Hexa	valent	ug/L	04/24	/2012 11:33 5.	00 0.130	1.0 2.6
Method Blank						
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND			Lab ID = 801023-002
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 3.16	Expected 3.14	RPD 0.679	Acceptance Range 0 - 20
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.213	Expected 0.200	Recovery 106.	Acceptance Range 70 - 130
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.75	Expected 5.00	Recovery 95.1	Acceptance Range 90 - 110 Lab ID = 801023-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.78	Expected/Added 1.77(1.00)	d Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801023-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.19	Expected/Adde 8.14(5.00)	d Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801023-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 16.3	Expected/Adde 16.3(10.0)	d Recovery 99.3	Acceptance Range 90 - 110 Lab ID = 801023-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.10	Expected/Adde 6.04(5.00)	d Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801023-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.84	Expected/Adder 1.84(1.00)	d Recovery 99.4	Acceptance Range 90 - 110 Lab ID = 801023-006
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.88	Expected/Adde 1.90(1.00)	d Recovery 98.3	Acceptance Range 90 - 110



Client: E2 Consulting En	gineers, Inc		oject Name: oject Number	PG&E Topock Pro :: 424973.01.DM	ject	Page 3 of 8 Printed 4/30/2012
Matrix Spike						Lab ID = 801023-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.06	Expected/Added 6.01(5.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801023-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.06	Expected/Added 6.03(5.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801023-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Added 1.00(1.00)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 801136-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.59	Expected/Added 1.57(1.00)	Recovery 102.	Acceptance Range 90 - 110 Lab ID = 801136-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.10	Expected/Added 1.03(1.00)	Recovery 106.	Acceptance Range 90 - 110 Lab ID = 801136-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.71	Expected/Added 1.68(1.00)	Recovery 103.	Acceptance Range 90 - 110 Lab ID = 801136-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.17	Expected/Added 7.10(5.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801136-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.25	Expected/Added 7.28(5.00)	Recovery 99.4	Acceptance Range 90 - 110 Lab ID = 801136-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.92	Expected/Added 7.87(5.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801136-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 15.1	Expected/Added 15.1(10.0)	Recovery 99.7	Acceptance Range 90 - 110 Lab ID = 801188-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.74	Expected/Added 7.70(5.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801188-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 7.76	Expected/Added 7.66(5.00)	Recovery 102.	Acceptance Range 90 - 110



Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 5 of 8

Project Number: 424973.01.DM Printed 4/30/2012

Metals by EPA 200.8, To	LUF	1 1 !4		042512A	\ C	A A⊡\	ы	Result
Parameter		Unit		<u>/</u>)F	MDL	RL	
801188-001 Chromium		ug/L			00	0.195	1.0	4.0
Manganese		ug/L	04/25	/2012 18:32 5.	.00	0.270	1.0	22.2
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	801188-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	ance Range
Chromium	ug/L	5.00	3.57	3.96		10.4	0 - 20	
Manganese	ug/L	5.00	19.7	22.2		11.8	0 - 20	
Low Level Calibration	Verification	1						
Parameter	Unit	DF	Result	Expected	R	lecovery	Accepta	ance Range
Chromium	ug/L	1.00	0.218	0.200		109.	70 - 130	כ
Manganese	ug/L	1.00	0.212	0.200		106.	70 - 130	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	98.4	100.		98.4	85 - 11	5
Manganese	ug/L	5.00	91.6	100.		91.6	85 - 11	5
Matrix Spike							Lab ID =	801188-001
Parameter	Unit	DF	Result	Expected/Adde	d R	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	103.	104.(100.)		98.8	75 - 12	5
Manganese	ug/L	5.00	115.	122.(100.)		93.0	75 - 12	5
Matrix Spike Duplicate	е						Lab ID =	801188-00
Parameter	Unit	DF	Result	Expected/Adde	d R	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	105	104.(100.)		101.	75 - 12	5
Manganese	ug/L	5.00	113	122.(100.)		90.8	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	9.90	10.0		99.0	90 - 11	0
Manganese	ug/L	1.00	9.63	10.0		96.3	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Rang
Chromium	ug/L	1.00	9.69	10.0		96.9	90 - 110	0



Client: E2 Consulting En		roject Name: roject Numbe	Page 7 of 8 Printed 4/30/2012					
Interference Check St	andard AB							
Parameter	Unit	DF	Result	Expected	Recovery	•	ance Range	
Chromium	ug/L	1.00	10.3	10.0	103.	80 - 120)	
Interference Check St	andard AB							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range	
Manganese	ug/L	1.00	9.41	10.0	94.1	80 - 120	כ	
Interference Check St	andard AB							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range	
Manganese	ug/L	1.00	9.57	10.0	95.7	80 - 120	80 - 120	
Total Dissolved Solids b	y SM 2540) C Unit		04TDS12J lyzed	DF MDL	RL	Result	
801188-001 Total Dissolved Solids		mg/L	04/25/2012		1.00 0.400	250.	4390	
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate						Lab ID =	801188-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range		
Total Dissolved Solids	mg/L	1.00	4560	4390	3.80	0 - 5		
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range	
Total Dissolved Solids	mg/L	1.00	486	500.	97.2	90 - 11	0	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 4/30/2012

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Turbidity by SM 2130 B

Batch 04TUC12P

Parameter		Unit	Analyzed		DF	MDL	RL	Result	
801188-001 Turbidity	3-001 Turbidity NTU 04/20/2012)/2012	1,00	0.0140	0.100	0.100		
Method Blank									
Parameter	Unit	DF	Result						
Turbidity	NTU	1.00	ND						
Duplicate							Lab ID =	801188-001	
Parameter	Unit	DF	Result	Expected	F	RPD	Acceptance Range		
Turbidity	NTU	1.00	0.100	0.100		0.00	0 - 20		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	7.32	8.00		91.5	90 - 110		
Lab Control Sample D	uplicate								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	7.35	8.00		91.9	90 - 110		

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

لر براج Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS12J

Date Calculated: 4/26/12

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
100	76.5137	76.5137	76.5137	0.0000	No	0.0000	0.0	25.0	ДИ	1
10	47,9664	48.0104	48.0103	0.0001	No	0.0439	4390.0	250.0	4390.0	1
10	51.0746	51.1168	51,1166	0.0002	No	0.0420	4200.0	250.0	4200.0	1
10	49.6829	49.7286	49.7285	0.0001	No	0.0456	4560.0	250.0	4560.0	1
100	73.5985	73.6473	73.6471	0,0002	No	0.0486	486.0	25.0	486.0	1
								7		<u> </u>
						,				
	volume, ml 100 10 10 10	volume, ml weight, g 100 76.5137 10 47.9664 10 51.0746 10 49.6829	volume, ml initial weight,g Final weight,g 100 76.5137 76.5137 10 47.9664 48.0104 10 51.0746 51.1168 10 49.6829 49.7286	volume, ml Initial weight,g Final weight,g 2nd Final weight,g 100 76.5137 76.5137 76.5137 10 47.9664 48.0104 48.0103 10 51.0746 51.1168 51.1166 10 49.6829 49.7286 49.7285	volume, ml Initial weight,g ml Final weight,g 2nd Final weight,g Difference, g 100 76.5137 76.5137 76.5137 0.0000 10 47.9664 48.0104 48.0103 0.0001 10 51.0746 51.1168 61.1166 0.0002 10 49.6829 49.7286 49.7285 0.0001	volume, ml Initial weight,g ml Final weight,g ml 2nd Final weight,g weight,g meight,g Difference, g 0.5mg? Yes/No 100 76.5137 76.5137 76.5137 0.0000 No 10 47.9664 48.0104 48.0103 0.0001 No 10 51.0746 51.1168 51.1166 0.0002 No 10 49.6829 49.7286 49.7285 0.0001 No	volume, ml Initial weight,9 ml Final weight,9 ml 2nd Final weight,9 ml Difference, g 0.5mg? Yes/No Residue weight,9 100 76.5137 76.5137 76.5137 0.0000 No 0.0000 10 47.9664 48.0104 48.0103 0.0001 No 0.0439 10 51.0746 51.1168 51.1166 0.0002 No 0.0420 10 49.6829 49.7286 49.7285 0.0001 No 0.0456	volume, ml Initial weight,9 ml Final weight,9 ml 2nd Final weight,9 ml Difference, g 0.5mg? Yes/No Residue weight,9 ml residue, ppm 100 76.5137 76.5137 76.5137 0.0000 No 0.0000 0.0 10 47.9664 48.0104 48.0103 0.0001 No 0.0439 4390.0 10 51.0746 51.1168 51.1166 0.0002 No 0.0420 4200.0 10 49.6829 49.7286 49.7285 0.0001 No 0.0456 4560.0	volume, ml Initial weight,g Final weight,g 2nd Final weight,g Difference, g 0.5mg? Yes/No Residue weight,g residue, ppm RL, ppm 100 76.5137 76.5137 76.5137 0.0000 No 0.0000 0.0 25.0 10 47.9664 48.0104 48.0103 0.0001 No 0.0439 4390.0 250.0 10 51.0746 51.1168 51.1166 0.0002 No 0.0420 4200.0 250.0 10 49.6829 49.7286 49.7285 0.0001 No 0.0486 486.0 25.0 100 73.5985 73.6473 73.6471 0.0002 No 0.0486 486.0 25.0	volume, ml Initial weight,g ml Final weight,g weight,g weight,g 2nd Final weight,g g Difference, g 0.5mg7 yes/No Residue weight,g ppm residue, ppm RL, ppm Value, ppm 100 76.5137 76.5137 76.5137 0.0000 No 0.0000 0.0 25.0 ND 10 47.9664 48.0104 48.0103 0.0001 No 0.0439 4390.0 250.0 4390.0 10 51.0746 51.1168 51.1166 0.0002 No 0.0420 4200.0 250.0 4200.0 10 49.6829 49.7285 49.7285 0.0001 No 0.0456 4560.0 250.0 4560.0 100 73.5985 73.6473 73.6471 0.0002 No 0.0486 486.0 25.0 486.0 10

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)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS12J Date Calculated: 4/26/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801188	7870	0.56	5115.5	0.86
801216	7460	0.56	4849	0.87
801188D	7870	0.58	5115.5	0.89
LCS				
	The same state and a state and			
				, ,,,,,,
			j	



M

	1.2 J
	resented
7000	

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

CHAIN OF CUSTODY RECORD flM3Plant-WDR-357bl

COC Number

TURNAROUND TIME

10 Days

WWW.	truesdail.com					*				- 1	OV		IO			DATE	04/20	0/12	PAG	E 1	OF <u>1</u>	_
COMPANY	E2						7	7	7	7	7 7	.7	7	7	7	7	7	7 7	77			1
PROJECT NAME	PG&E Topock								/ /	/	/ _{Pa}	c'd	0.4	10 0 u		j	/ /		′ /	COM	MENTS	
PHONE	(530) 229-3303		FAX (530) 339-3303		ı		/ /	' /		/s	8 () 14/	200	8			//	/			
ADDRESS	155 Grand Ave	Ste 1000								/	//	/	/	/	/			F. E. S.	/			
	Oakland, CA 94	612	··············		**************************************	/8	/ 4	1. Min (1201)	//	/	/ /			/	/	/ /	/ /	CONTAINERS	7			
P.O. NUMBER	424973.01.DM	a	TEAN	1	1 /	Lab Fillered	(200.7)	c ight	· /			/ /	/ /	' /	/ /	/ /		#4.#				
SAMPLERS (SIGNA	ATURE			-				12 S			*/ /						/ /	ERO,				
SAMPLE I.D.	0	DATE	TIME	DESCRIPTION	Cr8 (218 E.	70/1/Mod	Specify	TDS (SM2540C)	/ /,	"urbiority (SM2x.	/ /		/ /	/ /	/ /	/ /		MBER				
SC-700B-WDF	R-357b	04/20/12	1300	Water	х	Х	Х	х	2	(#	4		DH:	= 6 (zo	17
											-		•				4	тотаі	NUMBER	1	TAINERS	



Sample Conditions See Form Attached

10	CHAIN OF CUSTODY SI	GNATURE RECORD	1/20/12	SAMPLE CONDITIONS
Signature (Relinquished) flesh	Printed ADE	Company/ Agency #ZM +#//	Date/ Time /5_30	RECEIVED COOL ☑ WARM ☐ 46°€
Signature (Received) 3. Dayaq	Printed Name <i>B.DAYAG</i>	Company/	Date/4-20-17 Time /530	CUSTODY SEALED YES ☐ NO ☑
Signature (Relinquished) & Daga	Printed Name <i>B - DAYA</i> G	Company/ Agency <u> </u>	Date/ 4-20-12-30	SPECIAL REQUIREMENTS:
Signature Signature	Printed Shir 64 nru 9	Company/ TLI	Date/ 4/20//2/	
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
	801/62-1	9.5	N/A	N/A	√/A	Gw
	1 -2	1		1.	1//	<u> </u>
	-3					
	-4					
	-5					
	V -6	V	V .	7	J	1
4/20/12	80/163-1	٩.5	NA	NIA	NA	A
	1 -2		1		14 // 3	1
	-3			,		
	-4					
	√ -5	1	V .			太一
4 20/12	1-491/c8	۹,5	NA	N/A	MA	1
	-2					
	-3				·	
	-6					
\/	<u> </u>	4	<u> </u>	1		4
4/20/12	801186-1	9.5	NA	NIA	N/A	(fu
1	-2					
	-3					
	-1				· ·	
	-5					
\ V	1 -6	V	<u> </u>	- // 	<u> </u>	<u> </u>
4/20/12	8-1187-1	9,5	N/A	N/A	N/A	6
	-2					
	-3					
	-4					
	-5					
	-6		<u> </u>			
4	V -11	4	4	1	4	
4 /21/12	801188	7	2 mL	⁰ \. 5	8:15 Am	G. B

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

G-4/25/12 041

Turbidity/pH Check Adjusted to Sample Number **Turbidity** рH Date Analyst **Need Digest** pH<2 (Y/N) 801141 くぃ くて 4-19-12 BE STLC NO 801164 L13-6) xes 3010A 801163 (1-5) 80 1164 (1-7) 801157 < l 4-23-12 <2 NO BE X 34-23-12 NO ToTal 881108 72 xes. X 5 9 15AM 3010A 80 (186(1-6) 12 80 N87(1-7) 101108 <1 く2 4-24-12 BE No NO 801192 >1 xtes 30 10A 801199 x e5 80 1218 とこ <u>۷</u> 4-25-12 BZ ×es 340A xes 1100 80121861-51 **₹**2 801217 LI-7 8012 19(1,3-12) 801220[1=6,31) 8012216 5,8) Z١ 801222 801225 NO NO 801226 801224 71 X e5 3010A 80 17.38 72 4-26-12 BE No X e5 801239 LISI 7:45 4h 801238 (12) 801240 (12) 801241 (9) 801249 <1 < 2 Xes 3010A 801250(1-8) 8012516-621 801251(1-8910) VB64-26-12 20124511-3) 72 🚓 NO x es 1145 801264 (1-7) ۷1 < Z 4-21-12 BE xes 30104 2012654-61 8012686192-11) 8012674-8) 201276 くて 4-30-12 36 30104 8012 75 NO 801277 801278 801301 52 Xes 30 leA 80 12 98 (8-61) <1 801299(元章) 80 12300 (192-5) 801303 (1-19) NO 80 1304 (1-10) 80 1307 < 1 くて 801308 フリ 3010A 115 801302 801252 -11





Sample Integrity & Analysis Discrepancy Form

. C	lient: <u> </u>	Lab# <u>80/188</u>
D:	ate Delivered P <u>4/20</u> /12 Time: <u>d0:3</u> 0 By: DMall 💆	Field Service
1,	. Was a Chain of Custody received and signed?	⊠Yes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ÞN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No ÉN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ÞÍN/A
5.	Were all requested analyses understood and acceptable?	AQYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>Y-6 ° C</u>	ÁYes □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 ÆŃ/A
9.	Does the number of samples received agree with COC?	AfYes □No □N/A
10.	Did sample labels correspond with the client ID's?	QYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdai l □Client	□Yes □No ÆN/A
2.	Were samples pH checked? pH = $\underline{Sel}(c.o.e.)$	ÆTYes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Yes DNo DN/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH Ø Std	ØYes □No □N/A
5.	Sample Matrix: □Liquid □Drinking Water □Ground V □Sludge □Soil □Wipe □Paint □Solid ☎(
5.	Comments:	
7,	Sample Check-In completed by Truesdail Log-In/Receiving:	L. Stealunia

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

May 16, 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-358 PROJECT, GROUNDWATER

MONITORING, TLI No.: 801216

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-358 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 April 24, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

No other violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

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

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 424973.01.DM

Laboratory No.: 801216

Date: May 16, 2012 Collected: April 24, 2012 Received: April 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
EPA 218.6	Hexavalent Chromium	George Wahba / Maksim Gorbunov



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Laboratory No.: 801216

Date Received: April 24, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801216-001	SC-700B-WDR-358	E120.1	NONE	4/24/2012	14:40	EC	7370	umhos/cm	2.00
801216-001	SC-700B-WDR-358	E200.8	NONE	4/24/2012	14:40	Chromium	ND	ug/L	1.0
801216-001	SC-700B-WDR-358	E200.8	NONE	4/24/2012	14:40	Manganese	7.9	ug/L	1.0
801216-001	SC-700B-WDR-358	E218.6	LABFLT	4/24/2012	14:40	Chromium, hexavalent	ND	ug/L	1.0
801216-001	SC-700B-WDR-358	SM2130B	NONE	4/24/2012	14:40	Turbidity	ND	NTU	0.100
801216-001	SC-700B-WDR-358	SM2540C	NONE	4/24/2012	14:40	Total Dissolved Solids	4200	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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Printed 5/16/2012

Laboratory No. 801216

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 4/24/2012 8:30:00 PM

Matrix Collected Lab ID Field ID 04/24/2012 14:40 Water 801216-001 SC-700B-WDR-358 Batch 04EC12G Specific Conductivity - EPA 120.1 DF MDL RL Result Unit Analyzed Parameter 7370 2.00 umhos/cm 04/26/2012 1.00 0.0950 801216-001 Specific Conductivity Method Blank DF Result Unit Parameter umhos 1.00 ND Specific Conductivity Lab ID = 801216-001 Duplicate RPD Acceptance Range Expected DF Result Unit Parameter 0 - 107370 0.00 1.00 7370 umhos Specific Conductivity Lab Control Sample Acceptance Range Recovery Unit DF Result Expected Parameter 90 - 110 96.3 680. 706 umhos 1.00 Specific Conductivity MRCCS - Secondary Acceptance Range Expected Recovery Unit DF Result Parameter 95.6 90 - 110 706 675 umhos 1.00 Specific Conductivity MRCVS - Primary Acceptance Range Expected Recovery DF Result Unit Parameter 90 - 110 998 97.0 968 umhos 1.00 Specific Conductivity

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801216-001 Chromium, Hex	avalent	ug/L	04/27	/2012 16:11	5.00	0.130	1.0	ND
Method Blank								
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND					
Duplicate							Lab ID =	801218-00
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.05	Expected 1.06	F	RPD 1.00	Accepta 0 - 20	ance Rang
Low Level Calibration	Verification							
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.185	Expected 0.200	F	Recovery 92.6	Accepta 70 - 130	ance Rang)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.76	Expected 5.00	F	Recovery 95.3	90 - 110	ance Rang) 801216-00
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.12	Expected/Add 5.09(5.00)	ed F	Recovery 100.	90 - 110	ance Rang) 801216-00
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.09	Expected/Add 1.09(1.00)	ed F	Recovery 100.	90 - 110	ance Rang) 801217-00
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Add 1.00(1.00)	ed F	Recovery 100.	90 - 110	ance Rang) 801218-00
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.04	Expected/Add 6.06(5.00)	ed f	Recovery 99.7	90 - 110	ance Rang) 801218-00
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 6.15	Expected/Add 6.15(5.00)	ed i	Recovery 100.	90 - 110	ance Rang 0 801218-00
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 6.98	Expected/Add 6.92(5.00)	led i	Recovery 101.	Accepta 90 - 110	ance Rang O



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Parameter		Unit	Ana	yzed [)F	MDL	RL	Result
801216-001 Chromium		ug/L	05/15	/2012 11:39 5	.00	0.195	1.0	ND
Manganese		ug/L	05/15	/2012 11:39 5	.00	0.270	1.0	7.9
Method Blank				,				
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	801216-001
Parameter	Unit	DF	Result	Expected	ı	RPD	Accepta	ance Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	7.78	7.95		2.11	0 - 20	
Low Level Calibration	on Verification	1						
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.208	0.200		104	70 - 130	כ
Manganese	ug/L	1.00	0.189	0.200		94.4	70 - 130	כ
Lab Control Sample	•							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Chromium	ug/L	5.00	88.1	100.		88.1	85 - 11	5
Manganese	ug/L	5.00	88.1	100.		88.1	85 - 11	5
Matrix Spike							Lab ID =	801216-001
Parameter	Unit	DF	Result	Expected/Adde	d l	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	107.	100.(100.)		107.	75 - 12	5
Manganese	ug/L	5.00	112.	108.(100.)		104.	75 - 12	5
Matrix Spike Duplica	ate						Lab ID =	801216-001
Parameter	Unit	DF	Result	Expected/Adde	d I	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	104.	100.(100.)		104.	75 - 12	5
Manganese	ug/L	5.00	110.	108.(100.)		102.	75 - 12	5
MRCCS - Secondar	ry							
Parameter	Unit	DF	Result	Expected	ł	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	9.86	10.0		98.6	90 - 110	ס
Manganese	ug/L	1.00	10.0	10.0		100.	90 - 110	כ
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	10.1	10.0		101	90 - 110	כ



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 5/16/2012

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801216-001 Total Dissolved	Solids	mg/L	04/25	/2012	1.00	0.400	250.	4200
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	801188-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	4560	4390		3.80	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Total Dissolved Solids	mg/L	1.00	486	500.		97.2	90 - 110)
		Unit	Ana	04TUC12R lyzed	DF	MDL	RL	Result
Turbidity by SM 2130 B Parameter 801216-001 Turbidity		Unit NTU	Ana		DF 1.00	MDL 0.0140	RL 0.100	Result ND
Parameter			Ana	lyzed				
Parameter 801216-001 Turbidity	Unit		Ana	lyzed				
Parameter 801216-001 Turbidity Method Blank	Unit NTU	NTU	Ana 04/25	lyzed				
Parameter 801216-001 Turbidity Method Blank Parameter		NTU DF	Ana 04/25 Result	lyzed			0.100	ND
Parameter 801216-001 Turbidity Method Blank Parameter Turbidity		NTU DF	Ana 04/25 Result	lyzed	1.00		0.100 Lab ID =	ND 801216-001
Parameter 801216-001 Turbidity Method Blank Parameter Turbidity Duplicate	NTU	DF 1.00	Ana 04/25 Result ND	lyzed 5/2012	1.00	0.0140	0.100 Lab ID =	ND 801216-001
Parameter 801216-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter	NTU Unit	DF 1.00	Ana 04/25 Result ND Result	lyzed 5/2012 Expected	1.00	0.0140 RPD	0.100 Lab ID = Accepta	ND 801216-001
Parameter 801216-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity	NTU Unit	DF 1.00	Ana 04/25 Result ND Result	lyzed 5/2012 Expected	1.00 F	0.0140 RPD	0.100 Lab ID = Accepta 0 - 20	ND 801216-00 ² ince Range
Parameter 801216-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample	NTU Unit NTU	DF 1.00 DF 1.00	Ana 04/25 Result ND Result ND	Expected 0.00	1.00 F	0.0140 RPD 0	0.100 Lab ID = Accepta 0 - 20	ND 801216-001 ince Range
Parameter 301216-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter	Unit NTU Unit Unit NTU	DF 1.00 DF 1.00	Ana 04/25 Result ND Result ND Result	Expected 0.00	1.00 F	0.0140 RPD 0 Recovery	0.100 Lab ID = Accepta 0 - 20 Accepta	ND 801216-00° ince Range
Parameter 801216-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter Turbidity	Unit NTU Unit Unit NTU	DF 1.00 DF 1.00	Ana 04/25 Result ND Result ND Result	Expected 0.00	1.00 F	0.0140 RPD 0 Recovery	0.100 Lab ID = Accepta 0 - 20 Accepta 90 - 110	ND 801216-00



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 9 of 9

Printed 5/16/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS12J Date Calculated: 4/26/12

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	76.5137	76.5137	76.5137	0.0000	No	0.0000	0.0	25.0	ND	1
801188	10	47.9664	48.0104	48.0103	0.0001	No	0.0439	4390.0	250.0	4390.0	1
801216	10	51.0746	51.1168	51.1166	0.0002	No	0.0420	4200.0	250.0	4200.0	. 1
801188D	10	49.6829	49.7286	49.7285	0.0001	No	0.0456	4560.0	250.0	4560.0	1
LCS	100	73.5985	73.6473	73.6471	0.0002	No	0.0486	486.0	25.0	486.0	1
						<u> </u>			-		
							-	:	<u> </u>		
LCSD											1

Calculation as follows:

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

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS12J Date Calculated: 4/26/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801188	7870	0.56	5115.5	0.86
801216	7460	0.56	4849	0.87
801188D	7870	0.58	5115.5	0.89
LCS				
	· · · · · · · · · · · · · · · · · · ·		<u> </u>	-
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TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008

CHAIN OF CUSTODY RECORD

COC Number

(714)	730-6239 FAX: (714 .truesdail.com	4) 730-6462				[IM	3Pla	nt-Wi	DR-358]			91	1 L		6			OUND 14/24/	TIME		0 Days	OF 1	-
COMPANY	E2	***************************************			T		7	7	7	7 7	7	7	7	6 ₹	7	7		7	7	_ 		***************************************	- 7 '
PROJECT NAME	PG&E Topock				ĺ				//		r) <i></i>	,						//	′ /	сомм	ENTS	
PHONE	(530) 229-3303	3	fax (530)	339-3303		j	/	/ ,	/ /		S	Rec'a '8	0	1/24/ 1 2	12	3	/	/	/ /				
ADDRESS	155 Grand Ave	Ste 1000		M. All to the command the section level and an elementary separations.					_ / /	/ /	' /	1		/	/	/	/		ERS	/			
	Oakland, CA 94	4612				/2		720 t	i/ /				/						/AIN/				
P.O. NUMBER	424973.01.DM		TEAM		/	Filtered	(200.7)	1 24	/	10%	/ /	/ /	' 	/	/ /	/	/	/ /	CONTAINERS				
SAMPLERS (SIGNA	ATURE	(Verez	V-		///9	fg /	Specific (200.7)	7DS (SMo.	8 8 / /	January (SM2130)									o /				
	***************************************	θ			Cr6 (278.6)	Total Metal		1/8/5		Atling.			/	/		/		NUMBER					
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/ ਨੂੰ /	70	/ જેં					/ /	/	/	/ /	/	/	/≥	/				
SC-700B-WDF	₹-358	04/24/12	14:40	Water	х	х	х	х	х							.maximum.		3			PH=	6 (za	1.7
																		3	TOTAL	NUMBER	OF CONTA	AINERS	



For Sample Conditions See Form Attached

		CHAIN OF CUSTODY SIGNATURE RECORD									SAMPLE CONDITIONS							
	nature elinquished)	C. Kue	q'lu-	Printed Name	C-Knight	Company/ Agency	CH2M.Hiù	Date/ Time	4/24/12	RECEIVED	COOL			M 🔲	4.4	Go-		
(Re	nature ceived)	. Day e	9		B. OAYAG	Company/ Agency	TLI	Date/ Time	4-24-12	CUSTODY SE	EALED	YES		NO [ν 			
(Re	nature Ilinquished)	3.0 ay	29		B-OAYAG	Company/ Agency	TL1	Date/ Time	4-24-12-	SPECIAL REQUIR	EMENTS:				***************************************	*************		
₹(Re	nature ceived)	rda	<u> </u>		habremus	Company/ Agency	TLI	Date/ Time	4/24/12 2013	Ð								
Y (Re	nature linquished)	***************************************		Printed Name		Company/ Agency		Date/ Time										
	nature ceived)		······································	Printed Name	***************************************	Company/ Agency		Date/ Time										

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Dete	The North			I	T	r
Date	Lab Numbe	r Initial pH			Time Buffered	Initials
9/25/12	801216		2mL	2.5	11 Am	G./
4/25/12	801217-	1 1	N/A	NIA	NIA	Gw
	-:	2			ŀ	1
						·
	_`				·	
	-	5	·			
		5				
	7	N.				
	-8					
	a				,	
4/25/12	801218-1	9.5	N/A	NIA	NIA	0
1	-2	 	10 / 11	N/11	N/N	6
	-3					-
	-4					
	-5		·			
41	$\frac{1}{2}$ $\frac{-6}{2}$		N/A	1/1/		4
4/25/12	801 219-1	9.5	N/V	NIA	NIA	Gu
	-2					
	-3					
	_ -1					
	_5					
					*	
	-7		·			
·	-8					
	-9					
	-10					1
1	-11		4			
		_		-	Y	

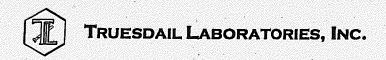
C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

C 5/3/1044

Turbidity/pH Check Adjusted to **Need Digest** Analyst **Turbidity** pΗ Date pH<2 (Y/N) Sample Number STLC BE NO 4-19-12 くい 801141 くて X25 3010A 801164 LY3-6) 801163 (1-5) He 32 4-23-12 80 1164 (1-T) NO NO 4-23-12 BE <2 < \ 801157 xes X 5 9 15AM 3010A 72 881108 Telil 80 (18661-61 くて 80 1187 (1-7) NO NO BÉ <1 4-24-12 <2 101108 30 lo.A Xes 801192 >1 xe5 801199 xes= 11:00 xe5 3410A 4-25-12 B2->2 80 1218 <1 <2 80121861-51 301217 LI-T 8012 19(1,3-12) 801220L12631) 8012216 (718) ヌヽ <2. 801222 No NO 801225 801226 3010A Xes 801224 71 xes 7:45 4m BE No 4-26-12 < 1 72 80 1238 801239(15) 801238 (12) 801240 (12) J801241 (9) Xes 3010A **イ**ヱ 801249 <1 801250(1-8) 801251(1-63) 1 B& 4-26-12 801252 201251 (1-8910) xes 11:15 72 42 MO < 1 20124511-3) 4-19-12 4-27-12 3010A 12 xes BE **2**1 801264 (1-7) 2012654-61 8012661192-11) 8012674-81 3010A yc5 4-30-12 BL **7** i くて 201276 NO NO < 1 8012 75 801277 801278 3010A xes 52 71 801301 80 12 9818-61) **<**† 801299 (5.3) 80 12300 (\$2-5) NG NO 801303(1-19) 80 1304 (1-10) くて 80 1307 <`\ 3010A yes 801308

フリ

201309 801252 -11



Sample Integrity & Analysis Discrepancy Form

. C	lient: <u>E&</u>	Lab # <u>80/2/6</u>
Dá	ate Delivered. P4/21/12 Time: do:30 By: □Mail Ø	Field Service
1.	. Was a Chain of Custody received and signed?	dyes ONO ONA
2.	Does Customer require an acknowledgement of the COC?	□Yes □No địN/A
<i>3</i> .	Are there any special requirements or notes on the COC?	□Yes □No ☐N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No □N/A
5 .	Were all requested analyses understood and acceptable?	ÆYes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)?/ <u>' (°C</u>	da¥es □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)?	ØYes □No □N/A
8 .	Were sample custody seals intact?	□Yes □No ŒN/A
9.	Does the number of samples received agree with COC?	Yes ONO ON/A
10.	Did sample labels correspond with the client ID's?	✓ ∠QYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ÆN/A
12.	Were samples pH checked? pH = <u>SEE</u> C. C. C.	ÆYes □No □N/A
13,	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Yes DNo DNA
14.	Have Project due dates been checked and accepted? Tum Around Time (TAT): □ RUSH ☑ Std	Æ(Yes □No □N/A
5 .	Sample Matrix: DLiquid Drinking Water Ground V	
6 .	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda.

Analytical Bench Log Book

WDR pH Results

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-/00	4-3-12	14:47	4-3-12	1451	#1	4-3-12	01:00	-566	C. Kriegh	7.2
tes:					· · · · · · · · · · · · · · · · · · ·	·	<u> </u>	<u> </u>		
SC-700B	4.312	14:29	4312	14:33	#1	4.3.12	01:00	-56.6	C.Kright	7.0
tes:						·		<u></u>		
SC-701	4.3-12	14:14	4-312	14:19	# [4-3-12	01:00	-56.6	C-Kught	7.6
tes:						·	· · · · · · · · · · · · · · · · · · ·	·		
SC- 700B	4-10-12	12:50	4-10-12	12:55	#1	4-10-12	01:00	-56.4	CHRIS LEUR	7.0
tes:										i- , , , , , , , , , , , , , , , , , , ,
SC 700B.a	4-16-12	86:0¢	4-16-12	6:21	# 1	4/1/12	01:00	-56.2	Chriskugut	7.1
tes:		i d	18420-1	1		0				
50-7008 b	4-20-12	13:00	13+2HA)		**/	4/16/12	01:00	-562	Stor	7./
tes.	i i	<u>, -</u> i		<u> </u>			<u> </u>			1

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

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 25, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-359 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 801339

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-359 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 May 1, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The total and total dissolved metals 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 the discrepancy between the Total Dissolved Chromium (1.2 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample SC-700B-WDR-359, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were 1.1 and 1.0 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 1.0 ug/L. The original results were 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.

f. – Mona Nassimi

Manager, Analytical Services

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Michael Ngo

Quality Assurance/Quality Control Officer

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters
Project Name: PG&E Topock Project
Project No.: 424973.01.DM

awn Duffy
Laboratory No.: 801339
o (2) Groundwaters
Date: June 25, 2012

Collected: May 1, 2012 Received: May 1, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
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	George Wahba / Maksim Gorbunov

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

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

Laboratory No.: 801339 Date Received: May 1, 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
801339-001	SC-700B-WDR-359	E120.1	NONE	5/1/2012	15:09	EC	7460	umhos/cm	2.00
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	Aluminum	ND		50.0
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	BORON	1060	ug/L ug/L	200
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	Iron	ND	ug/L	20.0
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	Zinc	ND	ug/L ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Antimony	ND	ug/L	5.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Arsenic	ND	ug/L	1.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Barium	12.9	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Chromium	1.2	ug/L	1.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Copper	ND	ug/L	5.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Lead	ND	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Manganese	4.4	ug/L	1.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Molybdenum	21.6	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Nickel	ND	ug/L	10.0
801339-001	SC-700B-WDR-359	E218.6	LABFLT	5/1/2012	15:09	Chromium, hexavalent	ND	ug/L	0.20
801339-001	SC-700B-WDR-359	E300	NONE	5/1/2012	15:09	Fluoride	2.10	mg/L	0.500
801339-001	SC-700B-WDR-359	E300	NONE	5/1/2012	15:09	Nitrate as N	2.84	mg/L	1.00
801339-001	SC-700B-WDR-359	E300	NONE	5/1/2012	15:09	Sulfate	534	mg/L	25.0
801339-001	SC-700B-WDR-359	SM2130B	NONE	5/1/2012	15:09	Turbidity	ND	NTU	0.100
801339-001	SC-700B-WDR-359	SM2540C	NONE	5/1/2012	15:09	Total Dissolved Solids	4570	mg/L	250
801339-001	SC-700B-WDR-359	SM4500NH3D	NONE	5/1/2012	15:09	Ammonia-N	ND	mg/L	0.500
801339-001	SC-700B-WDR-359	SM4500NO2B	NONE	5/1/2012	15:09	Nitrite as N	ND	mg/L	0.0050

005

		Analysis	Extraction	Sample Date	Sample Time	Parameter	Result	Units	RL
Lab Sample ID	Field ID	Method	Method	Sample Date	-				2.00
801339-002	SC-100B-WDR-359	E120.1	NONE	5/1/2012	15:01	EC	7770	umhos/cm	50.0
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	Aluminum	ND	ug/L	200
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	BORON	1070	ug/L	20.0
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	Iron	ND	ug/L	20.0
801339-002	SC-100B-WDR-359	E200.7	LABFLT	5/1/2012	15:01	Iron	ND	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	Zinc	ND	ug/L	5.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Antimony	ND 5.0	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Arsenic	5.0	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Barium	25.2	ug/L ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Chromium	798 ND		5.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Copper	ND ND	ug/L ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Lead	5.5	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Manganese	5.5 5.7	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	LABFLT	5/1/2012	15:01	Manganese	20.4	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Molybdenum Nickel	ND	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Chromium, hexavalent	777	ug/L	10.0
801339-002	SC-100B-WDR-359	E218.6	LABFLT	5/1/2012	15:01	Fluoride	2.61	mg/L	0.500
801339-002	SC-100B-WDR-359	E300	NONE	5/1/2012	15:01	Nitrate as N	3.04	mg/L	1.00
801339-002	SC-100B-WDR-359	E300	NONE	5/1/2012	15:01 15:01	Sulfate	566	mg/L	50.0
801339-002	SC-100B-WDR-359	E300	NONE	5/1/2012	15:01	Turbidity	ND	NTU	0.100
801339-002	SC-100B-WDR-359	SM2130B	NONE	5/1/2012	15:01	Alkalinity	156	mg/L	5.00
801339-002	SC-100B-WDR-359	SM2320B	NONE	5/1/2012	15:01	Bicarbonate	156	mg/L	5.00
801339-002	SC-100B-WDR-359	SM2320B	NONE	5/1/2012	15:01	Carbonate	ND	mg/L	5.00
801339-002	SC-100B-WDR-359	SM2320B	NONE	5/1/2012	15:01	Total Dissolved Solids	4750	mg/L	250
801339-002	SC-100B-WDR-359	SM2540C	NONE	5/1/2012	15:01	Ammonia-N	ND	mg/L	0.500
801339-002	SC-100B-WDR-359	SM4500NH3D	NONE	5/1/2012	15:01	Nitrite as N	ND	mg/L	0.0050
801339-002	SC-100B-WDR-359	SM4500NO2B	NONE	5/1/2012	15:01	Total Phosphorous-P	ND	mg/L	0.0200
801339-002	SC-100B-WDR-359	SM4500-PB_E	NONE	5/1/2012 5/4/2012	15:01	Soluble Silica	23.1	mg/L	1.00
801339-002	SC-100B-WDR-359	SM4500SI	LABFLT	5/1/2012	15:01	Total Organic Carbon	1.23	mg/L	0.300
801339-002	SC-100B-WDR-359	SM5310C	NONE	5/1/2012	15.01	Total Organic Carbon	1.29	···ə· –	

ND: Non Detected (below reporting limit)

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

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.

mg/L: Milligrams per liter.

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Page 1 of 33

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

Printed 6/25/2012

Laboratory No. 801339

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 5/1/2012 8:40:00 PM

		•						
Field ID				Lab ID	Co	llected	Matr	ix
SC-700B-WDR-359 SC-100B-WDR-359				801339-001 801339-002		/2012 15:09 /2012 15:01	Wat Wat	
Anions By I.C EPA	300.0		Batcl	n 05AN12B				
Parameter	12	Unit	Ana	alyzed	DF	MDL	RL	Result
801339-001 Fluoride		mg/L	05/02	2/2012 10:38	5.00	0.155	0.500	2.10
Nitrate as Nitr	rogen	mg/L	05/02	2/2012 10:38	5.00	0.135	1.00	2.84
Sulfate		mg/L	05/02	2/2012 12:40	50.0	5.70	25.0	534.
801339-002 Fluoride		mg/L	05/02	2/2012 10:49	5.00	0.155	0.500	2.61
Nitrate as Nitr	rogen	mg/L	05/02	2/2012 10:49	5.00	0.135	1.00	3.04
Sulfate		mg/L	05/02	2/2012 11:24	100	11.4	50.0	566.
Method Blank							W. 1	
Parameter	Unit	DF	Result					
Fluoride	mg/L	1.00	ND					
Sulfate	mg/L	1.00	ND					
Nitrate as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID = 8	301339-002
Parameter	Unit	DF	Result	Expected	R	RPD	Accepta	nce Range
Fluoride	mg/L	5.00	2.85	2.61		8.65	0 - 20	. 3
Sulfate	mg/L	100	556.	566		1.82	0 - 20	
Nitrate as Nitrogen	mg/L	5.00	3.06	3.04		0.590	0 - 20	
Lab Control Sample	Э							
Parameter	Unit	DF	Result	Expected	R	ecovery	Acceptar	nce Range
Fluoride	mg/L	1.00	4.15	4.00		104.	90 - 110	3 ·
Sulfate	mg/L	1.00	20.0	20.0		99.9	90 - 110	
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00		100.	90 - 110	

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Client: E2 Consulting Engineers, Inc.			Project Name: Project Number:	PG&E Topock Pro 424973.01.DM	pject	Page 2 of 33 Printed 6/25/2012		
Matrix Spike						Lab ID = 801339-002		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range		
Fluoride	mg/L	5.00	23.4	22.6(20.0)	104.	85 - 115		
Sulfate	mg/L	100	1570	1570(1000)	101.	85 - 115		
Nitrate as Nitrogen	mg/L	5.00	23.6	23.0(20.0)	103.	85 - 115		
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range		
Fluoride	mg/L	1.00	4.15	4.00	104.	90 - 110		
Sulfate	mg/L	1.00	20.0	20.0	100.	90 - 110		
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.0	90 - 110		
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range		
Fluoride	mg/L	1.00	3.16	3.00	105.	90 - 110		
Sulfate	mg/L	1.00	15.2	15.0	102.	90 - 110		
Nitrate as Nitrogen	mg/L	1.00	3.03	3.00	101.	90 - 110		
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range		
Nitrate as Nitrogen	mg/L	1.00	3.03	3.00	101.	90 - 110		



Client: E2 Consulting Engineers, Inc.

Nitrite SM 4500-NO2 B

Project Name: PG&E Topock Project

Batch 05NO212C

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Project Number: 424973.01.DM

Printed 6/25/2012

Parameter		Unit	Ana	llyzed	DF MDL		RL	Result
801339-001 Nitrite as Nitrogen		mg/L	05/02/2012 11:33		1.00	0.000360	0.0050	ND
801339-002 Nitrite as Nitrogen mg		mg/L	05/02/2012 11:34		1.00	0.000360	0.0050	ND
Method Blank								
Parameter Nitrite as Nitrogen Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID = 8	301339-001
Parameter Nitrite as Nitrogen Lab Control Sample	Unit mg/L	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Acceptar 0 - 20	nce Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Page 4 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Alkalinity by SM 2320B			Batch	05ALK12A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-002 Alkalinity as Ca	CO3	mg/L	05/01/2012		1.00	1.68	5.00	156
Bicarbonate (Calculated)		mg/L	05/01	/2012	1.00	1.68	5.00	156
Carbonate (Calo	Carbonate (Calculated)		05/01	/2012	1.00	1.68	5.00	ND
Method Blank								
Parameter	Unit	DF	Result					
Alkalinity as CaCO3	mg/L	1.00	ND					
Duplicate							Lab ID =	801298-003
Parameter	Unit	DF	Result Expected RPD		Acceptance Range			
Alkalinity as CaCO3	mg/L	1.00	148	149		0.673	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	I	Recovery	Acceptance Range	
Alkalinity as CaCO3	mg/L	1.00	98.0	100.		98.0	90 - 110)
Lab Control Sample I	Duplicate							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	98.0	100.		98.0	90 - 110)
Matrix Spike							Lab ID =	801339-002
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ince Range
Alkalinity as CaCO3	mg/L	1.00	248	256(100.)		92.0	75 - 125	
Matrix Spike Duplicat	e						Lab ID =	801339-002
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ince Range
Alkalinity as CaCO3	mg/L	1.00	248	256(100.)		92.0	75 - 125	5



Client: E2 Consulting Engineers, Inc.

Specific Conductivity - EPA 120.1

Parameter

Specific Conductivity

Project Name: PG&E Topock Project

Batch 05EC12A

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Project Number: 424973.01.DM

Printed 6/25/2012

Acceptance Range

90 - 110

Parameter 801339-001 Specific Conductivity 801339-002 Specific Conductivity		Unit		Analyzed 05/04/2012		MDL	RL	Result 7460
		umhos/	'cm 0			0.0950	2.00	
		umhos/	cm 0	5/04/2012	1.00	0.0950	2.00	7770
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Resu ND	lt				
Duplicate							Lab ID =	801339-002
Parameter Specific Conductivity	Unit umhos	DF 1.00	Resu 7780		F	RPD 0.129	Accepta 0 - 10	ance Range

Result

978

Expected

998

Recovery

98.0

DF

1.00

Unit

umhos



Unit

ug/L

Unit

Unit

Unit

ug/L

ug/L

ug/L

DF

1.00

DF

1.00

DF

1.00

DF

1.00

Report Continued

Client: E2 Consulting Engineers, Inc.

Chrome VI by EPA 218.6

Parameter

Parameter

Parameter

Parameter

Chromium, Hexavalent

Matrix Spike

Chromium, Hexavalent

Matrix Spike

Chromium, Hexavalent

Matrix Spike

Chromium, Hexavalent

Project Name: PG&E Topock Project

Batch 05CrH12C

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Project Number: 424973.01.DM

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Acceptance Range

Lab ID = 801252-004

Acceptance Range

Lab ID = 801252-005

Acceptance Range

Lab ID = 801252-007

Acceptance Range

90 - 110

90 - 110

90 - 110

90 - 110

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-001 Chromium, Hex	avalent	ug/L	05/02	2/2012 15:56	1.00	0.0260	0.20	ND
801339-002 Chromium, Hex	avalent	ug/L	05/02/2012 16:07		50.0	1.30	10.0	777.
Method Blank								
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND					
Duplicate							Lab ID =	801252-002
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L n Verification	DF 1.00	Result 2.90	Expected 2.91	i	RPD 0.417	Accepta 0 - 20	nce Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.196	Expected 0.200	i	Recovery 98.2	Accepta 70 - 130	ance Range)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.08	Expected 5.00	I	Recovery 102.	90 - 110	ance Range) 801252-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.12	Expected/Adde 7.04(5.00)	ed I	Recovery 102.	90 - 110	ance Range) 801252-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.86	Expected/Adde 7.91(5.00)	ed I	Recovery 99.0	90 - 110	ance Range) 801252-003

Result

8.13

Result

8.12

Result

9.01

Result

15.6

Expected/Added

Expected/Added

Expected/Added

Expected/Added

8.23(5.00)

8.20(5.00)

8.75(5.00)

15.3(10.0)

Recovery

Recovery

Recovery

Recovery

102.

105.

98.3

98.1



Client: E2 Consulting Engineers, Inc.			roject Name: roject Numbe	PG&E Topock Pror: 424973.01.DM	Page 7 of 33 Printed 6/25/2012	
Matrix Spike						Lab ID = 801252-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.04	Expected/Added 8.15(5.00)	Recovery 97.8	Acceptance Range 90 - 110 Lab ID = 801252-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.02	Expected/Added 1.00(1.00)	Recovery 102.	Acceptance Range 90 - 110 Lab ID = 801252-011
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 17.8	Expected/Added 18.8(10.0)	Recovery 90.2	Acceptance Range 90 - 110 Lab ID = 801320-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 10.2	Expected/Added 9.77(5.00)	Recovery 110.	Acceptance Range 90 - 110 Lab ID = 801320-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 17.9	Expected/Added 17.2(10.0)	Recovery 107.	Acceptance Range 90 - 110 Lab ID = 801321-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.07	Expected/Added 1.00(1.00)	Recovery 107.	Acceptance Range 90 - 110 Lab ID = 801338-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 16.8	Expected/Added 16.9(10.0)	Recovery 98.9	Acceptance Range 90 - 110 Lab ID = 801339-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.12	Expected/Added 1.13(1.00)	Recovery 99.2	Acceptance Range 90 - 110 Lab ID = 801339-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 50.0	Result 1790	Expected/Added 1780(1000)	Recovery 102.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.06	Expected 5.00	Recovery 101.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	Recovery 102.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.3	Expected 10.0	Recovery 103.	Acceptance Range 95 - 105

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Metals by EPA 200.7, Total			Batch	052412A				
Parameter		Unit	Ana	llyzed	DF	MDL	RL	Result
801339-001 Aluminum		ug/L	05/24	1/2012 13:38	1.00	2.83	50.0	ND
Boron		ug/L	05/24	1/2012 14:26	2.00	3.00	200.	1060
Iron		ug/L	05/24	1/2012 13:38	1.00	1.34	20.0	ND
Zinc		ug/L	05/24	1/2012 13:38	1.00	3.89	10.0	ND
801339-002 Aluminum		ug/L	05/24	1/2012 14:04	1.00	2.83	50.0	ND
Boron		ug/L	05/24	1/2012 14:04	1.00	1.50	200.	1070
Iron		ug/L	05/24	1/2012 14:04	1.00	1.34	20.0	ND
Zinc		ug/L	05/24	1/2012 14:04	1.00	3.89	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 =	801339-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce 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	2.00	1050	1060		0.948	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Aluminum	ug/L	1.00	2110	2000		105.	85 - 115	i i
iron	ug/L	1.00	2140	2000		107.	85 - 115	j
Zinc	ug/L	1.00	1930	2000		96.4	85 - 115	5
Boron	ug/L	1.00	1980	2000		98.8	85 - 115	j
Matrix Spike							Lab ID =	801339-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	1630	2000(2000)		81.3	75 - 125	;
Iron	ug/L	1.00	2210	2000(2000)		111.	75 - 125	;
Zinc	ug/L	1.00	2480	2000(2000)		124.	75 - 125	;
Boron	ug/L	2.00	5200	5060(4000)		104.	75 - 125	;



Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 13 of 33

Project Number: 424973.01.DM Printed 6/25/2012

Metals by EPA 200.8, To	otal		Batch	060412B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-001 Antimony		ug/L	06/05	5/2012 08:45	5.00	0.420	5.0	ND
Barium		ug/L	06/05	5/2012 08:45	5.00	0.205	10.0	12.9
Lead		ug/L	06/05	5/2012 08:45	5.00	0.265	10.0	ND
Manganese		ug/L	06/05	5/2012 08:45	5.00	0.270	1.0	4.4
Molybdenum		ug/L	06/05	5/2012 08:45	5.00	0.150	10.0	21.6
801339-002 Antimony		ug/L	06/05	5/2012 09:00	5.00	0.420	5.0	ND
Barium		ug/L	06/05	5/2012 09:00	5.00	0.205	10.0	25.2
Lead		ug/L	06/05	5/2012 09:00	5.00	0.265	10.0	ND
Manganese		ug/L	06/05	5/2012 09:00	5.00	0.270	1.0	5.5
Molybdenum		ug/L	06/05	5/2012 09:00	5.00	0.150	10.0	20.4
Method Blank								
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Antimony	ug/L	1.00	ND					
Lead	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Molybdenum	ug/L	1.00	ND					
Duplicate							Lab ID =	801373-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Barium	ug/L	5.00	15.7	17.0		8.14	0 - 20	
Antimony	ug/L	5.00	ND	0.00		0	0 - 20	
Lead	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	80.4	74.0		8.28	0 - 20	
Molybdenum	ug/L	5.00	35.8	34.7		3.01	0 - 20	
Low Level Calibration	n Verification	l						
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Barium	ug/L	1.00	0.869	1.00		86.9	70 - 130)
Antimony	ug/L	1.00	0.908	1.00		90.8	70 - 130	
Lead	ug/L	1.00	0.942	1.00		94.2	70 - 130	
Manganese	ug/L	1.00	0.194	0.200		96.8	70 - 130	
Molybdenum	ug/L	1.00	1.08	1.00		108.	70 - 130)

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Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Proj Project Number: 424973.01.DM			Page 14 of 33 Printed 6/25/2012
Lab Control Sample						
Parameter Barium	Unit ug/L	DF 5.00	Result 99.6	Expected 100.	Recovery 99.6	Acceptance Range 85 - 115
Antimony	ug/L	5.00	100.	100.	100.	85 - 115
Lead	ug/L	5.00	98.2	100.	98.2	85 - 115
Manganese	ug/L	5.00	97.1	100.	97.1	85 - 115
Molybdenum	ug/L	5.00	93.9	100.	93.9	85 - 115
Matrix Spike	_					Lab ID = 801373-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	105.	117(100.)	88.2	75 - 125
Antimony	ug/L	5.00	87.9	100.(100.)	87.9	75 - 125
Lead	ug/L	5.00	84.2	100.(100.)	84.2	75 - 125
Manganese	ug/L	5.00	169.	174(100.)	94.6	75 - 125
Molybdenum	ug/L	5.00	124.	135.(100.)	89.1	75 - 125
Matrix Spike Duplicate						Lab ID = 801373-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	119.	117(100.)	102.	75 - 125
Antimony	ug/L	5.00	99.8	100.(100.)	99.8	75 - 125
Lead	ug/L	5.00	95.5	100.(100.)	95.5	75 - 125
Manganese	ug/L	5.00	179.	174(100.)	105.	75 - 125
Molybdenum	ug/L	5.00	134.	135.(100.)	99.6	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.61	10.0	96.1	90 - 110
Antimony	ug/L	1.00	9.26	10.0	92.6	90 - 110
Lead	ug/L	1.00	9.92	10.0	99.2	90 - 110
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110
Molybdenum	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	9.86	10.0	98.6	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.70	10.0	97.0	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.32	10.0	93.2	90 - 110

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Client: E2 Consulting Eng	Client: E2 Consulting Engineers, Inc.		Project Name: PG&E Topock Project Project Number: 424973.01.DM			Page 17 of 33 Printed 6/25/2012		
Interference Check Sta	andard A							
Parameter Molybdenum Interference Check Sta	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Parameter Molybdenum Interference Check Sta	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Parameter Barium Interference Check Sta	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Parameter Barium Antimony Interference Check Sta	Unit ug/L ug/L andard AB	DF 1.00 1.00	Result ND ND	Expected 0.00 0.00	Recovery	Acceptance Range		
Parameter Antimony Lead Interference Check Sta	Unit ug/L ug/L	DF 1.00 1.00	Result ND ND	Expected 0.00 0.00	Recovery	Acceptance Range		
Parameter Lead Manganese	Unit ug/L ug/L	DF 1.00 1.00	Result ND 9.86	Expected 0.00 10.0	Recovery 98.6	Acceptance Range		
Interference Check Sta Parameter Manganese Interference Check Sta	Unit ug/L	DF 1.00	Result 9.78	Expected 10.0	Recovery 97.8	Acceptance Range 80 - 120		
Parameter Molybdenum Interference Check Sta	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Parameter Molybdenum	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range		
Serial Dilution						Lab ID = 801339-002		
Parameter Barium Molybdenum	Unit ug/L ug/L	DF 25.0 25.0	Result 24.7 20.3	Expected 25.2 20.4	RPD 2.08 0.393	Acceptance Range 0 - 10 0 - 10		



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Total	Batch (060512B

Parameter	in the first state of the	Unit	Ana	lyzed I	OF	MDL	RL	Result
801339-001 Arsenic		ug/L	06/06	5/2012 17:50 5	.00	0.265	1.0	ND
Chromium		ug/L	06/06	5/2012 17:50 5	.00	0.195	1.0	1.2
801339-002 Arsenic		ug/L	06/06	5/2012 18:04 5	.00	0.265	1.0	5.0
Chromium		ug/L	06/06	5/2012 18:04 5	.00	0.195	1.0	798.
Method Blank								
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Duplicate							Lab ID =	801373-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Arsenic	ug/L	5.00	ND	0.00		0	0 - 20	
Chromium	ug/L	5.00	563.	528		6.38	0 - 20	
Low Level Calibration	Verification	1						
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Arsenic	ug/L	1.00	0.228	0.200		114.	70 - 130	C
Chromium	ug/L	1.00	0.159	0.200		79.4	70 - 130	0
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Arsenic	ug/L	5.00	94.8	100.		94.8	85 - 11	5
Chromium	ug/L	5.00	97.4	100.		97.4	85 - 11	5
Matrix Spike							Lab ID =	801373-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range
Arsenic	ug/L	5.00	89.4	100.(100.)		89.4	75 - 12	5
Chromium	ug/L	5.00	946.	903(375)		112.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Arsenic	ug/L	1.00	10.3	10.0		103.	90 - 11	0
Chromium	ug/L	1.00	10.2	10.0		102.	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Arsenic	ug/L	1.00	9.72	10.0		97.2	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Arsenic	ug/L	1.00	9.74	10.0		97.4	90 - 11	0

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



ug/L

25.0

798.

798

0.0125

0 - 10

Chromium

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 20 of 33 Project Number: 424973.01.DM Printed 6/25/2012 Interference Check Standard A Parameter Unit DF Result Expected Recovery Acceptance Range 1.00 ND 0.00 Arsenic ug/L Interference Check Standard A Parameter Unit DF Result Expected Recovery Acceptance Range Arsenic 1.00 ND 0.00 ug/L Interference Check Standard A Parameter Unit DF Result Expected Recovery Acceptance Range ND 0.00 Chromium ug/L 1.00 Interference Check Standard A Parameter Unit DF Result Expected Recovery Acceptance Range Chromium 1.00 ND 0.00 ug/L Interference Check Standard AB Parameter Unit DF Result Expected Acceptance Range Recovery Arsenic ug/L 1.00 9.72 10.0 97.2 80 - 120 Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range 9.86 10.0 98.6 80 - 120 Arsenic ua/L 1.00 Interference Check Standard AB DF Result Parameter Unit Expected Recovery Acceptance Range Chromium ug/L 1.00 9.94 10.0 99.4 80 - 120 Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range 1.00 9.71 10.0 97.1 80 - 120 Chromium ug/L Lab ID = 801339-002 Serial Dilution Parameter Unit DF Result Expected **RPD** Acceptance Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Metals by EPA 200.8, Total	al		Batch	062012A				
Parameter	*	Unit	Ana	lyzed	DF	MDL	RL	Result
801339-001 Copper		ug/L	06/22	/2012 21:46	5.00	0.235	5.0	ND
Nickel		ug/L	06/22	/2012 21:46	5.00	0.355	10.0	ND
801339-002 Copper		ug/L	06/22	/2012 21:53	5.00	0.235	5.0	ND
Nickel		ug/L	06/22	/2012 21:53	5.00	0.355	10.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Nickel	ug/L	1.00	ND					
Copper	ug/L	1.00	ND					
Duplicate							Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Nickel	ug/L	5.00	ND	0.00		0	0 - 20	
Copper	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration \	/erification	1						
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Nickel	ug/L	1.00	1.00	1.00		100.	70 - 130)
Copper	ug/L	1.00	0.947	1.00		94.7	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Nickel	ug/L	5.00	110.	100.		110.	85 - 11	5
Copper	ug/L	5.00	100.	100.		100.	85 - 115	5
Matrix Spike							Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Nickel	ug/L	5.00	95.2	100.(100.)		95.2	75 - 12	5
Copper	ug/L	5.00	93.9	100.(100.)		93.9	75 - 125	5
Matrix Spike Duplicate							Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Nickel	ug/L	5.00	95.7	100.(100.)		95.7	75 - 12	5
Copper	ug/L	5.00	94.3	100.(100.)		94.3	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Nickel	ug/L	1.00	10.2	10.0		102.	90 - 110	
Copper	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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Reactive Silica by SM4500-Si D

Batch 05Si12A

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-002 Silica		mg/L	05/07	/2012 :	25.0	0.532	1.00	23.1
Method Blank								
Parameter Silica	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	801391-003
Parameter Silica	Unit mg/L	DF 1.00	Result ND	Expected 0.00	R	RPD 0	Accepta 0 - 20	ance Range
Lab Control Sample								
Parameter Silica Matrix Spike	Unit mg/L	DF 1.00	Result 0.202	Expected 0.220	R	Recovery 91.7	90 - 110	ance Range) 801391-003
Parameter Silica MRCCS - Secondary	Unit mg/L	DF 1.00	Result 0.439	Expected/Add 0.400(0.400)	ed R	Recovery 110.	Accepta 75 - 128	ance Range
Parameter Silica MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.100	Expected 0.110	R	Recovery 90.9	Accepta 90 - 110	ance Range)
Parameter Silica MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.414	Expected 0.400	R	Recovery 103.	Accepta 90 - 110	ance Range)
Parameter Silica	Unit mg/L	DF 1.00	Result 0.414	Expected 0.400	F	Recovery 103.	Accepta 90 - 110	ance Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Total Dissolved Solids by SM 2540 C

Batch 05TDS12D

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-001 Total Dissolved	Solids	mg/L	05/04	1/2012	1.00	0.400	250.	4570
801339-002 Total Dissolved	Solids	mg/L	05/04	/2012	1.00	0.400	250.	4750
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	801373-003
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	4640	4420		4.86	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	490.	500.		98.0	90 - 110)



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Total Organic Carbon (T/DOC) SM 5310 C

Batch 05TOC12B

Parameter		Unit	Anal	yzed 1	DF	MDL	RL	Result
801339-002 Total Organic Car	rbon	mg/L	05/17	/2012 19:34 1	.00 0	0.0103	0.300	1.23
Method Blank								
Parameter Total Organic Carbon Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	801417-001
Parameter Total Organic Carbon Lab Control Sample	Unit mg/L	DF 1.00	Result 1.19	Expected 1.18	RPI 0.	O 844	Accepta 0 - 20	nce Range
Parameter Total Organic Carbon Matrix Spike	Unit mg/L	DF 1.00	Result 19.5	Expected 20.0		covery 7.3	90 - 110	ince Range) 801417-002
Parameter Total Organic Carbon MRCCS - Secondary	Unit mg/L	DF 1.00	Result 10.3	Expected/Adde 10.7(10.0)		covery 5.9	Accepta 75 - 125	ince Range
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 9.52	Expected 10.0		covery 5.2	Accepta 90 - 110	ince Range)
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 9.78	Expected 10.0		covery 7.8	Accepta 90 - 110	nce Range)
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 9.64	Expected 10.0		covery 6.4	Accepta 90 - 110	ance Range)
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 9.59	Expected 10.0		covery 5.9	Accepta 90 - 110	ance Range)



Client: E2 Consulting Engineers, Inc.

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Project Number: 424973.01.DM

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Total Phosphate, SM 4500-PB,E

Batch 05TP12A

· o.u. · moop, o.uo.	,_							
Parameter	•	Unit	Ana	lyzed D	F	MDL	RL	Result
801339-002 Phosphate, Tota	l As P	mg/L	05/03	/2012 1.	0.0	0530	0.0200	ND
Method Blank								
Parameter	Unit	DF	Result					
Phosphate, Total As P	mg/L	1.00	ND					
Duplicate							Lab ID = 8	01339-002
Parameter	Unit	DF	Result	Expected	RPD		Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	ND	0.00	0		0 - 20	_
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recov	ery	Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	0.106	0.100	106.		90 - 110	J
Matrix Spike							Lab ID = 8	01339-002
Parameter	Unit	DF	Result	Expected/Added	l Recov	ery	Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	0.0530	0.0650(0.0650)	81.5		75 - 125	J
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Recov	ery	Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	0.0580	0.0600	96.7	•	90 - 110	3
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recov	егу	Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	0.0624	0.0650	96.0	•	90 - 110	J



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Ammonia Nitrogen by SN	145UU-NI	างบ	Batch	n 05NH312A				
Parameter		Unit	Ana	alyzed I	OF	MDL	RL	Result
801339-001 Ammonia as N		mg/L	05/07	7/2012 1	.00	0.00120	0.500	ND
801339-002 Ammonia as N		mg/L	05/07	7/2012 1	.00	0.00120	0.500	ND
Method Blank							7007100.0	
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Duplicate							Lab ID =	301339-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Ammonia as N	mg/L	1.00	ND	0.00		0	0 - 20	J
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	9.63	10.0		96.3	90 - 110	J
Lab Control Sample Du	plicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	9.44	10.0		94.4	90 - 110	_
Matrix Spike							Lab ID = 8	301339-001
Parameter	Unit	DF	Result	Expected/Adde	d R	Recovery	Acceptai	nce Range
Ammonia as N	mg/L	1.00	6.28	6.00(6.00)		105.	75 - 125	J
Matrix Spike Duplicate							Lab ID = 8	801339-001
Parameter	Unit	DF	Result	Expected/Adde	d R	ecovery	Acceptar	nce Range
Ammonia as N	mg/L	1.00	6.62	6.00(6.00)		110.	75 - 125	J
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Acceptar	nce Range
Ammonia as N	mg/L	1.00	6.28	6.00		105.	90 - 110	J
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Acceptar	ice Range
Ammonia as N	mg/L	1.00	6.05	6.00		101.	90 - 110	J -



Client: E2 Consulting Engineers, Inc.

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Metals by EPA 200.8, Dissolved

Batch 061212A

Parameter		Unit	Anal	yzed [)F	MDL	RL	Result
801339-002 Manganese		ug/L	06/12	/2012 23:06 5.	.00 0).270	1.0	5.7
Method Blank								
Parameter Manganese Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	800964-009
Parameter Manganese Low Level Calibration \	Unit ug/L	DF 5.00	Result ND	Expected 0.00	RPI 0	D	Accepta 0 - 20	ance Range
Parameter Manganese Lab Control Sample	Unit ug/L	DF . 1.00	Result 0.225	Expected 0.200		covery 13.	Accepta 70 - 13	ance Range 0
Parameter Manganese Matrix Spike	Unit ug/L	DF 5.00	Result 98.1	Expected 100.		covery 8.1	85 - 11	ance Range 5 : 800964-009
Parameter Manganese Matrix Spike Duplicate	Unit ug/L	DF 5.00	Result 102.	Expected/Adde 100.(100.)		covery 02.	75 - 12	ance Range 5 : 800964-009
Parameter Manganese MRCCS - Secondary	Unit ug/L	DF 5.00	Result 102.	Expected/Adde 100.(100.)		covery 02.	Accepta 75 - 12	ance Range 5
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.74	Expected 10.0		covery 7.4	Accept 90 - 11	ance Range 0
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.60	Expected 10.0		covery 6.0	Accept 90 - 11	ance Range 0
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.67	Expected 10.0		covery 6.7	Accept 90 - 11	ance Range 0
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.75	Expected 10.0		covery 7.5	Accept 90 - 11	ance Range 0



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Metals by 200.7, Dissolved

Batch 052412A

Parameter		Unit	Ana	lyzed [DF MDL	RL	Result
801339-002 Iron	·	ug/L	05/24	/2012 14:50 1	00 1.34	20.0	ND
Method Blank							
Parameter Iron	Unit ug/L	DF 1.00	Result ND			1 -h ID - (204272 002
Duplicate							301373-003
Parameter Iron Lab Control Sample	Unit ug/L	DF 1.00	Result 21.9	Expected 26.3	RPD 18.2	Acceptai 0 - 20	nce Range
Parameter Iron Matrix Spike	Unit ug/L	DF 1.00	Result 2140	Expected 2000	Recovery 107.	85 - 115	nce Range 301373-003
Parameter Iron MRCCS - Secondary	Unit ug/L	DF 1.00	Result 2480	Expected/Adde 2030(2000)	d Recovery 123.	Acceptai 75 - 125	nce Range
Parameter Iron MRCVS - Primary	Unit ug/L	DF 1.00	Result 5090	Expected 5000	Recovery 102.	Acceptai 90 - 110	nce Range
Parameter Iron MRCVS - Primary	Unit ug/L	DF 1.00	Result 5420	Expected 5000	Recovery 108.	Acceptai 90 - 110	nce Range
Parameter Iron MRCVS - Primary	Unit ug/L	DF 1.00	Result 4570	Expected 5000	Recovery 91.4	Acceptar 90 - 110	nce Range
Parameter Iron Interference Check St	Unit ug/L tandard A	DF 1.00	Result 5050	Expected 5000	Recovery 101.	Acceptar 90 - 110	nce Range
Parameter Iron Interference Check St	Unit ug/L tandard A	DF 1.00	Result 2170	Expected 2000	Recovery 108.	Acceptar 80 - 120	nce Range
Parameter Iron	Unit ug/L	DF 1.00	Result 1910	Expected 2000	Recovery 95.7	Acceptar 80 - 120	nce Range



Client: E2 Consulting l	Engineers, In		roject Name: roject Numbe	PG&E Topo er: 424973.01.I		ect	Printed 6	age 32 of 33 /25/2012
Interference Check	Standard AB							
Parameter Iron	Unit ug/L	DF 1.00	Result 2180	Expected 2000	!	Recovery 109.	Accepta 80 - 120	ince Range)
Interference Check	Standard AB							
Parameter Iron	Unit ug/L	DF 1.00	Result 1950	Expected 2000	i	Recovery 97.4	Accepta 80 - 120	ince Range
Turbidity by SM 2130 I	3 Magazina		Batch	05TUC12B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-001 Turbidity		NTU	05/02	/2012	1.00	0.0140	0.100	ND
Method Blank						*****		
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	801339-001
Parameter Turbidity	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range
Lab Control Sample	:							
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.80	Expected 8.00	F	Recovery 97.5	Accepta 90 - 110	nce Range
Lab Control Sample	•							
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.85	Expected 8.00	F	Recovery 98.1	Accepta 90 - 110	nce Range



Client: E2 Consulting Engineers, Inc.

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Turbidity by SM 2130 B

Datell Colocize	Batch	05TUC12C
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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801339-002 Turbidity		NTU	05/02	/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity Duplicate	Unit NTU	DF 1.00	Result ND				Lab ID =	801339-002
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range
Parameter Turbidity Lab Control Sample [Unit NTU Duplicate	DF 1.00	Result 7.70	Expected 8.00	F	Recovery 96.2	Accepta 90 - 110	nce Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.59	Expected 8.00	F	Recovery 94.9	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12D Date Analyzed: 5/9/12

Laboratory Number	Sample volume, mi	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL,	Reported Value, ppm	DF
Blank	100	67.7812	67.7816	67.7815	0.0001	No	0.0003	3.0	25.0	ND	1
801338-1	20	51.4877	51.5469	51.5469	0.0000	No	0.0592	2960.0	125.0	2960.0	1
801338-2	10	51.4257	51.4781	51.478	0.0001	No	0.0523	5230.0	250.0	5230.0	1
801339-1	10	49.2776	49.3233	49.3233	0.0000	No	0.0457	4570.0	250.0	4570.0	1
801339-2	10	49.6827	49.7304	49.7302	0.0002	No	0.0475	4750.0	250.0	4750.0	1
801367-1	100	68.5128	68.5391	68.5388	0.0003	No	0.0260	260.0	25.0	260.0	1
801373-1	10	51.1901	51.2339	51,2335	0.0004	No	0.0434	4340.0	250.0	4340.0	1
801373-2	10	48.1840	48.2281	48,2277	0.0004	No	0.0437	4370.0	250.0	4370.0	1
801373-3	10	48.0115	48.0559	48.0557	0.0002	No	0.0442	4420.0	250.0	4420.0	1
801421-2	200	108.5309	108.5487	108.5487	0.0000	No	0.0178	89.0	12.5	89.0	1
801421-4	100	67.0572	67.0705	67.0701	0.0004	No	0.0129	129.0	25.0	129.0	1
801373-3D	10	49.0186	49.0653	49.065	0.0003	No	0.0464	4640.0	250.0	4640.0	1
LCS	100	108.5868	108.6359	108.6358	0.0001	No	0.0490	490.0	25.0	490.0	1
801432	495	167.3462	167.3489	167.3485	0.0004	No	0.0023	4.6	5.1	ND	1
801428-17	50	67.2132	67.2502	67.2498	0.0004	No	0.0366	732.0	50.0	732.0	1
QC1304	100	67.1053	67.1389	67.1389	0.0000	No	0.0336	336.0	25.0	336.0	1
QC	100	74.7344	74.7688	74 7687	0.0001	No	0.0343	343.0	25.0	343.0	1
QC	100	73.1398	73.1732	73.1728	0.0004	No	0.0330	330.0	25.0	330.0	1
PE1304	100	74.7105	74.744	74.744	0.0000	No	0.0335	335.0	25.0	335.0	1
PE	100	76.5483	76.5822	76.5819	0.0003	No	0.0336	336.0	25.0	336.0	1
PE	100	78.4005	78.4347	78.4347	0.0000	No	0.0342	342.0	25.0	342.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

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	490	500	98.0%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801373-3	0.0442	0.0464	2.4%	≤5%	Yes
		Neft Sogarous			

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Reviewer Signature

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12D Date Analyzed: 5/9/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801338-1	5110	0.58	3321.5	0.89
801338-2	8590	0.61	5583.5	0.94
801339-1	7590	0.60	4933.5	0.93
801339-2	7920	0.60	5148	0.92
801367-1	401	0.65	260.65	1.00
801373-1	7660	0.57	4979	0.87
801373-2	7760	0.56	5044	0.87
801373-3	7740	0.57	5031	0.88
801421-2	154	0.58	100.1	0.89
801421-4	205	0.63	133.25	0.97
801373-3D	7740	0.60	5031	0.92
LCS				
801432	9.21	ND	5.9865	ND
801428-17	1292	0.57	839.8	0.87
QC1304	586	0.57	380.9	0.88
QC	586	0.59	380.9	0.90
QC	586	0.56	380.9	0.87
PE1304	618	0.54	401.7	0.83
PE	618	0.54	401.7	0.84
PE	618	0.55	401.7	0.85



Sy



Alkalinity by SM 2320B

Analytical Batch: 05ALK12A Matrix: Water Date of Analysis:

													1 1 01	
Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as CaCO₃ (ppm)	CO3 Alkalinity as CaCO ₃ (ppm)	OH Alkalinity as CaCO₃ (ppm)	Low Alkalinity as CaCO ₃ (<20ppm)
BLANK	5.40	50	0.02		0.0	0.00		0.0	5	ND	ND	ND	ND	
801298-3	9.13	50	0.02	0.8	16.0	7.45		149.0	5	149.0	117.0	32	ND	
801298-3 DUP	9.15	50	0.02	8.0	16.0	7.40		148.0	5	148.0	116.0	32	ND	
801298-4	8.49	50	0.02	0.45	9.0	6.65		133.0	5	133.0	115.0	18	ND	
801298-5	8.27	50	0.02	ĺ	0.0	7.10		142.0	5	142.0	142.0	ND	ND	
801298-6	8,13	50	0.02	<u> </u>	0.0	6.15	i	123.0	5	123.0	123.0	ND	ND	
801299-1	7.75	50	0.02		0.0	7.25		145.0	5	145.0	145.0	ND	ND	
801299-2	7,79	50	0.02		0.0	7.70		154.0	5	154.0	154.0	ND	ND	
801321-7	7.49	50	0.02		0.0	11.90		238.0	5	238.0	238.0	ND	ND	
801321-8	7.39	50	0.02		0.0	8.45		169.0	5	169.0	169.0	ND	ND	
801300-1	8.26	50	0.02		0.0	9.45		189.0	5	189.0	189.0	ND	ND	
801300-3	9.36	50	0.02	1,3	25.0	8.80		176.0	5	176.0	126.0	50	ND	
801300-5	7.73	50	0.02		0.0	8.85		177.0	5	177.0	177.0	ND	ND	
801311	8.11	50	0 02		0.0	4.25		85.0	5	85.0	85.0	ND	ND	
801339-2	7.35	50	0.02	ļ	0.0	7.80	i	156.0	5	156.0	156.0	ND	ND	
801339-2 MS	9.06	50	0.02	1.8	35.0	12.40	i	248.0	5	248.0	178.0	70	ND	
801339-2 MSD	9.00	50	0.02	1.7	34.0	12.40	L	248.0	5	248.0	180.0	68	ND	
		ļ					<u> </u>							
LCS	10.59	50	0.02	2.3	45.0	4.90		98.0	5	98.0	8.0	90	ND	
LCSD	10.53	50	0.02	2.3	46.0	4.90		98.0	5	98.0	6.0	92	ND	

Calculations as follows:

Low Alkalinity: = as mg/L CaCO3

 $(2 \times B - C) \times N \times 50000$ mL sample

Where:

T = Total Alkalinity, mg CaCO3/L

P = Phenolphthalein Alkalinity, mg CaCO3/L

A = mL standard acid used

N = normality of standard acid

B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Laboratory Control Sample (LCS/LCSD) Summary

Accept Limit

<5

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

QC Within

Control?

Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
801298-3	149	148	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?
004330.5	156	1	100	100	248	256.00	92%	75-125	Yes	0.0%	≤20%	Yes
801339-2	156	1	<u>100</u>	100	248	256.00	92%	75-125	Yes	0.070	=2070	163

Melissa S.

Blank Summary

Measured

Value, ppm

Reporting Limit,

RL

5 ppm

Hope T.

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

CHAIN OF CUSTODY RECORD

COC Number

[IM3Plant-WDR-359]

20132 6 TURNAROUND TIME DATE 5/01/12 10 Days

												\Box		4				-						<u>.</u>
COMPANY	CH2M HILL /E2) -					7	/	7	/	$\overline{}$	$\overline{}$	DIVERS		7		7	27			77			
PROJECT NAME	PG&E Topock I	M3											3				/		රි/ රි		/ /	CON	MENTS	
PHONE	530-229-33	303	FAX 530	-339-3303		,	/- ,	/ ,	/ ,	/- ,	/ ,	List Below	/ ,		\\\^2	/ .	, M.	(4500.0.		/ /				
ADDRESS	155 Grand Ave	Ste 1000					Palam				- /	<i>v</i> /	- /	/	(S) /		7/	\\ <u>\&</u>			?/			
	Oakland, CA 94	1612					¥/				/~) [2]		$\frac{2}{3}$	3				1 St	/			
P.O. NUMBER	424973.01.DM					/Lab	0.0	/	/	/ .	\go\ .002	00,	\g^). 10.		tals,	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	/%		/ું}/				
SAMPLERS (SIGNA	ATURE	Kught				Alkalin	EC (132	, vo. 1)	Turb (2	Total 1.	4mm (200.7)	Total F. (4500-NH2)	Anios (4500-P)	70C (300.0) F ME	Dissal, CO, 1103; SO4	M paylo	NO2 (11/03 - Re)	2 (4500-NO2B)		JER OF CONTAINERS				
SAMPLE 1.D.		DATE	TIME	DESCRIPTION	\\rights	4 Ka	EC.	/ <u>§</u>	\\ \ta_{\ta1}	/ z ²	Am	70/2	Anj.	/5) Signal Signal	/% %	[/ S		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					
SC-700B-V	VDR-359	5/01/12	1509		Х		Х	Х	Х	Х	Х		Х				Х		4		ph	-2	(rw)	7)
SC-100B-V	WDR-359	5/01/12	15:01		Х	Х	Χ	Х	Х	Х	×	Х	Х	Х	Х	Х	Х		9		P	4=6/	pu=1	<u> </u>
																						1260		
			BETE																					
For	Sample	Con	IIIIO																					
	ee Form							etiae santa		TANAMENTA MATERIAL		PARTITION OF THE PARTIT	erebest II	Marin II.								***************************************		
	CCIAIII	a weeks					marenesses N		N House	s Barrets Succession	11		EX SECURITIONS											
	The state of the s		A						VE	2			X	0	<u> </u>	<u> </u>	L		13	ТОТА	L NUMBE	R OF COI	NTAINERS	************

	, CI	HAIN OF CUSTODY SI	GNATURE	RECORD	M-1-1-1	SAMPLE CONDITIONS
	Signature (\Cusy (Relinquished)	Printed C.KmgUt Name	Company/ Agency	CHZMHILL	Date/ 5-1-12 Time 15:38	RECEIVED COOL WARM 3 3 6
	Signature (Received) B. Day of	Printed Name B. DAYAG	Company/ Agency	TLI	Date/ 5-1-12 Time /538	CUSTODY SEALED YES D NO MY
	Signature (Relinquished) 3. Dayay	Printed Name <i>B - OAYA G</i>	Company/ Agency	TC1	Date(5-7-72 Time 2040	SPECIAL REQUIREMENTS:
_	Signature (Received) Luda	Printed Makeums	Company/ - Agency	TO E	Date/ Stella 20140	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn,
3	Signature (Relinquished)	Printed Name	Company/ Agency		Date/ Time	Mo, Ni, Fe, Zn
	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	l= :4: -1
5/2/12		7	2 mL	9.5	// Am	Initials
1 V	V -2	1 7	7	 	11.1.	4
8/2/12		7	2	9.5	11:10 Am 11:30 Am 11:35 Am	4
7/2/12	80/339-1	7.	2m	4,)	//:30 Am	4
-		-	4	<u> </u>	11,32 AM	<u>, </u>
			•			
	·					

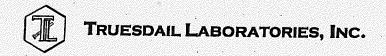
-		<u> </u>				
			The same of the sa			
		<u>-</u>		L_		



Turbidity/pH Check

		-	11	irbidity/pH C	neck		
	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
	So 1312(1-2)4)	<1	72	4-3472	BE	NC	x < 5 15 :45
	801320(192)	< 1	42	5-2-12	BE	xes	30 to A
	8013216-3)						
	801329(1-10)	٠				No	Ne
	801330		>2		-	No	xes 7:45 AM
	801334	>1	42			yes	3 0 to A
	50 1338 (1-2)	</td <td>>2</td> <td></td> <td></td> <td></td> <td></td>	>2				
	801339(1-2)		42				3
	801339 (12)		>2				
	80134011-22)	7	くて				
	801344 (1-69)	<'\	√ 2			NO	NO
	8013456-10)	1	<u>J</u>			700	7.0
	801346 (1-48)		72				xes 14:00
	801347(1-18)		>2			 	1 1
	80 1348 (1-941)		ار ک				No
	801349(1-33)		72				
	801350(1-33)		<u> </u>	 			XES IN:00
	801341 (1-2)	Y	<2				400
	801351	71			. *	عرن ح	NO BaleA
	80135817-91	< 1	>2			NO NO	xcs 15:00
	801358	71	1		-	Xes	
	50 1373 (1-3)	>1	> Z	5-3-12	BE	Yes	
	801366 (10-12)	<1	>2	1	92	N 0	3010A xes 7130
	80 1368	₹1	/2				· ·
	80137161-2)	T	- 			No	NO
	801370 - 4	>1				· 4cs	3 in A
	Go 1394(1-3)	<1	<u> </u>	5-4-12	BE	NO	
	801330	<1	72	5-7-12	BE		Xes
	801412		<u> </u>	1	- B	Ne	No Î
i. Profesional	801421(1727)	<u>۲</u>	>2	5-8-12	BE	<u> </u>	<u> </u>
	801428 [17,24)	<u> </u>		1-0-12	106	<u> </u>	xes 9100 AM
()	801427		<u>√</u> <2				
	801426		- } 				NO
	@01437L1-2)		>2				-
	801432	*	1-			*	Yes 15:00
	801233-8						
1 BE	801445	*	2	5-9-12	3 <u>4</u>		V
5-9-12 BE 5-9-12 BE	80-1447		3	3000	1)&	Yes	30104
5-9-100	801445	. ≯ \	\Z	5-9-12	01		- 1
<u> </u>	801447	>1		3-1-16	BL	y c5	30104
-	80 14 46	<1				<u> </u>	
-	801448					Na	No.
-	801449						
-	80 1450						
-	801460	<u>_</u>	73			¥	*
-	801461	<u> </u>	>2				30 10A yes 15.0
	801471		>2	<u></u>	v	xes	3010A V
-		<u> </u>	>2	5-10-12	BL	NO.	xes 8:30
	801472(10-12)		- +				<u> </u>
	801462(1-19)		<z< td=""><td>l l</td><td></td><td>¥C3</td><td>30 10 A</td></z<>	l l		¥C3	30 10 A

134



Sample Integrity & Analysis Discrepancy Form

	lient: <u>E & `</u> ate Delivered: <u>057 0//12 Time: å0'40 By: □Mail</u> ⊠	Lab # <u>80/339</u> Field Service □Client
1.	. Was a Chain of Custody received and signed?	ÆNYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No □N/A
<i>3</i> .	Are there any special requirements or notes on the COC?	□Yes □No ₽N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ☑N/A
5 .	Were all requested analyses understood and acceptable?	∌∜ es □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? 3°C	EdYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)?	Ø(Yes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ÆN/A
9.	Does the number of samples received agree with COC?	AYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ZYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail AClient	Yes □No □N/A
2.	Were samples pH checked? pH = See C. ω. e.	∕ ⊈Yes □No □N/A
<i>3.</i>	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	പ്Yes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH	Q(Yes □No □N/A
5.	Sample Matrix: □Liquid □Drinking Water □Ground W □Sludge □Soil □Wipe □Paint □Solid	
3 .	Comments:	
	Sample Check-In completed by Truesdail Log-In/Receiving:	2-Shabunian

TRUESDAIL LABORATORIES, INC.

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Established 1931

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

June 19, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-360 PROJECT, GROUNDWATER

MONITORING, TLI No.: 801461

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-360 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 May 8, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

ل مراج 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

Laboratory No.: 801461

Date: June 19, 2012

Collected: May 8, 2012 Received: May 8, 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 / Maksim Gorbunov



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Laboratory No.: 801461 Date Received: May 8, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
					······································				
801461-001	SC-700B-WDR-360	E120.1	NONE	5/8/2012	14:50	EC	7430	umhos/cm	2.00
801461-001	SC-700B-WDR-360	E200.8	NONE	5/8/2012	14:50	Chromium	ND	ug/L	1.0
801461-001	SC-700B-WDR-360	E200.8	NONE	5/8/2012	14:50	Manganese	4.6	ug/L	1.0
801461-001	SC-700B-WDR-360	E218.6	LABFLT	5/8/2012	14:50	Chromium, hexavalent	ND	ug/L	1.0
801461-001	SC-700B-WDR-360	SM2130B	NONE	5/8/2012	14:50	Turbidity	0.130	NTU	0.100
801461-001	SC-700B-WDR-360	SM2540C	NONE	5/8/2012	14:50	Total Dissolved Solids	4180	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



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Page 1 of 8

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Printed 6/19/2012

Matrix

Laboratory No. 801461

REPORT

E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Release Number:

Field ID

Samples Received on 5/8/2012 9:00:00 PM

Lab ID

SC-700B-WDR-360 801461-001 05/08/2012 14:50 Water Batch 05EC12C Specific Conductivity - EPA 120.1 Parameter Unit Analyzed DF MDL RL Result 801461-001 Specific Conductivity umhos/cm 05/11/2012 1.00 0.0950 2.00 7430 Method Blank Parameter Unit DF Result Specific Conductivity umhos 1.00 ND Duplicate Lab ID = 801461-001 Parameter Unit DF Result Expected **RPD** Acceptance Range Specific Conductivity umhos 1.00 7420 7430 0.135 0 - 10Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 704 706 1.00 99.7 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 1.00 992 998 99.4 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

Project Number: 424973.01.DM

Page 2 of 8 Printed 6/19/2012

Chrome VI by EPA 218.6

Batch 05CrH12H

	=						
Parameter		Unit	Ana	ilyzed [OF MDL	. RL	Result
801461-001 Chromium, Hex	avalent	ug/L	05/09	9/2012 13:50 5	.00 0.125	1.0	ND
Method Blank							
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND			Lab ID =	801340-014
Parameter	Unit	DF	Result	Expected	RPD		nce Range
Chromium, Hexavalent	ug/L	5.00	29.5	29.7	0.571	0 - 20	nce Nange
Low Level Calibration	Verification						
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.194	Expected 0.200	Recovery 97.1	Accepta 70 - 130	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.83	Expected 5.00	Recovery 96.6	90 - 110	nce Range 301340-013
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 77.8	Expected/Added 79.9(50.0)	d Recovery 95.7	90 - 110	nce Range 301340-014
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 78.0	Expected/Added 79.7(50.0)	d Recovery 96.7	Acceptar 90 - 110	nce Range 801340-015
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 30.1	Expected/Added 31.0(25.0)	d Recovery 96.2	90 - 110	nce Range 301340-016
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 41.0	Expected/Added 41.4(25.0)	Recovery 98.4	Acceptar 90 - 110	nce Range 801340-017
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 31.4	Expected/Added 32.1(25.0)	Recovery 97.4	90 - 110	nce Range 901340-020
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 126.	Expected/Added 126(75.0)	Recovery 99.6	Acceptar 90 - 110	ice Range



Client: E2 Consulting Eng	jineers, Ind		roject Name: roject Numbe	pject	Page 3 of 8 Printed 6/19/2012		
Matrix Spike						Lab ID = 801340-021	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 173.	Expected/Added 176.(100.)	Recovery 96.9	Acceptance Range 90 - 110 Lab ID = 801340-022	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 184.	Expected/Added 188.(100.)	Recovery 96.5	Acceptance Range 90 - 110 Lab ID = 801461-001	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.943	Expected/Added 1.06(1.00)	Recovery 87.8	Acceptance Range 90 - 110 Lab ID = 801461-001	
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 5.00	Result 4.63	Expected/Added 5.07(5.00)	Recovery 91.1	Acceptance Range 90 - 110	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.85	Expected 5.00	Recovery 97.0	Acceptance Range 90 - 110	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.66	Expected 10.0	Recovery 96.6	Acceptance Range 95 - 105	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.69	Expected 10.0	Recovery 96.9	Acceptance Range 95 - 105	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.71	Expected 10.0	Recovery 97.1	Acceptance Range 95 - 105	



Client: E2 Consulting Engineers, Inc.

Project Name:

PG&E Topock Project

Page 4 of 8

Project Number: 424973.01.DM

Printed 6/19/2012

Metals by EPA 200.8, To	tal		Batch	061512A				
Parameter		Unit	Ana	lyzed [DF	MDL	RL	Result
801461-001 Chromium		ug/L	06/15	5/2012 22:26 5	.00	0.195	1.0	ND
Manganese		ug/L	06/15	5/2012 22:26 5	.00	0.270	1.0	4.6
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	801750-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	ance Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	3.00	2.90		3.49	0 - 20	
Low Level Calibration	Verification	1						
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Chromium	ug/L	1.00	0.140	0.200		70.0	70 - 130)
Manganese	ug/L	1.00	0.154	0.200		76.9	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Chromium	ug/L	5.00	94.6	100.		94.6	85 - 115	5
Manganese	ug/L	5.00	94.7	100.		94.7	85 - 115	5
Matrix Spike							Lab ID =	801750-001
Parameter	Unit	DF	Result	Expected/Adde	d R	ecovery	Accepta	nce Range
Chromium	ug/L	5.00	101.	100.(100.)		101.	75 - 125	5
Manganese	ug/L	5.00	104.	103.(100.)		101.	75 - 125	5
Matrix Spike Duplicate)						Lab ID =	801750-001
Parameter	Unit	DF	Result	Expected/Adde	d R	ecovery	Accepta	nce Range
Chromium	ug/L	5.00	104.	100.(100.)		104.	75 - 125	5
Manganese	ug/L	5.00	104.	103.(100.)		101.	75 - 125	;
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Chromium	ug/L	1.00	9.72	10.0		97.2	90 - 110)
Manganese	ug/L	1.00	9.41	10.0		94.1	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Chromium	ug/L	1.00	9.69	10.0		96.9	90 - 110	_



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 6/19/2012

Total Dissolved Solids b	y SM 254	0 C	Batch	05TDS12E					
Parameter	T 38 147 to 1	Unit	Ana	lyzed	DF	MDL	RL	Result	
801461-001 Total Dissolved S	Solids	mg/L	05/10	/2012	1.00	0.400	250.	4180	
Method Blank									
Parameter	Unit	DF	Result						
Total Dissolved Solids	mg/L 1.00 ND								
Duplicate							Lab ID =	801441-008	
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range	
Total Dissolved Solids	mg/L	1.00	1190	1190		0.336	0 - 5		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Total Dissolved Solids	mg/L	1.00	500.	500.		100.	90 - 110		
Parameter 801461-001 Turbidity		Unit NTU		lyzed 0/2012	DF 1.00	MDL 0.0140	RL 0.100	Result 0.130	
801461-001 Turbidity		NTU	05/09)/2012	1.00	0.0140	0.100	0.130	
Method Blank									
Parameter	Unit	DF	Result						
Turbidity	NTU	1.00	ND						
Duplicate							Lab ID =	801461-001	
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range	
Turbidity	NTU	1.00	0.128	0.130		1.55	0 - 20		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity	NTU	1.00	8.03	8.00		100.	90 - 110		
Lab Control Sample D	Ouplicate								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range	
Turbidity		1.00	8.12	8.00		102.	90 - 110		



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12E Date Analyzed: 5/13/12

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	112.3609	112.3609	112.3609	0.0000	No	0.0000	0.0	25.0	ND	1
801437-1	100	74.9410	74.9972	74.9964	0.0008	Yes 0.0554		554.0	25.0	554.0	1
801437-2	50	51.0652	51.0941	51.094	0.0001	No	0.0288	576.0	50.0	576.0	1
801441-1	50	72.6498	72.706	72.7059	0.0001	No	0.0561	1122.0	50.0	1122.0	1
801441-2	50	50.4226	50.4611	50.4607	0.0004	No	0.0381	762.0	50.0	762.0	1
801441-3	50	47.5322	47.5667	47.5664	0.0003	No	0.0342	684.0	50.0	684.0	1
801441-4	50	50.9615	50.995	50.9948	0.0002	No	0.0333	666.0	50.0	666.0	1
801441-5	50	51.0856	51.1143	51.1143	0.0000	No	0.0287	574.0	50.0	574.0	1
801441-6	100	72.9640	73.0147	73.0137	0.0010	Yes	0.0497	497.0	25.0	497.0	1
801441-7	50	73.4952	73.5472	73.5472	0.0000	No	0.0520	1040.0	50.0	1040.0	1
801441-8	50	47.9051	47.9647	47.9647	0.0000	No	0.0596	1192.0	50.0	1192.0	1
801441-8D	50	49.3568	49.4166	49.4165	0.0001	No	0.0597	1194.0	50.0	1194.0	1
LCS	100	111.5161	111.5661	111.5661	0.0000	No	0.0500	500.0	25.0	500.0	1
801441-9	50	47.2292	47.287	47.2868	0.0002	No	0.0576	1152.0	50.0	1152.0	1
801441-10	50	76.5145	76.5569	76.5566	0.0003	No	0.0421	842.0	50.0	842.0	1
801461	10	48.6030	48.6451	48.6448	0.0003	No	0.0418	4180.0	250.0	4180.0	1
801471	100	73.5967	73.6272	73.6272	0.0000	No	0.0305	305.0	25.0	305.0	1
801497	100	72.4193	72.4509	72.4509	0.0000	No	0.0316	316.0	25.0	316.0	1
801435-1	100	68.2206	68.2653	68.2653	0.0000	No	0.0447	447.0	25.0	447.0	1
801435-2	50	72.3893	72.4655	72.4655	0.0000	No	0.0762	1524.0	50.0	1524.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

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

1	A-B	~	1	0^6	
(\overline{C}	1	1	U	

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	500	500	100.0%	90-110%	Yes
LCSD					

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801441-8	0.0596	0.0597	0.1%	≤5%	Yes
	4.48-64				

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Reviewer Signature

Jenny T.

Analyst Printed Name



Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12E Date Analyzed: 5/13/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Cald TDS <1.3
		·		
801437-1	964	0.57	626.6	0.88
801437-2	1037	0.56	674.05	0.85
801441-1	1684	0.67	1094.6	1.03
801441-2	1218	0.63	791.7	0.96
801441-3	1152	0.59	748.8	0.91
801441-4	1135	0.59	737.75	0.90
801441-5	1008	0.57	655.2	0.88
801441-6	883	0.56	573.95	0.87
801441-7 1508 801441-8 1708		0.69	980.2	1.06
		0.70	1110.2	1.07
801441-8D	1708	0.70	1110.2	1.08
LCS				
801441-9	1679	0.69	1091.35	1.06
801441-10	1334	0.63	867.1	0.97
801461	7400	0.56	4810	0.87
801471	545	0.56	354.25	0.86
801497	545	0.58	354.25	0.89
801435-1	770	0.58	500.5	0.89
801435-2	1369	1.11	889.85	1.71
		<u> </u>		
		<u> </u>		

4

* due to spl matrix ~ caramelized

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-360]

801461

COC Number

 TURNAROUND TIME
 10 Days

 DATE
 05/08/12
 PAGE 1 OF 1

COMPANY	E2						$\overline{}$	$\overline{}$	7		, , , , , , , , , , , , , , , , , , ,		,	y	7	7	$\overline{}$	$\overline{}$	$\overline{}$	7	I^{-}	СОММ	ENTS
PROJECT NAME	PG&E Topock								/ ,		ec'd	05/	08/1	2	8	/				//	/ /		
PHONE	(530) 229-3303	*	FAX (530)	339-3303			/ /	/ /	' /	\$80	7 8	0,1	4	6		/	/ /	/ /	/ ,	/ /	\mathcal{M}		
ADDRESS	155 Grand Ave	Ste 1000	enemis				' /.	z / z	$\langle \cdot \rangle$											CONTAINERS			
	Oakland, CA 94	612				/5	, / <u>.</u>	(120,1)	/ /		/ /	/ /	/		/	/				/KEN			
P.O. NUMBER	424973.01.DM		TEAM	1	/	Lab Fillered	1.00	$\langle c_{c}^{c} \rangle$	<u> </u>	/						′ /	/ /	/ /	/ /	١٥			
SAMPLERS (SIGNA	ATURE	CKnie	i lut			67/69	Specific	TDS (SMPs.	3/	/ 8	(5/4/2130)									40%			
					Con (21,8,2)) # / # / # / # / # / # / # / # / # / #		1/8/8	/ /	/Thidity] /	/ /	/ ,	/ ,	/	/	/	/	NUMBE	7			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	10	/~	100			\simeq $_{\perp}$		/_	/		/				<u> </u>	<u> </u>			
SC-700B-WDF	₹-360	05/08/12	14:52	Water	х	х	х	х		х									3		ļ	DH=6(7.00.7)
																			3	TOTA	L NUM	BER OF CONT	AINERS



For Sample Conditions See Form Attached

CH	IAIN OF CUSTODY SI	SAMPLE CONDITIONS			
Signature (Relinquished) Certholish	Printed Name Sect O'Danell	Company/ Agency Chambill	Date/ 5-8-(2 Time /5/5	RECEIVED COOL ☑ WARM ☐ 3 °C°F	
Signature (Received) B. D ay 0.9	Printed Name <i>B - OAYAG</i>	Company/ Agency <i>TC/</i>	Datel 5-8-15 Time 1515	CUSTODY SEALED YES NO DY	
Signature (Relinquished) B. Dayaq	Printed Name B DAYAG	Company/ Agency TC/	Date/5-8-/2-240	SPECIAL REQUIREMENTS:	
Signature Shaleumna	Printed Luda	Company/ 742	Date MAY 08 2012	100	
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

MVG 5/2/12 MVG 5/2/12

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials	
5/2/12			0.2 0.5 mL	9.5	23:00	MG	
	-7		1		23:05		
	-3		2 SmL		23:10		
	-4				23:15		
V	V -5	4	4	4	23:20	V	
5/3/12	801372-6	٦	2 m L	9.5	8:30 Am	6.	
1	78				8540 Am		
	8				8:50 Am		
	-9			·	8:55 Am		
	-10				9:05 Am		
7	11-11	4	<u> </u>	7	9:15 Am		
5/9/12	801461	7	2mL	9.5	9 Am		
				-			
					·		
			·				
					3		
				·			
			-				
			·				

C 5/21/12

Turbidity/pH Check

	Turbidity/pH Check								
	Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)		
	En 1312(1-2,4)	<1	72	4-3492	BE	No	xes 15:45		
	8013201192)	< 1	42	5-2-12	BE	xes	30 k A		
	8013216-3)								
	801329(1-10)	٠				No	Ne		
	801330	,	>2		,	Ne	Xes 7:45 AM		
	801334	>1	42			Yes	3010 A		
	501338 (1-2)	</td <td>>2</td> <td></td> <td></td> <td></td> <td>-</td>	>2				-		
	801339(1-2)		<2				Ĭ		
	801339 (12)		>2						
	80134061-22)		<u> </u>						
	801344 (1-69)	<1	<u> </u>			NO	NO		
	801345 (1-10)	1	1.	1	1	7,00	7.0		
	801346 (1-48)		> 2	1 1			Xes 14:00		
	801347(1-18)		>2				1 1		
	80 1348 (1-94)		ز د				No		
	801349(1-33)		72		<u> </u>	· · · · · · · · · · · · · · · · · · ·			
	801350(1-33)		72				XES 14:00		
	801341 (1-2)		\2 ·			+ +	4 4		
	801351		72		- 3	4	MO		
	80135817-91	<u> </u>	<u>\</u>			yes	3010A xcs 15:00		
	801358		>2			No	i		
		71	`	<u> </u>		yes	Bolo A Yes		
	So 1373 (1-3)	>1	> 2	5-3-12	BE	Yes	3010A		
	801366 (10-12)	<u> </u>	<u> </u>		-	N°	xes 7:30		
	80 1368	₹1	<2			₩¢	NO		
	80137161-2)	\ <u>\</u>		\	<u> </u>	4			
	80 1370 - H	>1		4		· yes	3 410 A		
	80 1394 (1-3)	</td <td><u> >2</u></td> <td>5-4-12</td> <td>BE</td> <td>N 0</td> <td>Xes</td>	<u> >2</u>	5-4-12	BE	N 0	Xes		
9 d 4 d	801330	<u><1</u>	<u> </u>	5-7-12	BE	Ne	No		
AV No	801412	\		<u> </u>	<u>, </u>	l l	•		
K.	801421(1721)	<1	<u> </u>	5-8-12	BE	Mc	xes 9 100 AM		
	801428 (17124)	Հ۱	<u> </u>						
	801427		く て				NO		
1900 Maria	801426								
	801437L1-2)		<u> </u>				yes 15:00		
	801432								
	801433-8	↓							
3 0-12 BE	६०।५५5	*		5-9-12	<u> 34</u>	Xes	30104		
5-9-12 BE 5-9-12 BE	80-1447	- 1	<u>`</u>						
5-7	8014.45	. > \	くて	5-9-12	BL	y' c5	30104		
	801447	>1				\L			
	80 14 46	< 1				Na	V.o		
Ī	801448					, v	7,5		
Ī	801449								
ľ	80 1450								
	801460	>1	>2			¥25	30 10A Yes 15.0		
	801461	<1	>2	1.		xes	3010A J		
	801471	<1	>2	5-10-12	BI-	NO	xes 8:30		
+	801472(10-12)		- 1- -	7 - 10 - 10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	// -	1000.50		
ja l	801912(1-19)		<z< td=""><td></td><td></td><td>¥c3</td><td>\$10 A</td></z<>			¥c3	\$10 A		
yr · L	50 14 00 (1-14)	1	<u> </u>		1	163	7.007		

040



Sample Integrity & Analysis Discrepancy Form

Clie	ent: <u>E &</u>	Lab # <u>80/46/</u>
Date	e Delivered: <u>ØS/ Ø\$</u> / 12 Time: <u>Å/: ØØ</u> By: □Mail ØF	ield Service □Client
1.	Was a Chain of Custody received and signed?	Mayes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No Þ\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?	QÎYes □No □N/A
5.	Were samples received in a chilled condition? Temperature (if yes)? <u>3 ° C</u>	ÆQİYes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ad Yes □No □N/A
l.	Were sample custody seals intact?	□Yes □No ÆN/A
	Does the number of samples received agree with COC?	ÁlYes □No □N/A
0.	Did sample labels correspond with the client ID's?	☑Yes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	Yes □No 2≦N/A
2.	Were samples pH checked? pH = See c. e.e.	₽Yes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Z(Yes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH 🔊 Std	∡dYes □No □N/A
5.	Sample Matrix: □Liquid □Drinking Water. □Ground V □Sludge □Soil □Wipe □Paint □Solid ☑C	111 -4
5 .	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	L'Sleabuers

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 19, 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-361 PROJECT, GROUNDWATER MONITORING, TLI NO.: 801606

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-361 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 May 15, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

Michael =

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801606

Date: June 19, 2012 **Collected:** May 15, 2012

Received: May 15, 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 / Maksim Gorbunov



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

Laboratory No.: 801606 Date Received: May 15, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801606-001 801606-001 801606-001 801606-001	SC-700B-WDR-361 SC-700B-WDR-361 SC-700B-WDR-361 SC-700B-WDR-361 SC-700B-WDR-361		NONE NONE NONE LABFLT NONE NONE	5/15/2012 5/15/2012 5/15/2012 5/15/2012 5/15/2012 5/15/2012	15:07 15:07 15:07 15:07 15:07 15:07	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids	7320 ND 6.2 ND ND 4070	umhos/cm ug/L ug/L ug/L NTU mg/L	2.00 1.0 1.0 0.20 0.100 250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Page 1 of 9

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Printed 6/19/2012

Laboratory No. 801606

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 5/15/2012 8:30:00 PM

Field ID Lab ID Collected Matrix SC-700B-WDR-361 801606-001 05/15/2012 15:07 Water Specific Conductivity - EPA 120.1 Batch 05EC12F Parameter Unit Analyzed DF MDL RL Result 801606-001 Specific Conductivity umhos/cm 05/16/2012 1.00 0.0950 2.00 7320 Method Blank Parameter Unit DF Result Specific Conductivity umhos 1.00 ND Duplicate Lab ID = 801606-001 Parameter Unit DF Result Expected RPD Acceptance Range Specific Conductivity umhos 1.00 7320 7320 0.00 0 - 10Lab Control Sample Parameter Unit DF Expected Result 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 1.00 704 706 99.7 90 - 110 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity umhos 1.00 992 998 99.4 90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch 05CrH12L

Parameter	,,,',','daw,	Unit	Ana	alyzed	DF	MDL	RL	Result
801606-001 Chromium, Hexa	avalent	ug/L	05/16	6/2012 14:21 1	.00	0.0250	0.20	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	801603-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	0.330	0.351		6.23	0 - 20	
Low Level Calibration	Verification	1						
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.172	Expected 0.200		ecovery 86.2	Accepta 70 - 130	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.91	Expected 5.00		ecovery 98.2	90 - 110	nce Range 801340-012
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.78	Expected/Adde 1.76(1.00)		ecovery 102.	90 - 110	nce Range 801603-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.34	Expected/Adde 1.35(1.00)	led Recovery 98.6		90 - 110	nce Range 801603-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.39	Expected/Adde 1.38(1.00)		ecovery 101.	90 - 110	nce Range 301603-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.69	Expected/Adde 1.68(1.00)		ecovery 102.	90 - 110	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.86	Expected/Added		ecovery 102.	Acceptar 90 - 110	301603-004 nce Range 301604-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 8.55	Expected/Added 8.59(5.00)		ecovery 99.2	Acceptar 90 - 110	nce Range



Client: E2 Consulting En	gineers, In		Project Name: Project Numbe	PG&E Topock Pr r: 424973.01.DM	roject	Page 3 of 9 Printed 6/19/2012
Matrix Spike						Lab ID = 801604-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.01	Expected/Added 1.00(1.00)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 801604-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 7.89	Expected/Added 7.86(5.00)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 801604-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.55	Expected/Added 8.61(5.00)	Recovery 98.8	Acceptance Range 90 - 110 Lab ID = 801604-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 9.32	Expected/Added 9.23(5.00)	Recovery 102.	Acceptance Range 90 - 110 Lab ID = 801604-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.04	Expected/Added 1.00(1.00)	Recovery 104.	Acceptance Range 90 - 110 Lab ID = 801604-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Added 1.00(1.00)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 801604-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.44	Expected/Added 1.46(1.00)	Recovery 97.6	Acceptance Range 90 - 110 Lab ID = 801606-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.13	Expected/Added 1.12(1.00)	Recovery 101.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.91	Expected 5.00	Recovery 98.2	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.91	Expected 10.0	Recovery 99.1	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.88	Expected 10.0	Recovery 98.8	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.87	Expected 10.0	Recovery 98.7	Acceptance Range 95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Tot		Batch	n 061512A					
Parameter		Unit	Ana	alyzed [)F	MDL	RL	Result
801606-001 Chromium		ug/L	06/15	5/2012 23:37 5	.00	0.195	1.0	ND
Manganese		ug/L	06/15	5/2012 23:37 5	.00	0.270	1.0	6.2
Method Blank					, ,,			
Parameter Chromium	Unit ug/L	DF 1.00	Result ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration \	•		ND					
Parameter Unit Chromium ug/L		DF 1.00	Result 0.140	Expected 0.200	F	Recovery 70.0	70 - 130	
Manganese Lab Control Sample	ug/L	1.00	0.154	0.200		76.9	70 - 130	
Parameter Chromium Manganese Matrix Spike	Unit ug/L ug/L	DF 5.00 5.00	Result 96.5 96.9	Expected 100. 100.	R	ecovery 96.5 96.9	85 - 115 85 - 115	nce Range 801603-001
Parameter Chromium Manganese Matrix Spike Duplicate	Unit ug/L ug/L	DF 5.00 5.00	Result 94.2 95.0	Expected/Added 100.(100.) 100.(100.)		ecovery 94.2 95.0	75 - 125 75 - 125	nce Range 301603-001
Parameter Chromium Manganese MRCCS - Secondary	Unit ug/L ug/L	DF 5.00 5.00	Result 103. 104.	Expected/Added 100.(100.) 100.(100.)	A b	ecovery 103. 104.	Accepta 75 - 125 75 - 125	nce Range
Parameter Chromium Manganese MRCVS - Primary	Unit ug/L ug/L	DF 1.00 1.00	Result 9.72 9.41	Expected 10.0 10.0		ecovery 97.2 94.1	Acceptai 90 - 110 90 - 110	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.59	Expected 10.0		ecovery 95.9	Acceptar 90 - 110	nce Range
Parameter Chromium	Unit ug/L	DF 1.00	Result 9.72	Expected 10.0		ecovery 97.2	Acceptar 90 - 110	ice Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&I

PG&E Topock Project

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Project Number: 424973.01.DM

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Total Dissolved Solids b	•		_					
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801606-001 Total Dissolved S	Solids	mg/L	05/18	3/2012	1.00	0.400	250.	4070
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	801604-005
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	324	312		3.77	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	501	500.		100.	•	
Turbidity by CM 2420 D			Ratch	05TUC12L				
Turbidity by SM 2130 B					D.E.	MOL	5.	5
Parameter		Unit	Analyzed		DF	MDL	RL	Result
801606-001 Turbidity		NTU	05/16	/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	801606-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	_
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	d Recovery		Accepta	nce Range
Turbidity	NTU	1.00 8.46 8.0		8.00		106.	90 - 110	-
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.36 8.00			104.	90 - 110	



Client: E2 Consulting Engineers, Inc.

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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12G Date Analyzed: 5/22/12

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	110.7304	110.7307	110.7305	0.0002	No	0.0001	1.0	25.0	ND	1
801584-1	100	68.8405	68,8976	68.8976	0.0000	No	0.0571	571.0	25.0	571.0	1
801584-2	100	69.3457	69.403	69,4028	0.0002	No	0.0571	571.0	25.0	571.0	1
801603-1	100	65.9481	65.982	65.982	0.0000	No	0.0339	339.0	25.0	339.0	1
801603-2	100	67.7749	67.8090	67.8089	0.0001	No	0.0340	340.0	25.0	340.0	1
801603-3	100	67.7169	67.7464	67.7462	0.0002	No	0.0293	293.0	25.0	293.0	1
801603-4	100	68.1028	68.128	68.128	0.0000	No	0.0252	252.0	25.0	252.0	1
801604-1	100	68.0327	68.0815	68.0815	0.0000	No	0.0488	488.0	25.0	488.0	1
801604-3	100	67.4834	67.5118	67.5116	0.0002	No	0.0282	282.0	25.0	282.0	1
801604-4	100	74.7342	74.7598	74.7597	0.0001	No	0.0255	255.0	25.0	255.0	1
801604-5	100	67.7871	67.8183	67.8183	0.0000	No	0.0312	312.0	25.0	312.0	1
801604-5D	100	92.0995	92.1319	92.1319	0.0000	No	0.0324	324.0	25.0	324.0	1
LCS	100	110.3321	110.3823	110.3822	0.0001	No	0.0501	501.0	25.0	501.0	1
801604-6	100	100.6770	100.705	100.705	0.0000	No	0.0280	280.0	25.0	280.0	1
801604-7	100	112.9704	112.9987	112.9987	0.0000	No	0.0283	283.0	25.0	283.0	1
801604-8	100	110.3667	110.4185	110.4182	0.0003	No	0.0515	515.0	25.0	515.0	1
801606	10	47.9638	48.0045	48.0045	0.0000	No	0.0407	4070.0	250.0	4070.0	1
801652-1	50	47.9544	48.0101	48.01	0.0001	No	0.0556	1112.0	50.0	1112.0	1
801652-2	50	46.9976	47.0426	47.0424	0.0002	No	0.0448	896.0	50.0	896.0	1
801652-3	50	51.0745	51.1046	51.1043	0.0003	No	0.0298	596.0	50.0	596.0	1
801652-5	100	115.2361	115.2962	115.2959	0.0003	No	0.0598	598.0	25.0	598.0	1
801652-6	100	103.4165	103.4663	103.4663	0.0000	No	0.0498	498.0	25.0	498.0	1
801653	100	104.2370	104.2648	104.2648	0.0000	No	0.0278	278.0	25.0	278.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

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

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

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

Laboratory Control Sample (LCS) Summary

Laboratory	COILLOI GA	mple (EGG	, Cummary		
QC Std I,D,	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	501	500	100.2%	90-110%	Yes
LCSD	19				

Duplicate Determinations Difference Summary

Lab Sample Number Weight, g		Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801604-5	0.0312	0.0324	1.9%	≤5%	Yes

LCS Recovery

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

C = Average weight in (g).

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12G
Date Analyzed: 5/22/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
		:		
801584-1	926	0.62	601.9	0.95
801584-2	938	0.61	609.7	0.94
801603-1	521	0.65	338.65	1.00
801603-2	521	0.65	338.65	1.00
801603-3	467	0.63	303.55	0.97
801603-4	416	0.61	270.4	0.93
801604-1	821	0.59	533.65	0.91
801604-3	477	0.59	310.05	0.91
801604-4	477	0.53	310.05	0.82
801604-5	530	0.59	344.5	0.91
801604-5D	530	0.61	344.5	0.94
LCS				
801604-6	421	0.67	273.65	1.02
801604-7	420	0.67	273	1.04
801604-8	795	0.65	516.75	1.00
801606	7320	0.56	4758	0.86
801652-1	1664	0.67	1081.6	1.03
801652-2	1553	0.58	1009.45	0.89
801652-3	1006	0.59	653.9	0.91
801652-5	976	0.61	634.4	0.94
801652-6	820	0.61	533	0.93
801653	432	0.64	280.8	0.99





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-361]

801606

COC Number

TURNAROUND TIME	10	Days		
DATE 05/15/12	PAGE	1_	OF	1

******			4 4																		
COMPANY	E2																			/	COMMENTS
PROJECT NAME	PG&E Topock							/ /	/	/ /	/		/	/					//	' /	,
PHONE	(530) 229-3303	FAX (530) 339-3303		/	/ /	/ /	' /					/ /	<i>'</i> /	/ /	/ /	/ /	/ /	/ /_	/	
ADDRESS	155 Grand Ave Ste 100	00					<u>,</u> /=	. /	/		/								CONTAINERS	/	
	Oakland, CA 94612				8	1	1.2	/ /	/	/ /	/	/		/	/				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
P.O. NUMBER	424973.01.DM		FEAM	/	b Filtered	100/			/;	(R)		/	/ /	, /	/ /	/ /	/ /	/			
SAMPLERS (SIGNA	TURE	que		/ / 8	967 (0:50 Egg	Sels (2)	upuos MD 642												TEROF.		
SAMPLE I.D.	DATI	TIM	IE DESCRIPTION	Cr6 (278 g)	Total Metrol	Specific	TDS (SMPs.c.	/ /,	Purbidity (SM32.	/ /	' /	/	/ /	/				NUMBE			
SC-700B-WDF	R-361 05/15/	12 15:	07 Water	х	х	х	х	ALL REPORTS AND AND ASSESSMENT	х									3			DH=6(200.7
<u> </u>		•	Annual Control of the													; **		3	ТОТА	L NUM	BER OF CONTAINERS



For Sample Conditions
See Form Attached

	CHAIN C	F CUSTODY SI	GNATURI	E RECORD			S	AMPLE (CONDITI	ONS	
Signature (Relinquished)	us Kingut Printer	Chris Knight	Company/ Agency	CH2MML	Date/ 5-15-12 Time [517	RECEIVED	COOL	1	WARN	1 <u> </u>	Z €
Signature (Received) /3 - 04	Printe Mag Name	0 0	Company/ Agency	TUI	Date/ 5-15-1ン Time /517	CUSTODY SEA	ALED	YES		NO O	
Signature (Relinquished) 3.00	Printer Name		Company/ Agency	741	Date: 5-15-12 Time 2030	SPECIAL REQUIRE	MENTS:				
Signature Signature	Printe Name	Shabuning	Company/ Agency	TL I	Date/ 5/15/12 2013	4					
Signature (Relinquished)	Printe Name	:	Company/ Agency		Date/ Time						
Signature (Received)	Printe Name	1	Company/ Agency		Date/ Time						

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

D. /					i i	T
Date	Lab Number	Initial pH	Buffer Added (mL)		Time Buffered	Initials
3/16/12	801605-3	9.5	N/A	MIA	MA	6
	1 -7					
	· -/0	7		1	1	1
5/16/12	8=1603-1	9.5	\sqrt{A}	NA	NA	0
Ì	-2				1	j
	-3					
	1-4					
5/16/12	801604-1	9.5	NA	.//Δ	-//^	7
110110			17 / 1	N/A	- N/A	(Jew)
	-2				——————————————————————————————————————	
	-1 -2					
·						
	-6					
	<u> </u>					
5/16/12	_ 1 -8	4	. 1	1	1	العاد
5/16/12	801606	7	2 mL	9.5	11 Am	Fu
-						
					3	
					-	
·						

M/4 C04/11-112 Turbidity/pH Check

			r i			Adjusted to
Sample Number	Turbidity	рH	Date	Analyst	Need Digest	pH<2 (Y/N)
80 1497	<1	12	5-10-12	BĿ	725	3610A
501488		>2			W.O.	xes 10:11
20 1500	71	\Z			xes	3410A
80 150361-10)	< 1	12			No	₩0
801504 (1-10)						1
801505(1-10)						
80150611-143)				1		
80 1508	₹1	<2	9-11-12	BL	No	No
80 1513	>1				XCS	3010A
801525	\(\lambda\)				Į Į	1
801527(1-151	<u> </u>		,	1	No	No
80 15 36(1-21)	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	42	5-14-12	BE	₩0	No
80 (537 (1-21)		1		1		
80 1517						
80 1526(3-12)					Yes	3010A
801543	<'\	1 2			No	Na
80 15461-4					×cs	3-104
80 1547						
80 1548(1-3)		72		- * 1		xes 15.0
80 1554		<u>رح</u>	- ·	1	N O	NO
80 1555		1	1			i.
80 156161-2,47	<1) 2	5-15-12	BE	No	yes ilion
80 1582		>2		1	1	14100
89 15 78	71	<2 <2	 		Xes	30/079
80 1580(1-37)	<u> </u>	72			Ne	Xes 20:00
801581(1-104)		1 1 2			No	No
T 8016034-4)	<1	1 < 2	5-16-12	BE	yes	30\0A
01380 1603 (1-4)		1	1			Í
		-				
80 1605(1-11 80 1604(193-8)			 			
		72		-		
7 80 1606		₹2	 		No	NO
20 159 \ 20 1643	<u>۷</u>	<2	5-17-12	BE	No	No
		1	1	1 1	y'c5	3010A
80 1652(15-3)		-				i.
801653(1,0)		+	 		No.	No
301641(11-13		>2				Jes 18:39
20 1646 (1-33)		1			1	
80 1647 (1-15		 	+	 	 	19:00
80 1647 (1-54)		 	 	1		
801649(1-54)		 	-		+	
801669 (1-9)		+	+	 	+	NO
801675(1-182)			 	 	+	+
801676L1-10)		 	-			
801677(1-10)	<u> </u>	*	<u> </u>	<u> </u>	— ~	V
	 				 	
		 		 		
		+				
		+				
	1	1				



Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>EL</u>	Lab #	801606
Date	e Delivered:ℓ <u>0</u> 5/ <u>15</u> /12 Time:ጲ <u>0/3</u> 0 By: □Mail ⊠F	ield Service	□ Client
1.	Was a Chain of Custody received and signed?	⊠¥es □N	o □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □N	o ÆN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No	D ZAN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No	D ANA
<i>5</i> .	Were all requested analyses understood and acceptable?	,⊠Yes □No	o □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? څ ^ک ه C	d Yes □No	o □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	⊠Yes □No	o □N/A
8.	Were sample custody seals intact?	□Yes □No	Ð ØKVA
9.	Does the number of samples received agree with COC?	∄ Yes □No	o □N/A
10.	Did sample labels correspond with the client ID's?	∭⊒2Yes □No	
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No	AZÎN/A
12.	Were samples pH checked? pH = See C. O. C	QaYes □No	DN/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): ロ RUSH	ØYes □No	□N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground V □Sludge □Soil □Wipe □Paint □Solid Ø□	111	ste Water LLK
16.	Comments:		
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	dulla	

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 17, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-362 PROJECT, GROUNDWATER

MONITORING, TLI No.: 801750

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-362 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 May 22, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

` _ N

Mona Nassimi

Manager, Analytical Services

Michael to

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801750

Date: June 17, 2012 Collected: May 22, 2012 Received: May 22, 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 / Maksim Gorbunov

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Laboratory No.: 801750

Date Received: May 22, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801750-001	SC-700B-WDR-362	F120.1	NONE	5/22/2012	13:30	EC	7420	umhos/cm	2.00
801750-001	SC-700B-WDR-362	E200.8	NONE	5/22/2012	13:30	Chromium	ND	ug/L	1.0
801750-001	SC-700B-WDR-362	E200.8	NONE	5/22/2012	13:30	Manganese	3.1	ug/L	1.0
801750-001	SC-700B-WDR-362	E218.6	LABFLT	5/22/2012	13:30	Chromium, hexavalent	ND	ug/L	1.0
801750-001	SC-700B-WDR-362	SM2130B	NONE	5/22/2012	13:30	Turbidity	ND	NTU	0.100
801750-001	SC-700B-WDR-362	SM2540C	NONE	5/22/2012	13:30	Total Dissolved Solids	4230	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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Printed 6/17/2012

Laboratory No. 801750

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 5/22/2012 9:30:00 PM

Field ID				Lab ID	Collected	Matrix
SC-700B-WDR-362				801750-001	05/22/2012 13:30	Water
Specific Conductivity - E	PA 120.1		Batch	05EC12H		
Parameter		Unit	Ana	llyzed	DF MDL	RL Result
801750-001 Specific Conduct	ivity	umhos	/cm 05/25	5/2012	1.00 0.0950	2.00 7420
Method Blank						
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND			Lab ID = 801753-009
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result 901	Expected 901	RPD 0.00	Acceptance Range 0 - 10 Lab ID = 801775-005
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 908	Expected 908	RPD 0.00	Acceptance Range 0 - 10
Parameter Specific Conductivity Lab Control Sample D	Unit umhos uplicate	DF 1.00	Result 707	Expected 706	Recovery 100.	Acceptance Range 90 - 110
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 710.	Expected 706	Recovery 100.	Acceptance Range 90 - 110
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 706	Expected 706	Recovery 100.	Acceptance Range 90 - 110
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 984	Expected 998	Recovery 98.6	Acceptance Range 90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch 05CrH12R

Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
801750-001 Chromium, Hexavalent		ug/L	05/24/	/2012 18:13	5.00	0.130	1.0	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	801753-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 0.0360	Expected 0.0419		RPD 15.1	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.196	Expected 0.200		Recovery 98.0	Accepta 70 - 13	ance Range 0
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.89	Expected 5.00		Recovery 97.8	90 - 11	ance Range 0 : 801750-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 4.56	Expected/Ad 5.00(5.00)	ded	Recovery 91.3	90 - 11	ance Range 0 : 801750-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.02	Expected/Ad 1.06(1.00)	lded	Recovery 95.6	90 - 11	ance Range 0 : 801753-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Ad 1.04(1.00)	lded	Recovery 96.3	90 - 11	ance Range 0 : 801753-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 01000	Expected/Ad 1.04(1.00)	lded	Recovery 96.4	90 - 11	ance Range 0 : 801753-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.05	Expected/Ad 1.04(1.00)	lded	Recovery 102.	90 - 11	ance Range 0 : 801753-004
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.02	Expected/Ac 1.04(1.00)	lded	Recovery 97.3	Accept 90 - 11	ance Range 0



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Total	Batch	061312A
rectars by Erin Louis, rotar		

Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
801750-001 Chromium		ug/L	06/13/2012 15:34		.00	0.195	1.0	ND
Manganese		ug/L	06/13	/2012 15:34 5	5.00 0.270		1.0	3.1
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration V	erification/							
Parameter	Unit	DF	Result	Expected	R	Recovery	•	ance Range
Chromium	ug/L	1.00	0.206	0.200		103.	70 - 130)
Manganese	ug/L	1.00	0.214	0.200		107.	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	104.	100.		104.	85 - 11	5
Manganese	ug/L	5.00	101.	100.		101.	85 - 11	5
Matrix Spike							Lab ID =	801750-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	•	ance Range
Chromium	ug/L	5.00	104.	100.(100.)		104.	75 - 12	
Manganese	ug/L	5.00	104.	103.(100.)		100.	75 - 12	5
Matrix Spike Duplicate							Lab ID =	801750-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	•	ance Range
Chromium	ug/L	5.00	105.	100.(100.)		105.	75 - 12	
Manganese	ug/L	5.00	106.	103.(100.)		103.	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Range
Chromium	ug/L	1.00	9.80	10.0		98.0	90 - 11	0
Manganese	ug/L	1.00	9.66	10.0		96.6	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Chromium	ug/L	1.00	10.4	10.0		104.	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Range
Chromium	ug/L	1.00	10.3	10.0		103.	90 - 11	0



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Total Dissolved Solids b	y SM 254	0 C	Batch	05TDS12I				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801750-001 Total Dissolved S	Solids	mg/L	05/24	/2012	1.00	0.400	250.	4230
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	801750-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4210	Expected 4230		PD 0.474	Accepta 0 - 5	nce Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 496	Expected 500.		ecovery 99.2	Accepta 90 - 110	ince Range)
Turbidity by SM 2130 B Parameter		Unit		05TUC12P lyzed	DF	MDL	RL	Result
801750-001 Turbidity		NTU	05/23	3/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity Duplicate	Unit NTU	DF 1.00	Result ND				Lab ID =	801750-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	R	RPD 0	Accepta 0 - 20	ance Range
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result 8.51	Expected 8.00	R	Recovery 106.	Accepta 90 - 110	ance Range)
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.69	Expected 8.00	R	Recovery 109.	Accepta 90 - 110	ance Range



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

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Project Number: 424973.01.DM

Printed 6/17/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12I Date Analyzed: 5/28/12

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL,	Reported Value, ppm	DF
Blank	100	65.6692	65.6697	65.6693	0.0004	No	0.0001	1.0	25.0	ND	1
801715	50	48.1308	48.1747	48.1743	0.0004	No	0.0435	870.0	50.0	870.0	1
801747-1	100	72.8157	72.8635	72.8635	0.0000	No	0.0478	478.0	25.0	478.0	1
801747-2	100	73.1841	73.2425	73.2422	0.0003	No	0.0581	581.0	25.0	581.0	1
801747-3	50	51.5099	51.5464	51.5464	0.0000	No	0.0365	730.0	50.0	730.0	1
801747-4	100	76.5120	76.5464	76.5461	0.0003	No	0.0341	341.0	25.0	341.0	1
801747-5	100	66.8065	66.8578	66.8575	0.0003	No	0.0510	510.0	25.0	510.0	1
801747-6	100	75.4475	75.4963	75.4963	0.0000	No	0.0488	488.0	25.0	488.0	1
801747-7	100	72.4663	72.504	72.504	0.0000	No	0.0377	377.0	25.0	377.0	1
801747-8	50	51.0636	51.1005	51.1003	0.0002	No	0.0367	734.0	50.0	734.0	1
801750	10	49.3276	49.3701	49.3699	0.0002	No	0.0423	4230.0	250.0	4230.0	1
801750D	10	51.4867	51.5292	51.5288	0.0004	No	0.0421	4210.0	250.0	4210.0	· 1
LCS	100	68.3092	68.3592	68.3588	0.0004	No	0.0496	496.0	25.0	496.0	1
801751-1	10	47.7657	47.8091	47.8089	0.0002	No	0.0432	4320.0	250.0	4320.0	1
801751-2	10	50,1280	50.1741	50.174	0.0001	No	0.0460	4600.0	250.0	4600.0	1
801751-3	10	47.5160	47.5582	47.5582	0.0000	No	0.0422	4220.0	250.0	4220.0	1
801799	50	51.1893	51.2345	51.2342	0.0003	No	0.0449	898.0	50.0	898.0	1
801814	50	49.6816	49.7629	49.7629	0.0000	No	0.0813	1626.0	50.0	1626.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Contral?
LCS1	496	500	99.2%	90-110%	Yes
LCSD	Para edua.				

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801750	0.0423	0.0421	0.2%	≤5%	Yes
	day g				

Jenny T.

Analyst Printed Name

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12I Date Analyzed: 5/28/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801715	1207	0.72	784.55	1.11
801747-1	795	0.60	516.75	0.93
801747-2	942	0.62	612.3	0.95
801747-3	1214	0.60	789.1	0.93
801747-4	555	0.61	360.75	0.95
801747-5	872	0.58	566.8	0.90
801747-6	755	0.65	490.75	0.99
801747-7	644	0.59	418.6	0.90
801747-8	1218	0.60	791.7	0.93
801750	7450	0.57	4842.5	0.87
801750D	7450	0.57	4842.5	0.87
LCS				
801751-1	7580	0.57	4927	0.88
801751-2	7640	0.60	4966	0.93
801751-3	7600	0.56	4940	0.85
801799	1468	0.61	954.2	0.94
801814	2600	0.63	1690	0.96
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s **801750**

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-362]

COC Number

TURNAROUND TIME DATE 05/22/12 10 Days

PAGE 1 OF 1

										***************************************	₩										
COMPANY	E2						7	//	7 7	/ /	Τ,	/ /	$\overline{}$	/	$\overline{}$	$\overline{}$	7	7		COMMENTS	
PROJECT NAME	PG&E Topock							//		//								//	/ /	OOMINENTO	
PHONE	(530) 229-3303	}	FAX (530) 339-3303		/	/ ,	/ /	/ /	/ /			/	/ /	/ /	/ /	/ ,	/ /			
ADDRESS	155 Grand Ave	Ste 1000	panak						/ /	/ /	/ ,	/ /	' /					CONTAINERS	/		
	Oakland, CA 94	4612	04/18/04/19			/8	/ *	(120,1)		//								1 AF	•		
P.O. NUMBER	424973.01.DM		TEAN	1	/	6 Filtered	(200.7)	ctance (/ /	(g)			/ ,	/ /	/ /	/ /	/ /				
SAMPLERS (SIGNA	TURE	lut				F 1 F	S /	TDS (SM2540C)	/ / [(0E12NIC)	/ /	/ /					$-I_{\delta}$	40 g;			
					6/2186,	Total Mat		18/8	^T urbidin,]						/	NUMBEL				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	8	120	/ જે	/ <i>¤</i> /	/ 🖓								<u>L</u>				
SC-700B-WDF	362	05/22/12	1330	Water	х	Х	х	х	х								3			DU = 6 (20	7. ص
				<u> </u>													3	TOTA	L NUMB	/ ER OF CONTAINERS	;



For Sample Conditions See Form Attached

C	HAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed ALOC	Company CH2 m H H Agency	Date/ 5-22-12 Time / 500	received cool $lacksquare$ warm $lacksquare$
Signature (Received)	Printed Name	Company/ Agency	Date/ 5 _ 22 - 1 2 Time / 5 : 0 5	CUSTODY SEALED YES NO [2]
Signature (Relinquished)	Printed A polito	Company/ Agency	Date/ターセス・/ラ Time センショ	SPECIAL REQUIREMENTS:
Signature (Received) Linka	Printed Suabuning	Company/ Agency 77 J	Date/ 5/22/12 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

Date	Lab	Number	Initi	al pH	Buffer A	dded (mL)	Fin	al pH	Time E	Buffered	lni	tials
5/23/12	801	147-1	٩	.5	N	IA	N	(A		IIA	(
11		-2				-		ſ		1		ſ
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5/23/12	80	750	•	1	ユ	mL	٩.	S	(0:3	c Am	3	~/
5/23/12	801	753-1	٩	.5	<i>N</i>	A	N	/A	N	A	(}	لما
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SI3-112

Turbidity/pH Check Adjusted to Sample Number | Turbidity Hq Date **Analyst Need Digest** pH<2 (Y/N) 80 1714 21 5-22-12 BE NO NO 80 LT15 LD9T) 3010 A yes 30 1725 No No 80 1726 80 1727 801728 80 1729 71 Xes 30la A 8-1730 8a (73) 8017476-8) < \ くて 5-23-12 BE 3010A x cs 801750 >2 xe5 10100 5 80 1751 U-3 needfilt 801752[1-4) <2 D 801753 (1-14) 801775 CI-11) To ぐい くて 5-24-12 BL xes BOLOA 801737 11-3 72 Xes No 11:00 AM 801764 (10-12) 801767 42 **~**° 301790 (1-10) 801791L1-10) 80 1792 (1-10) 8017934-72) >2 X 05 Q1715 3/25/12 wsing 41 72 1 HQ per SO 1747 (1-7) J 30 1799 72 5/29+12 **<**\ BE No ycs 18:00 80 1818 **٧**2 ۲ĭ NO 801828 80 1827 80 1839 LO) < \ くて 5-30-12 BE xcs 3 - 1. A 801840 (T) >2 yes it: 00 801841 U-2) くこ ١ ﴿ \$9 1845(1-12) ۲۱ >2 > 45 18:30 No 801848 >1 <2 ye5 BroloA A 801849(1-12) **< 1** 72 No Xes 18:30 831860(-1-3) < 1 \rightarrow_2 5/31/12 KK NO 1050 CORM BE 5-31-12 801871 71 < 2 x BB 5.31/12 BE y es 3418A XES 5018830-5 <1 <2 6-1-12 BE NO NO 80 1892 くて < \ 6-5-12 BL Ne Νe 801893 80189861-2) 72 y < 5 1100 80 1910-6 801907 12 205 30104 801908 501909(1-3) 301912(1-10) Na Na 8-19 1361-10 801914 **≥** i 12 xes 30107 801915

80 1918

No

NQ



Sample Integrity & Analysis Discrepancy Form

Clier	nt: <u>EL</u>	Lab # <u>ੁ</u> ਿ	101750
Date	Delivered: US/2L/12 Time: 2/30 By: □Mail ØF	ield Service	□Client
1.	Was a Chain of Custody received and signed?	⊠ (Yes □No	D □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No	Z N/A
3.	Are there any special requirements or notes on the COC?	□Yes □No	ØN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No	Z NA
5.	Were all requested analyses understood and acceptable?	علives □No	□N/A
5 .	Were samples received in a chilled condition? Temperature (if yes)? <u>' ° C</u>	⊠ Yes □No	□ <i>N/A</i>
' .	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ÁlYes □No	□ <i>N/A</i>
}.	Were sample custody seals intact?	□Yes □No	ØŃ/A
).	Does the number of samples received agree with COC?	AYes □No	□N/A
0.	Did sample labels correspond with the client ID's?	∠ Yes □No	□N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail Client	□Yes □No	∂ ∆ N/A
2.	Were samples pH checked? pH = Set Clare	7 dYes □No	□N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Yes DNo	□N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH Æ Std	∠ Yes □ No	□ <i>N/A</i>
5.	Sample Matrix: □Liquid □Drinking Water □Ground V □Sludge □Soil □Wipe □Paint □Solid Ø		
6.	Comments:		
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	L Shal	Ruccio

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 19, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-363 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 801840

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-363 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 May 29, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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 sample duplicate for Total Dissolved Solids by SM 2540C had a relative percent difference of 5.79%, which exceeded the acceptance limits of 0 - 5%. Mr. Duffy was notified and accepted the data.

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 Algo

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801840

Date: June 19, 2012 **Collected:** May 29, 2012

Received: May 29, 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 / Maksim Gorbunov

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Laboratory No.: 801840 Date Received: May 29, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801840-001 801840-001 801840-001 801840-001 801840-001	SC-700B-WDR-363 SC-700B-WDR-363 SC-700B-WDR-363 SC-700B-WDR-363 SC-700B-WDR-363 SC-700B-WDR-363	E120.1 E200.8 E200.8 E218.6 SM2130B SM2540C	NONE NONE NONE LABFLT NONE NONE	5/29/2012 5/29/2012 5/29/2012 5/29/2012 5/29/2012 5/29/2012	14:00 14:00 14:00 14:00 14:00 14:00	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids	7830 ND 3.0 0.27 ND 4530	umhos/cm ug/L ug/L ug/L NTU mg/L	2.00 1.0 1.0 0.20 0.100 250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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Printed 6/19/2012

Laboratory No. 801840

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 5/29/2012 9:00:00 PM

Field ID Lab ID Collected Matrix SC-700B-WDR-363 801840-001 05/29/2012 14:00 Water Batch 05EC12K Specific Conductivity - EPA 120.1 Unit DF **MDL** Parameter Analyzed RL Result 801840-001 Specific Conductivity umhos/cm 05/31/2012 1.00 0.0950 2.00 7830 Method Blank Unit DF Parameter Result Specific Conductivity umhos 1.00 ND Duplicate Lab ID = 801840-001 **RPD** Parameter Unit DF Result Expected Acceptance Range Specific Conductivity 7820 7830 0.128 0 - 10umhos 1.00 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 701 706 99.3 90 - 110Specific Conductivity umhos 1.00 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range Specific Conductivity 1.00 990. 998 99.2 90 - 110 umhos



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 2 of 8 Printed 6/19/2012

Chrome VI by EPA 218.6

Batch 05CrH12U

Parameter	gelääle en en en	Unit	Ana	lyzed [OF MDL	RL	Result
801840-001 Chromium, Hexa	avalent	ug/L	05/30	/2012 15:46 1	00 0.0250	0.20	0.27
Method Blank							
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result N D			1 ah 10 -	004777 004
•	1.1 54	D.E.	.				801775-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L	DF 1.00	Result 0.0420	Expected 0.0458	RPD 8.66	Accepta 0 - 20	ince Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.194	Expected 0.200	Recovery 97.0	Accepta 70 - 130	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.85	Expected 5.00	Recovery 97.1	90 - 110	nce Range 801775-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.986	Expected/Added 1.04(1.00)	d Recovery 94.0	90 - 110	nce Range 801775-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.980	Expected/Added 1.04(1.00)	Recovery 94.3	90 - 110	nce Range 301775-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Added	Recovery 97.5	90 - 110	nce Range 801775-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.00	Expected/Added	Recovery 97.2	Accepta 90 - 110	nce Range 301775-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.992	Expected/Added 1.04(1.00)	Recovery 95.2	90 - 110	nce Range 801775-006
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.01	Expected/Added 1.04(1.00)	Recovery 96.3	Acceptar 90 - 110	nce Range



Client: E2 Consulting Eng	jineers, Inc		roject Name: roject Numbe	PG&E Topock Pror: 424973.01.DM	oject	Page 3 of 8 Printed 6/19/2012
Matrix Spike						Lab ID = 801775-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.999	Expected/Added 1.04(1.00)	Recovery 95.9	Acceptance Range 90 - 110 Lab ID = 801775-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.01	Expected/Added 1.04(1.00)	Recovery 97.0	Acceptance Range 90 - 110 Lab ID = 801775-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.01	Expected/Added 1.04(1.00)	Recovery 97.6	Acceptance Range 90 - 110 Lab ID = 801775-010
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.993	Expected/Added 1.03(1.00)	Recovery 96.4	Acceptance Range 90 - 110 Lab ID = 801775-011
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.994	Expected/Added 1.04(1.00)	Recovery 95.4	Acceptance Range 90 - 110 Lab ID = 801839-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 0.837	Expected/Added 1.00(1.00)	Recovery 83.7	Acceptance Range 90 - 110 Lab ID = 801839-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 4.74	Expected/Added 5.00(5.00)	Recovery 94.7	Acceptance Range 90 - 110 Lab ID = 801840-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.26	Expected/Added 1.27(1.00)	Recovery 99.0	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.87	Expected 5.00	Recovery 97.4	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.92	Expected 10.0	Recovery 99.2	Acceptance Range 95 - 105



Client: E2 Consulting Engineers, Inc.

Chromium

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Total Batch 061312A Parameter Unit DF MDL Analyzed RL Result 801840-001 Chromium ug/L 06/13/2012 16:17 5.00 0.195 1.0 ND Manganese ug/L 06/13/2012 16:17 5.00 0.270 1.0 3.0 Method Blank Parameter Unit DF Result Chromium ug/L 1.00 ND ug/L ND Manganese 1.00 Low Level Calibration Verification Parameter Unit DF Result Expected Recovery Acceptance Range Chromium ug/L 1.00 0.206 0.200 103. 70 - 130 Manganese ug/L 1.00 0.214 0.200 107. 70 - 130Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range 5.00 104. 100. Chromium ug/L 104. 85 - 115 5.00 100. 101. Manganese ug/L 101. 85 - 115 Matrix Spike Lab ID = 801750-001 Parameter Unit DF Result Expected/Added Recovery Acceptance Range Chromium ug/L 5.00 104. 100.(100.) 104. 75 - 125 Manganese ug/L 5.00 104. 103.(100.) 100. 75 - 125 Matrix Spike Duplicate Lab ID = 801750-001 Parameter Unit DF Result Expected/Added Recovery Acceptance Range Chromium ug/L 5.00 105. 105. 100.(100.) 75 - 125 Manganese ug/L 5.00 106. 103.(100.) 103. 75 - 125 MRCCS - Secondary Parameter Unit DF Result Expected Recovery Acceptance Range Chromium ug/L 1.00 9.80 10.0 98.0 90 - 110 Manganese ug/L 1.00 9.66 10.0 96.6 90 - 110 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range 1.00 10.4 10.0 Chromium ug/L 104. 90 - 110 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range

10.0

103.

90 - 110

10.3

ug/L

1.00



Client: E2 Consulting Engineers, Inc.

Project Name:

PG&E Topock Project

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Project Number: 424973.01.DM

Printed 6/19/2012

Total Dissolved Solids								D 16
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801840-001 Total Dissolved	Solids	mg/L	05/30	/2012	1.00	0.400	250.	4530
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	801840-001
Parameter	Unit	DF	Result	Expected	F	RPD		ince Range
Total Dissolved Solids	mg/L	1.00	4800	4530		5.79	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery Acceptance		ince Range
Total Dissolved Solids	mg/L	1.00	499	500.		99.8	90 - 110)
			Detab	OETHO42T				
Turbidity by SM 2130 B				05TUC12T				:::::::::::::::::::::::::::::::::::
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801840-001 Turbidity		NTU	05/30	/2012	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	801840-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Parameter Unit		Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.50	8.00		106.	90 - 110)
Lab Control Sample	Duplicate							
					_	_		
Parameter	Unit	DF	Result	Expected	ŀ	Recovery 104.	90 - 110	ince Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 6/19/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12J Date Analyzed: 5/31/12

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
100	112.3586	112.3588	112.3587	0.0001	No	0.0001	1.0	25.0	ND	1
250	108.6841	108.6865	108.6864	0.0001	No	0.0023	9.2	10.0	ND	11
10	50.4214	50.4667	50.4667	0.0000	No	0.0453	4530.0	250.0	4530.0	1
10	47.9040	47.9523	47.952	0.0003	No	0.0480	4800.0	250.0	4800.0	1
100	105.2584	106.3087	105.3083	0.0004	No	0.0499	499.0	25.0	499.0	1
ļ						-				
	100 250 10 10	100 112.3586 250 108.6841 10 50.4214 10 47.9040	100 112.3586 112.3588 250 108.6841 108.6865 10 50.4214 50.4667 10 47.9040 47.9523	100 112.3586 112.3588 112.3587 250 108.6841 108.6865 108.6864 10 50.4214 50.4667 50.4667 10 47.9040 47.9523 47.952	100 112.3586 112.3588 112.3587 0.0001 250 108.6841 108.6865 108.6864 0.0001 10 50.4214 50.4667 50.4667 0.0000 10 47.9040 47.9523 47.952 0.0003	100 112.3586 112.3588 112.3587 0.0001 No 250 108.6841 108.6865 108.6864 0.0001 No 10 50.4214 50.4667 50.4667 0.0000 No 10 47.9040 47.9523 47.952 0.0003 No	100 112.3586 112.3588 112.3587 0.0001 No 0.0001 250 108.6841 108.6865 108.6864 0.0001 No 0.0023 10 50.4214 50.4667 50.4667 0.0000 No 0.0453 10 47.9040 47.9523 47.952 0.0003 No 0.0480 100 105.2584 105.3087 105.3083 0.0004 No 0.0499	100	100 112.3586 112.3588 112.3587 0.0001 No 0.0001 1.0 25.0 250 108.6841 108.6865 108.6864 0.0001 No 0.0023 9.2 10.0 10 50.4214 50.4667 50.4667 0.0000 No 0.0453 4530.0 250.0 10 47.9040 47.9523 47.952 0.0003 No 0.0480 4800.0 250.0 100 105.2584 105.3087 105 3083 0.0004 No 0.0499 499.0 25.0	100 112.3586 112.3588 112.3587 0.0001 No 0.0001 1.0 25.0 ND 250 108.6841 108.6865 108.6864 0.0001 No 0.0023 9.2 10.0 ND 10 50.4214 50.4667 50.4667 0.0000 No 0.0453 4530.0 250.0 4530.0 10 47.9640 47.9523 47.952 0.0003 No 0.0480 4800.0 250.0 4800.0 100 105.2584 105.3087 105.3083 0.0004 No 0.0499 499.0 25.0 499.0 25.0 25.0 25.0 25.0 25.0 25.0 25.0 25

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	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	499	500	99.8%	90-110%	Yes
LCSD			ļ		

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802750	0.0453	0.048	2.9%	≤5%	Yes
Chluss	Print Francis				

Jenny T.

Analyst Printed Name

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Норе Т.

Reviewer Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12J
Date Analyzed: 5/31/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
	,		4	
801822	10	ND	6.5	ND
801840	7880	0.57	5122	0.88
801840D	7880	0.61	5122	0.94
LCS				
	The second secon			
			}	
			-	
		+		
			1	
				<u> </u>
	A RECEIVED OF STREET			

St.

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-363]

801840

COC Number

TURNAROUND TIME 10 Days
DATE 05/29/12 PAGE 1 OF

											-	4 40	9 %	•							-		
COMPANY	E2						7	7	7	7	/ /	/	7	/	7	7	7	7	$\overline{}$	7	7	COMMENT	re
PROJECT NAME	PG&E Topock								//	/	/ 1	ec'a	1 0	5/29/	/12					/ /		COMMEN	15
PHONE	(530) 229-3303		FAX (530	339-3303			/ ,	/ /	/ /		/		B 0,			n /	/ /	/ ,	/ /	/			
ADDRESS	155 Grand Ave	Ste 1000					<i>'</i> /.	10 to 10 to	. /		/ 7	/124	, U a	1/		J/			CONTAINED	ž/			
	Oakland, CA 94	4612				/29	, / ų	. / N		/	/ /								NE STATE	/			
P.O. NUMBER	424973.01.DM		TEAM	_1_		b Fillered	/2.0g	ctal/co	/ 	/	130/	/	/ ,	/ /	/ /	/ /	/	/ /	4.	ŗ			
SAMPLERS (SIGN.	ATURE ATURE				Cr6 (218.5.	7/6/	Specific (200.7)	TDS (SM2E)	Ø /	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	(0E)130)								\circ /				
					27/2) tal		88	/ /	'Irbidit]						/	NUMBE	7				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	10	[]	100		/ / /										<u></u>				
SC-700B-WDI	R-363	05/29/12	1400	Water	х	х	х	х		х								3			DH-	6620	בי.ש)
															-,			3	тот	AL NUM	BER OF	CONTAIN	IERS
																			Ł				



For Sample Conditions See Form Attached

CHCH	IAIN OF CUSTODY SIG	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name SouthEurs	Company/ Agency OM/	Date/ 5-29-12 Time 15/5	RECEIVED COOL TY WARM 1 4.80°
Signature (Received)	Printed Name /// // // // // // // // // // // // /	Company/ Agency	Date/ 5-29-12 Time 15:15	CUSTODY SEALED YES 🔲 NO 🗹
Signature (Relinquished)	Printed #1 10 / Le	Company/ Agency	Date/ 5-29-13 Time 2/03	SPECIAL REQUIREMENTS:
Signature Afida (Received)	Printed Guabum na	Company/ 7 L 1	Date/ 5/19/13/100 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

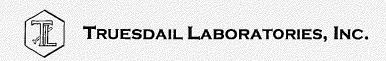
Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
5/30/12	801840	7	2 mL	9.5	10 Am	/ /
5/3/12	801839	9.5	NIA	NIA	WIA	5
5/30/12	80 840	7	ImL	9.5	16:00	199
7-7-					70	714
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						·
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-						
				~		
		7		·		

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

G 6/1/12 039

Turbidity/pH Check

		Tu	rbidity/pH	Check		•	
Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)	1
80 1714	21	<2	5-22-12	BE	No	No	
80 L715 LD91					yes	3010 A	1
30 1725					No	No	-
80 1726						+ 7	+
801727					 		1
801728	1					 	1
80 1729	71				Yes	3010 A	
8-1730			5		1	30.6.74	-
80 (73)	 	+		1	+		1
801747(1-8)	<1	1 <2	5-23-12	BE	<u> </u>	1	+
801750	+ 1'-		3-23-12	106	x c5	3010A	
	 	>2	-			Xes lates	12.1
801752(1-4)	-	<u> </u>					needf. /+
T 80(196(-7)	 	<2 1	 				
8 a 1753 (1-14)	<u> </u>	<u> </u>			<u> </u>		
801775(1-11) 5	1	<2 <2	5-24-12	BL	xes	3010A	
80173711-3		<u> </u>			No	× 25 11:00 F	m
801764 (10-12)	/	1				"	
801767		42	• "			₩0	
301790 (1-10)							
80179111-10)			l				•
80 1792 (1-10)							
8017934-72)	$oldsymbol{1}$	>2				XC5 5-27-1	2
Ø1715	41	72	3125/12	19		YES S. 30 pm	Wsina
80 1747 (1-7)	J)	J_{i}	1	1	HO per
301799	<1	72	5/29/12	BE	N c	y C5 18:00	wsing He per Chint helpust
80 1818	۲,	12				No	report
801828		1					/
80 1827	(,						
80 1839 (0)	۲١	12	5-30-12	BE	x es	3 = 1.A	
801840 (T)		>2		72	, , ,	yes it:	a
801841 (1-2)	>1	1					.•
\$9 1845(1-12)		>2			No	<u> </u>	
801848	≻i	<2			ye5	3.01.4	
80(849(1-12)	\ \ \ \ \ \	72	1		No	BoloAn	
831860-1-3		×2	5/21/10	KK		Xes 18:30	
801871	71		5/31/12	BE	No	Vest upm	BE 5-31-12
5012830-5		<2×86			y es	3018A XES	<u>Nos</u>
		<2 <2	6-1-12	BE	No	No	
801892	<u> </u>	1	6-5-12	BG	Ne	Ne	
		<u> </u>				·	
801898(1-2)		72				x < 5 1/100	
80 10 10 - 6		1			<u> </u>	\	
801907		₹2			*45	30104	
801908							
501909(1-3)						1	
301912(1-10)					~ o	Na	
8-19 1361-10							
801914	<u>}}≀</u>	12			¥es	30107	
801915	<u> <1</u>				No	W Q	
801818	4	<u> </u>	J	J	J	L .	



Sample Integrity & Analysis Discrepancy Form

Clie	nt: E2	Lab # 801840
Date	e Delivered: ☑S / ½ Ø / 12 Time: <u>å / ' Ø</u> Ø By: □ Mail Ø F	Field Service
1.	Was a Chain of Custody received and signed?	AdiYes □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 ÁN/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?	Z(Yes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)?4 <u>.8°C</u>	⊠Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ÆYes □No □N/A
8.	Were sample custody seals intact?	No ZN/A
9.	Does the number of samples received agree with COC?	A√es □No □N/A
10.	Did sample labels correspond with the client ID's?	AYes ONO ON/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No ¤√N/A
12.	Were samples pH checked? pH = $\underline{Sel\ C}$. $Or\ e$.	Ø(Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH	ŹYes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground No. □Solid	111 - 11 - n
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	L. Shaberein

helyoleal Lengh Log Book

WDR pH Results

		i ter T-700	lank Di as e	than pH 6	6 or greater than p	H 8.3 the Inje	tion well sh	ould be shut	down until the problem	is fixed.
				Time Si Snijab		prince Prince Allegae	91 (m) 43 (4 m) (0) 46 (4 j) (4 j)	Slope of the	Analyst Name (chility at the bulk)	pH Privoit
				(5)		5 :112	(Hav)			
stes:				• • • • • • • • • • • • • • • • • • • •					1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 :	
Sc-700B	6-1-12	15:09	5-1-12	1515	# I METEK	5-1-12	0100	-56.3	C-Kugh-	78
ites:	<u> </u>									
SC-700B	5.8.12	14:56	5-812	15:05	METER#1	5-8-12	0100	-56.1	O.Kniqut	7.3
ntes:	<u> </u>		cu							
SC-700B.	5.15-12	15:07	5.85.12	15:13	Nde#1	5-15-12	0100	-55.7	(laught	7.3
etes:								-55.3	0	
5 SC- 700 B	5-22-12	1330	5.22-12		METERY	5-15-12	0100	-52/	A DE	7.2
otes:									00-	
6 5C-700B	5-29-12	1400	5-29-12	1405	MELERA!	5:29-12	0100	-55.8	how THELPS	7.3
Mings \		\		~			`			
7										\perp
i otes:			\	\ .						
	<u></u>	Rei	ninder: WE		ed pH Range for the	ne Effluent (S	C-700B) is:	6.5 - 8.4	<u> </u>	<u></u>
MITEANSPO	ISED FRO	n woi	LSHOT	- INC	CORVETLY 14					50



www.truesdail.com

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

June 28, 2012

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

Dear Mr. Duffy:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-364 PROJECT, GROUNDWATER SUBJECT:

MONITORING,

TLI No.: 801944

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-364 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 June 5, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The total and total dissolved metals were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Lo- Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters Project Name: PG&E Topock Project Project No.: 424973.01.DM

Laboratory No.: 801944

Date: June 28, 2012 Collected: June 5, 2012 Received: June 5, 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	Maria Mangarova
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	George Wahba

TRUESDAIL LABORATORIES, INC.

Client: E2 Consulting Engineers, Inc.

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155 Grand Ave. Suite 1000

Cakland, CA 94612

Laboratory No.: 801944

Date Received: June 5, 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
801944-001	SC-700B-WDR-364	E120.1	NONE	6/5/2012	10:30	EC	7440	umhos/cm	2.00
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Aluminum	ND	ug/L	50.0
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	BORON	978	ug/L	200
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Iron	ND	ug/L	20.0
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Molybdenum	19.3	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Zinc	ND	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Antimony	ND	ug/L	5.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Arsenic	ND	ug/L	1.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Barium	11.4	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Chromium	ND	ug/L	1.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Copper	ND	ug/L	5.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Lead	ND	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Manganese	1.7	ug/L	1.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Nickel	ND	ug/L	10.0
801944-001	SC-700B-WDR-364	E218.6	LABFLT	6/5/2012	10:30	Chromium, hexavalent	ND	ug/L	0.20
801944-001	SC-700B-WDR-364	E300	NONE	6/5/2012	10:30	Fluoride	2.19	mg/L	0.500
801944-001	SC-700B-WDR-364	E300	NONE	6/5/2012	10:30	Nitrate as N	3.17	mg/L	1.00
801944-001	SC-700B-WDR-364	E300	NONE	6/5/2012	10:30	Sulfate	506	mg/L	25.0
801944-001	SC-700B-WDR-364	SM2130B	NONE	6/5/2012	10:30	Turbidity	ND	NTU	0.100
801944-001	SC-700B-WDR-364	SM2540C	NONE	6/5/2012	10:30	Total Dissolved Solids	4090	mg/L	250
801944-001	SC-700B-WDR-364	SM4500NH3D	NONE	6/5/2012	10:30	Ammonia-N	ND	mg/L	0.500
801944-001	SC-700B-WDR-364	SM4500NO2B	NONE	6/5/2012	10:30	Nitrite as N	ND	mg/L	0.0050

005

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801944-002	SC-100B-WDR-364	E120.1	NONE	6/5/2012	10:30	EC	7700	umhos/cm	
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Aluminum	ND		2.00 50.0
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	BORON	997	ug/L ug/L	200
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Iron	ND	ug/L ug/L	20.0
801944-002	SC-100B-WDR-364	E200.7	LABFLT	6/5/2012	10:30	Iron	ND	-	20.0
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Molybdenum	24.2	ug/L ug/L	20.0 10.0
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Zinc	ND	ug/L ug/L	10.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Antimony	ND	-	5.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Arsenic	3.4	ug/L	
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Barium	25.7	ug/L ug/L	1.0 10.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Chromium	747		1.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Copper	ND	ug/L ug/L	5.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Lead	ND	ug/L ug/L	10.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Manganese	4.9	ug/L ug/L	1.0
801944-002	SC-100B-WDR-364	E200.8	LABFLT	6/5/2012	10:30	Manganese	4.8	ug/L ug/L	1.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Nickel	ND	ug/L	10.0
801944-002	SC-100B-WDR-364	E218.6	LABFLT	6/5/2012	10:30	Chromium, hexavalent	752	ug/L	10.0
801944-002	SC-100B-WDR-364	E300	NONE	6/5/2012	10:30	Fluoride	2.64	mg/L	0.500
801944-002	SC-100B-WDR-364	E300	NONE	6/5/2012	10:30	Nitrate as N	2.99	mg/L	1.00
801944-002	SC-100B-WDR-364	E300	NONE	6/5/2012	10:30	Sulfate	531	mg/L	25.0
801944-002	SC-100B-WDR-364	SM2130B	NONE	6/5/2012	10:30	Turbidity	ND	NTU	0.100
801944-002	SC-100B-WDR-364	SM2320B	NONE	6/5/2012	10:30	Alkalinity	135	mg/L	5.00
801944-002	SC-100B-WDR-364	SM2320B	NONE	6/5/2012	10:30	Bicarbonate	135	mg/L	5.00
801944-002	SC-100B-WDR-364	SM2320B	NONE	6/5/2012	10:30	Carbonate	ND	mg/L	5.00
801944-002	SC-100B-WDR-364	SM2540C	NONE	6/5/2012	10:30	Total Dissolved Solids	4490	mg/L	250
801944-002	SC-100B-WDR-364	SM4500NH3D	NONE	6/5/2012	10:30	Ammonia-N	ND	mg/L	0.500
801944-002	SC-100B-WDR-364	SM4500NO2B	NONE	6/5/2012	10:30	Nitrite as N	ND	mg/L	0.0050
801944-002	SC-100B-WDR-364	SM4500-PB_E	NONE	6/5/2012	10:30	Total Phosphorous-P	ND	mg/L	0.0200
801944-002	SC-100B-WDR-364	SM4500SI	LABFLT	6/5/2012	10:30	Soluble Silica	20.3	mg/L	1.00
801944-002	SC-100B-WDR-364	SM5310C	NONE	6/5/2012	10:30	Total Organic Carbon	0.426	mg/L	0.300

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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Printed 6/28/2012

Laboratory No. 801944

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 6/5/2012 9:30:00 PM

		oumpioo i	10001104 011	0/0/2012 3:00:0	O I IVI			
Field ID				Lab ID	Co	llected	Matr	ix
SC-700B-WDR-364				801944-001	06/05	5/2012 10:30	Wat	er
SC-100B-WDR-364				801944-002	06/05	5/2012 10:30	Wat	er
Anions By I.C EPA	300.0		Batcl	n 06AN12B				
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
801944-001 Fluoride		mg/L	06/06	6/2012 10:36	5.00	0.155	0.500	2.19
Nitrate as Nit	trogen	mg/L	06/06	5/2012 10:36	5.00	0.135	1.00	3.17
Sulfate		mg/L	06/06	6/2012 13:50	50.0	5.70	25.0	506.
801944-002 Fluoride		mg/L	06/06	5/2012 10:48	5.00	0.155	0.500	2.64
Nitrate as Nit	rogen	mg/L	06/06	5/2012 10:48	5.00	0.135	1.00	2.99
Sulfate		mg/L	06/06	5/2012 14:01	50.0	5.70	25.0	531.
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 = 8	301944-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Fluoride	mg/L	5.00	2.66	2.64		0.604	0 - 20	3-
Nitrate as Nitrogen	mg/L	5.00	3.05	2.99		2.08	0 - 20	
Duplicate							Lab ID = 8	301949-001
Parameter	Unit	DF	Result	Expected	R	PD	Acceptar	nce Range
Chloride	mg/L	100	266.	274		2.93	0 - 20	9-
Sulfate	mg/L	100	144.	152		5.16	0 - 20	



Client: E2 Consulting En	Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Project Project Number: 424973.01.DM					
Lab Control Sample									
Parameter Chloride Fluoride Sulfate Nitrate as Nitrogen Matrix Spike	Unit mg/L mg/L mg/L mg/L	DF 1.00 1.00 1.00 1.00	Result 3.91 4.08 19.9 3.97	Expected 4.00 4.00 20.0 4.00	Recovery 97.7 102. 99.4 99.2	Acceptance Range 90 - 110 90 - 110 90 - 110 90 - 110 Lab ID = 801944-002			
Parameter Fluoride Nitrate as Nitrogen Matrix Spike	Unit mg/L mg/L	DF 5.00 5.00	Result 23.8 24.4	Expected/Added 22.6(20.0) 23.0(20.0)	Recovery 106. 107.	Acceptance Range 85 - 115 85 - 115 Lab ID = 801949-001			
Parameter Chloride Sulfate MRCCS - Secondary	Unit mg/L mg/L	DF 100 100	Result 651. 376.	Expected/Added 674(400.) 352(200.)	Recovery 94.3 112.	Acceptance Range 85 - 115 85 - 115			
Parameter Chloride Fluoride Sulfate Nitrate as Nitrogen MRCVS - Primary	Unit mg/L mg/L mg/L mg/L	DF 1.00 1.00 1.00 1.00	Result 3.95 4.08 19.9 3.98	Expected 4.00 4.00 20.0 4.00	Recovery 98.8 102. 99.3 99.6	Acceptance Range 90 - 110 90 - 110 90 - 110 90 - 110			
Parameter Chloride MRCVS - Primary	Unit mg/L	DF 1.00	Result 2.98	Expected 3.00	Recovery 99.3	Acceptance Range 90 - 110			
Parameter Chloride MRCVS - Primary	Unit mg/L	DF 1.00	Result 2.98	Expected 3.00	Recovery 99.2	Acceptance Range 90 - 110			
Parameter Fluoride Sulfate MRCVS - Primary	Unit mg/L mg/L	DF 1.00 1.00	Result 3.16 15.0	Expected 3.00 15.0	Recovery 105. 100.	Acceptance Range 90 - 110 90 - 110			
Parameter Sulfate Nitrate as Nitrogen	Unit mg/L mg/L	DF 1.00 1.00	Result 15.0 2.99	Expected 15.0 3.00	Recovery 100. 99.6	Acceptance Range 90 - 110 90 - 110			



Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Project Project Number: 424973.01.DM					Page 3 of 30 Printed 6/28/2012	
MRCVS - Primary									
Parameter Nitrate as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 2.98	Expected 3.00		Recovery 99.5	Acceptar 90 - 110	nce Range	
Parameter Nitrate as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 2.98	Expected 3.00		Recovery 99.3	Acceptar 90 - 110	nce Range	
Parameter Nitrate as Nitrogen	Unit mg/L	DF 1.00	Result 2.94	Expected 3.00		Recovery 98.0	Acceptar 90 - 110	nce Range	
Nitrite SM 4500-NO2 B Parameter		Unit	Batch Analy	06NO212B zed	DF	MDL	RL	Result	
801944-001 Nitrite as Nitrogen		mg/L	06/06/2	2012 15:40	1.00	0.000360	0.0050	ND	
801944-002 Nitrite as Nitrogen		mg/L	06/06/2	2012 15:41	1.00	0.000360	0.0050	ND	
Method Blank									
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result ND				1 ah ID = 8	301944-001	
Duplicate Parameter Nitrite as Nitrogen Lab Control Sample	Unit mg/L	DF 1.00	Result ND	Expected 0.00		RPD 0		nce Range	
Parameter Nitrite as Nitrogen Matrix Spike	Unit mg/L	DF 1.00	Result 0.0376	Expected 0.0400		Recovery 94.0	Acceptance Range 90 - 110 Lab ID = 801944-001		
Parameter Nitrite as Nitrogen MRCCS - Secondary	Unit mg/L	DF 1.00	Result 0.0196	Expected/Add 0.0200(0.020		Recovery 98.0	Acceptar 85 - 115	nce Range	
Parameter Nitrite as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.0189	Expected 0.0200		Recovery 94.5	Acceptar 90 - 110	nce Range	
Parameter Nitrite as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.0206	Expected 0.0200		Recovery 103	Acceptar 90 - 110	nce Range	
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0206	Expected 0.0200		Recovery 103	Acceptar 90 - 110	nce Range	



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

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Project Number: 424973.01.DM

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Alkalinity by SM 2320B	Batch	06ALK12A
Aikaiinity by Sig 2320D	Daton	99, 10,111

Parameter		Unit	Anal	lyzed D	F MDL	RL	Result
801944-002 Alkalinity as CaC	003	mg/L	06/12	/2012 1.	0.555	5.00	135
Bicarbonate (Ca	lculated)	mg/L	06/12	/2012 1.	0.555	5.00	135
Carbonate (Calc	ulated)	mg/L	06/12	/2012 1.	00 0.555	5.00	ND
Method Blank							
Parameter Alkalinity as CaCO3	Unit mg/L	DF 1.00	Result N D				204044.000
Duplicate							801944-002
Parameter Alkalinity as CaCO3 Lab Control Sample	Unit mg/L	DF 1.00	Result 138	Expected 135	RPD 2.20	Accepta 0 - 20	nce Range
Parameter Alkalinity as CaCO3 Lab Control Sample [Unit mg/L Duplicate	DF 1.00	Result 98.0	Expected 100.	Recovery 98.0	Accepta 90 - 110	ince Range)
Parameter Alkalinity as CaCO3 Matrix Spike	Unit mg/L	DF 1.00	Result 97.0	Expected 100.	Recovery 97.0	90 - 110	nce Range) 801949-002
Parameter Alkalinity as CaCO3 Matrix Spike Duplicat	Unit mg/L e	DF 1.00	Result 226	Expected/Added 240.(100.)	d Recovery 86.0	75 - 125	nce Range 5 801949-002
Parameter Alkalinity as CaCO3	Unit mg/L	DF 1.00	Result 229	Expected/Added 240.(100.)	d Recovery 89.0	Accepta 75 - 125	nce Range



Unit

umhos

Parameter

Specific Conductivity

DF

1.00

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Expected

998

Recovery

98.3

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Project Number: 424973.01.DM

Printed 6/28/2012

Acceptance Range

90 - 110

Specific Conductivity -	EPA 120.1	1 Batch 06EC12A						
Parameter		Unit Analyzed		lyzed	DF	MDL	RL	Result
801944-001 Specific Condu	ctivity	umhos/	os/cm 06/07/2012		1.00	0.116	2.00	7440
801944-002 Specific Condu	ctivity	umhos/	cm 06/07	7/2012	1.00	0.116	2.00 7700	
Method Blank								
Parameter	Unit	DF	Result					
Specific Conductivity	umhos	1.00	ND					
Duplicate							Lab ID =	801945-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Specific Conductivity	umhos	1.00	8370	8370		0.00	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	709	706		100.	90 - 110)
MRCCS - Secondary	/							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	708	706		100.	90 - 110)
MRCVS - Primary								

Result

981



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

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Project Number: 424973.01.DM

Printed 6/28/2012

Chrome VI by EPA 218.6	Batch 06CrH12C
CHICHE VIDVEFACIO.0	Dater Cooming

Parameter		Unit	Analyzed		DF	MDL	RL	Result
801944-001 Chromium, Hexa	avalent	ug/L	06/06	/2012 12:14	1.00	0.0250	0.20	ND
801944-002 Chromium, Hexa	avalent	ug/L	06/06	/2012 14:41	50.0	1.25	10.0	752.
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	801948-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	4.40	4.43		0.577	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200		100.0	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	-	nce Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00		98.0	90 - 110)
Matrix Spike							Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	•	nce Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.12(1.00)		92.5	90 - 110)
Matrix Spike							Lab ID =	801944-002
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery		nce Range
Chromium, Hexavalent	ug/L	50.0	1740	1750(1000)		98.9	90 - 110	
Matrix Spike							Lab ID =	801945-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery		nce Range
Chromium, Hexavalent	ug/L	1.00	16.3	16.5(10.0)		98.2	90 - 110	
Matrix Spike							Lab ID =	801948-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	•	nce Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.43(5.00)		98.2	90 - 110	
Matrix Spike							Lab ID =	801948-002
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	•	nce Range
Chromium, Hexavalent	ug/L	1.00	8.50	8.68(5.00)		96.4	90 - 110	
Matrix Spike							Lab ID =	801948-003
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery		nce Range
Chromium, Hexavalent	ug/L	1.00	7.91	8.06(5.00)		97.0	90 - 110	l



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Meta	is hv	FPA	200.7	, Total
181610	13 0 4			. 10441

inicials by Li 11 Louis, 10t							
Parameter		Unit	Ana	lyzed [F MDL	RL	Result
801944-001 Iron		ug/L	06/22	2/2012 13:56 1.	00 1.34	20.0	ND
Zinc		ug/L	06/22	2/2012 13:56 1.	00 3.89	10.0	ND
801944-002 Iron		ug/L	06/22	2/2012 14:24 1.	00 1.34	20.0	ND
Zinc		ug/L	06/22	2/2012 14:24 1.	00 3.89	10.0	ND
Method Blank							
Parameter	Unit	DF	Result				
Iron	ug/L	1.00	ND				
Zinc	ug/L	1.00	ND				
Duplicate						Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20	
Zinc	ug/L	1.00	ND	0.00	0	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	108.	100.	108	85 - 118	5
Zinc	ug/L	1.00	99.9	100.	99.9	85 - 118	5
Matrix Spike					į.	Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accepta	ance Range
Iron	ug/L	1.00	94.8	100.(100.)	94.8	75 - 125	5
Zinc	ug/L	1.00	104.	100.(100.)	104.	75 - 125	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	5170	5000	103.	95 - 108	5
Zinc	ug/L	1.00	5060	5000	101.	95 - 108	5
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	4870	5000	97.4	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	4940	5000	98.9	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Iron	ug/L	1.00	4860	5000	97.2	90 - 110)



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Metals by EPA 200.7, Total			Batch	062512A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801944-001 Boron		ug/L	06/25	/2012 12:35	1.00	1.50	200.	978.
Molybdenum		ug/L	06/25	/2012 12:35	1.00	4.02	10.0	19.3
801944-002 Boron		ug/L	06/25	/2012 13:09	1.00	1.50	200.	997.
Molybdenum		ug/L	06/25	/2012 13:09	1.00	4.02	10.0	24.2
Method Blank								
Parameter	Unit	DF	Result					
Boron	ug/L	1.00	ND					
Molybdenum	ug/L	1.00	ND					
Duplicate							Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Boron	ug/L	1.00	970.	978		0.821	0 - 20	
Molybdenum	ug/L	1.00	18.8	19.3		2.62	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Boron	ug/L	1.00	93.6	100.		93.6	85 - 118	5
Molybdenum	ug/L	1.00	98.7	100.		98.7	85 - 115	5
Matrix Spike							Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ance Range
Boron	ug/L	1.00	2820	2980(2000)		91.9	75 - 125	5
Molybdenum	ug/L	1.00	117.	119.(100.)		97.8	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Boron	ug/L	1.00	4910	5000		98.2	95 - 105	5
Molybdenum	ug/L	1.00	4940	5000		98.8	95 - 105	5
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Boron	ug/L	1.00	4740	5000		94.7	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Boron	ug/L	1.00	4770	5000		95.3	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Molybdenum	ug/L	1.00	4960	5000		99.2	90 - 110)



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Metals by EPA 200.7, To	tal	Batch 062612A					
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
801944-001 Aluminum		ug/L	06/26	/2012 15:26 1.0	2.83	50.0	ND
801944-002 Aluminum		ug/L	06/26	/2012 15:31 1.0	00 2.83	50.0	ND
Method Blank							
Parameter	Unit	DF	Result				
Aluminum	ug/L	1.00	ND				
Duplicate						Lab ID =	801944-002
Parameter	Unit	DF	Result	Expected	RPD	Accepta	nce Range
Aluminum	ug/L	1.00	ND	0.00	0	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	2040	2000	102.	85 - 115	•
Matrix Spike						Lab ID =	801944-002
Parameter	Unit	DF	Result	Expected/Added	l Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	1520	2000(2000)	75.8	75 - 125	•
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	4930	5000	98.6	95 - 105	;
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery		nce Range
Aluminum	ug/L	1.00	4660	5000	93.1	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	4770	5000	95.4	90 - 110)
Interference Check St	tandard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	2060	2000	103.	80 - 120)
Interference Check St	tandard A						
Parameter	Unit	DF	Result	Expected	Recovery	•	nce Range
Aluminum	ug/L	1.00	1970	2000	98.3	80 - 120)
Interference Check St	tandard AB						
Parameter	Unit	DF	Result	Expected	Recovery	•	nce Range
Aluminum	ug/L	1.00	2030	2000	102.	80 - 120)

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



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Metals by	EPA 200.8, Tota	al		Batch	061812A				
Parameter			Unit	Ana	Analyzed		MDL	RL	Result
801944-001	1 Antimony		ug/L	06/18	06/18/2012 19:36		0.420	5.0	ND
	Arsenic		ug/L	06/18	06/18/2012 19:36		0.265	1.0	ND
	Barium		ug/L	06/18	3/2012 19:36	5.00	0.205	10.0	11.4
	Chromium		ug/L	06/18	3/2012 19:36	5.00	0.195	1.0	ND
	Lead		ug/L	06/18	3/2012 19:36	5.00	0.265	10.0	ND
	Manganese		ug/L	06/18	3/2012 19:36	5.00	0.270	1.0	1.7
801944-002	2 Antimony		ug/L	06/18	3/2012 20:40	5.00	0.420	5.0	ND
	Arsenic		ug/L	06/18	3/2012 20:40	5.00	0.265	1.0	3.4
	Barium		ug/L	06/18	3/2012 20:40	5.00	0.205	10.0	25.7
	Chromium		ug/L	06/18	3/2012 20:40	5.00	0.195	1.0	747.
	Lead		ug/L	06/18	3/2012 20:40	5.00	0.265	10.0	ND
	Manganese		ug/L	06/18	3/2012 20:40	5.00	0.270	1.0	4.9
Meth	nod Blank								
Paramete	r	Unit	DF	Result					
Arsenic		ug/L	1.00	ND					
Barium		ug/L	1.00	ND					
Chromium	1	ug/L	1.00	ND					
Antimony		ug/L	1.00	ND					
Lead		ug/L	1.00	ND					
Manganes	se	ug/L	1.00	ND					
Dup	licate							Lab ID =	801944-001
Paramete	r	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Arsenic		ug/L	5.00	ND	0.00		0	0 - 20	
Barium		ug/L	5.00	12.6	11.4		9.84	0 - 20	
Chromium	1	ug/L	5.00	ND	0.00		0	0 - 20	
Antimony		ug/L	5.00	ND	0.00		0	0 - 20	
Lead		ug/L	5.00	ND	0.00		0	0 - 20	
Manganes	se ·	ug/L	5.00	1.58	1.69		6.48	0 - 20	



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Low Level Calibration V	erification					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.201	0.200	101.	70 - 130
Barium	ug/L	1.00	0.239	0.200	120.	70 - 130
Chromium	ug/L	1.00	0.234	0.200	117.	70 - 130
Antimony	ug/L	1.00	0.231	0.200	115.	70 - 130
Lead	ug/L	1.00	0.201	0.200	101.	70 - 130
Manganese	ug/L	1.00	0.210	0.200	105.	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	95.7	100.	95.7	85 - 115
Barium	ug/L	5.00	98.5	100.	98.5	85 - 115
Chromium	ug/L	5.00	96.2	100.	96.2	85 - 115
Antimony	ug/L	5.00	103.	100.	103.	85 - 115
Lead	ug/L	5.00	93.9	100.	93.9	85 - 115
Manganese	ug/L	5.00	94.6	100.	94.6	85 - 115
Matrix Spike						Lab ID = 801944-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	92.7	100.(100.)	92.7	75 - 125
Barium	ug/L	5.00	108	111.(100.)	96.6	75 - 125
Chromium	ug/L	5.00	95.3	100.(100.)	95.3	75 - 125
Antimony	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Lead	ug/L	5.00	85.3	100.(100.)	85.3	75 - 125
Manganese	ug/L	5.00	93.6	102.(100.)	91.9	75 - 125
Matrix Spike Duplicate						Lab ID = 801944-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	96.7	100.(100.)	96.7	75 - 125
Barium	ug/L	5.00	110.	111.(100.)	98.2	75 - 125
Chromium	ug/L	5.00	96.6	100.(100.)	96.6	75 - 125
Antimony	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Lead	ug/L	5.00	85.9	100.(100.)	85.9	75 - 125
Manganese	ug/L	5.00	93.7	102.(100.)	92.0	75 - 125



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Interference Check Sta	ndard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium	ug/L	1.00	9.31	10.0	93.1	80 - 120	
Antimony	ug/L	1.00	ND	0.00			
Interference Check Star	ndard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Antimony	ug/L	1.00	ND	0.00			
Lead	ug/L	1.00	ND	0.00			
Interference Check Sta	ndard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Lead	ug/L	1.00	ND	0.00			
Interference Check Star	ndard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Manganese	ug/L	1.00	9.23	10.0	92.3	80 - 120	
Interference Check Star	ndard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Manganese	ug/L	1.00	9.06	10.0	90.6	80 - 120	
Serial Dilution						Lab ID = 801944-002	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range	
Barium	ug/L	25.0	26.2	25.7	1.74	0 - 10	
Chromium	ug/L	25.0	732.	747	2.06	0 - 10	



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Metals by EPA 200.8, Total	al		Batch	062212A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801944-001 Copper		ug/L	06/22	/2012 15:19	5.00	0.235	5.0	ND
Nickel		ug/L	06/22	/2012 15:19	5.00	0.355	10.0	ND
801944-002 Copper		ug/L	06/22	/2012 16:44	5.00	0.235	5.0	ND
Nickel		ug/L	06/22	/2012 16:44	5.00	0.355	10.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Nickel	ug/L	1.00	ND					
Copper	ug/L	1.00	ND					
Duplicate							Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Nickel	ug/L	5.00	ND	0.00		0	0 - 20	
Copper	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration \	erification/							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Nickel	ug/L	1.00	0.974	1.00		97.4	70 - 130)
Copper	ug/L	1.00	0.812	1.00		81.2	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	-	ance Range
Nickel	ug/L	5.00	99.3	100.		99.3	85 - 115	5
Copper	ug/L	5.00	104.	100.		104.	85 - 118	5
Matrix Spike							Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	-	ance Range
Nickel	ug/L	5.00	95.6	100.(100.)		95.6	75 - 125	5
Copper	ug/L	5.00	93.6	100.(100.)		93.6	75 - 125	
Matrix Spike Duplicate							Lab ID =	801944-001
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery		ance Range
Nickel	ug/L	5.00	97.1	100.(100.)		97.1	75 - 125	
Copper	ug/L	5.00	95.3	100.(100.)		95.3	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ance Range
Nickel	ug/L	1.00	9.70	10.0		97.0	90 - 110	
Copper	ug/L	1.00	9.77	10.0		97.7	90 - 110)



Silica

mg/L

1.00

Report Continued

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Interference Check Sta	andard AB							
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Nickel	ug/L	1.00	10.0	10.0		100.	80 - 120)
Interference Check Sta	andard AB							
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Nickel	ug/L	1.00	9.49	10.0		94.9	80 - 120)
Copper	ug/L	1.00	9.62	10.0		96.2	80 - 120)
Interference Check Sta	andard AB							
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Copper	ug/L	1.00	10.0	10.0		100.	80 - 120)
/- /		70		000:404				·
Reactive Silica by SM450	10-Si D			06Si12A				<u>_</u>
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
801944-002 Silica		mg/L	06/11	/2012	25.0	0.532	1.00	20.3
Method Blank								
Parameter	Unit	DF	Result					
Silica	mg/L	1.00	ND					
Duplicate							Lab ID =	801993-003
Parameter	Unit	DF	Result	Expected	1	RPD	Accepta	ance Range
Silica	mg/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	l	Recovery	Accepta	ance Range
Silica	mg/L	1.00	0.200	0.220		90.8	90 - 110	ס
Matrix Spike							Lab ID =	801993-003
Parameter	Unit	DF	Result	Expected/Add	ded I	Recovery	Accepta	ance Range
Silica	mg/L	1.00	0.376	0.400(0.400)		94.0	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Silica	mg/L	1.00	0.0992	0.110		90.2	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	ance Range
				0.400		00.4	00 44	

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0.384

0.400

96.1

90 - 110



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Total Dissolved Solids	Total Dissolved Solids by SM 2540 C							
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801944-001 Total Dissolved Solids		mg/L	mg/L 06/06/2012 mg/L 06/06/2012		1.00 1.00	0.400	250.	4090
801944-002 Total Dissolved	801944-002 Total Dissolved Solids					0.400	250.	4490
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	801974-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 249	Expected 256	F	RPD 2.77	Accepta 0 - 5	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 491	Expected 500.	F	Recovery 98.2	Accepta 90 - 110	ance Range)



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Total Organic Carbon (T/ Parameter		Unit	Δna	lyzed	DF	MDL	RL	Result
801944-002 Total Organic Ca	rbon	mg/L	06/06	3/2012 13:37	1.00	0.0103	0.300	0.426
Method Blank								
Parameter	Unit	DF	Result					
Total Organic Carbon	mg/L	1.00	ND					
Duplicate							Lab ID =	801922-021
Parameter	Unit	DF	Result	Expected	1	RPD	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	2.71	2.73		0.662	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	19.8	20.0		99.0	90 - 110	_
Matrix Spike							Lab ID = 8	301922-022
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	12.2	12.5(10.0)		97.2	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	10.5	10.0		105.	90 - 110	-
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	9.33	10.0		93.3	90 - 110	_
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Organic Carbon	mg/L	1.00	9.40	10.0		94.0	90 - 110	



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Total Phosphate, SM 4500-PB.E

Batch 06TP12B

Total Filospilate, Sill 4500-FB,E			Daton	0011-120				
Parameter		Unit	Anal	lyzed D	F	MDL	RL	Result
801944-002 Phosphate, Tota	l As P	mg/L	06/11	/2012 1.0	00	0.00530	0.0200	ND
Method Blank								
Parameter	Unit	DF	Result					
Phosphate, Total As P	mg/L	1.00	ND					
Duplicate							Lab ID = 8	01944-002
Parameter	Unit	DF	Result	Expected	RP	D	Acceptar	ice Range
Phosphate, Total As P	mg/L	1.00	ND	0.00	0)	0 - 20	_
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Re	covery	Acceptar	ice Range
Phosphate, Total As P	mg/L	1.00	0.102	0.100	1	02	90 - 110	_
Matrix Spike							Lab ID = 8	01944-002
Parameter	Unit	DF	Result	Expected/Added	l Re	covery	Acceptar	ice Range
Phosphate, Total As P	mg/L	1.00	0.0663	0.0650(0.0650)	1	02	75 - 125	•
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Re	covery	Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	0.0564	0.0600	9	4.0	90 - 110	J
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	covery	Acceptan	ce Range
Phosphate, Total As P	mg/L	1.00	0.0630	0.0650	9	6.9	90 - 110	_



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Ammonia Nitrogen by SM	14500-NF	I3D	Batch	06NH312B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801944-001 Ammonia as N		mg/L	06/07	² /2012	1.00	0.00120	0.500	ND
801944-002 Ammonia as N		mg/L	06/07	7/2012	1.00	0.00120	0.500	ND
Method Blank								
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Duplicate							Lab ID =	801944-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Ammonia as N	mg/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	10.8	10.0		108.	90 - 110	
Matrix Spike							Lab ID =	301944-002
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	5.84	6.00(6.00)		97.4	75 - 125	
Matrix Spike Duplicate							Lab ID =	301944-002
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	5.68	6.00(6.00)		94.6	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.19	6.00		103.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.02	6.00		100.	90 - 110	



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Metals by I	EPA :	200.8.	Disso	lved
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Batch	061912C

Parameter		Unit	Ana	lyzed [DF M	DL RL	Result
801944-002 Manganese		ug/L	06/20)/2012 07:45 5	00 0.270	1.0	4.8
Method Blank							
Parameter Manganese Duplicate	Unit ug/L	DF 1.00	Result ND			Lab ID	= 801991-001
Parameter Manganese Low Level Calibration \	Unit ug/L /erification	DF 5.00	Result 29.9	Expected 29.7	RPD 0.738	Accer 0 - 20	tance Range
Parameter Manganese Lab Control Sample	Unit ug/L	DF 1.00	Result 0.200	Expected 0.200	Recover 100.	y Accer 70 - 1	otance Range 30
Parameter Manganese Matrix Spike	Unit ug/L	DF 5.00	Result 96.6	Expected 100.	Recover 96.6	85 - 1	tance Range 15 = 801991-001
Parameter Manganese Matrix Spike Duplicate	Unit ug/L	DF 5.00	Result 122.	Expected/Added	d Recover 91.9	75 - 1	tance Range 25 = 801991-001
Parameter Manganese MRCCS - Secondary	Unit ug/L	DF 5.00	Result 125	Expected/Added	d Recover 95.3	y Accep 75 - 13	tance Range 25
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.31	Expected 10.0	Recover 93.1	y Accep 90 - 1	tance Range 10
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.38	Expected 10.0	Recover	y Accep 90 - 1	tance Range 10
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.36	Expected 10.0	Recovery 93.6	y Accep 90 - 1	tance Range 10
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.40	Expected 10.0	Recovery 94.0	y Accep 90 - 1	tance Range 10



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Metals by 200.7, Dissolved

Batch 062212A

Parameter		Unit	Ana	lyzed C	F MDL	RL	Result
801944-002 Iron		ug/L	06/22	2/2012 15:50 1.	00 1.34	20.0	ND
Method Blank							
Parameter Iron	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	80 1 991-001
Parameter Iron	Unit ug/L	DF 1.00	Result ND	Expected 0.00	RPD 0	Accepta 0 - 20	nce Range
Lab Control Sample Parameter Iron Matrix Spike	Unit ug/L	DF 1.00	Result 112.	Expected 100.	Recovery 112.	85 - 115	nce Range 801991-00
Parameter Iron MRCCS - Secondary	Unit ug/L	DF 1.00	Result 108.	Expected/Added	I Recovery 108.	Accepta 75 - 125	nce Range
Parameter Iron MRCVS - Primary	Unit ug/L	DF 1.00	Result 5170	Expected 5000	Recovery 103.	Accepta 95 - 105	nce Range
Parameter Iron MRCVS - Primary	Unit ug/L	DF 1.00	Result 4870	Expected 5000	Recovery 97.4	Accepta 90 - 110	nce Range
Parameter Iron MRCVS - Primary	Unit ug/L	DF 1.00	Result 4940	Expected 5000	Recovery 98.9	Accepta 90 - 110	nce Range
Parameter Iron Interference Check S	Unit ug/L	DF 1.00	Result 4860	Expected 5000	Recovery 97.2	Accepta 90 - 110	nce Range
Parameter Iron	Unit ug/L	DF 1.00	Result 2100	Expected 2000	Recovery 105.	Accepta 80 - 120	nce Range
Interference Check S							
Parameter Iron	Unit ug/L	DF 1.00	Result 1980	Expected 2000	Recovery 98.8	Accepta 80 - 120	nce Range



Client: E2 Consulting Engineers, Inc.			roject Name: roject Number	PG&E Topo : 424973.01.E	-	ct	P Printed 6	age 30 of 30 28/2012	
Interference Check St	andard AB								
Parameter Iron Interference Check St	Unit ug/L andard AB	DF 1.00	Result 2060	Expected 2000	F	Recovery 103.	Acceptance Range 80 - 120		
Parameter Iron	Unit ug/L	DF 1.00	Result 1940	Expected 2000	F	Recovery 97.2	Acceptance Range 80 - 120		
Turbidity by SM 2130 B			Batch	06TUC12C					
Parameter		Unit	Analy	zed	DF	MDL	RL	Result	
801944-001 Turbidity		NTU	06/06/2	2012	1.00	0.0140	0.100	ND	
801944-002 Turbidity		NTU	06/06/2	2012	1.00	0.0140	0.100	ND	
Method Blank									
Parameter Turbidity	Unit NTU	DF 1.00	Result ND						
Duplicate							Lab ID =	801944-002	
Parameter Turbidity	Unit N TU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	nce Range	
Lab Control Sample									
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.43	Expected 8.00	Recovery Accepta 105. 90 - 110			nce Range	
Lab Control Sample D	•								
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.54	·			Accepta 90 - 110	nce Range	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 06TDS12B Date Analyzed: 6/11/12

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	72.4956	72.4958	72.4956	0.0002	No	0.0000	0.0	25.0	ND	_ 1
801944-1	10	50.3793	50.4202	50.4202	0.0000	No	0.0409	4090.0	250.0	4090.0	1
801944-2	10	49.5176	49.5628	49.5625	0.0003	No	0.0449	4490.0	250.0	4490.0	1
801945-1	20	51.4248	51.4821	51.4817	0.0004	No	0.0569	2845.0	125.0	2845.0	1
801945-2	10	48.0104	48.0581	48.0580	0.0001	No	0.0476	4760.0	250.0	4760.0	1
801948-1	100	68.3860	68.4164	68.4162	0.0002	No	0.0302	302.0	25.0	302.0	1
801948-2	100	74.7091	74.7358	74.7356	0.0002	No	0.0265	265.0	25.0	265.0	1
801948-3	100	72.8484	72.8764	72.876	0.0004	No	0.0276	276.0	25.0	276.0	1
801949-1	50	78.3992	78.4447	78.4444	0.0003	No	0.0452	904.0	50.0	904.0	1
801949-2	50	76.5132	76.5416	76.5413	0.0003	No	0.0281	562.0	50.0	562.0	1
801974-1	100	74.7312	74.7568	74.7568	0.0000	No	0.0256	256.0	25.0	256.0	1
801974-1D	100	71.3105	71.3358	71.3354	0.0004	No	_0.0249	249.0	25.0	249.0	1
LCS	100	73.1365	73.1859	73.1856	0.0003	No	0.0491	491.0	25.0	491.0	1
802014	50	76.5457	76.6465	76.6464	0.0001	No	0.1007	2014.0	50.0	2014.0	1
802015	100	74.5369	74.5767	74.5764	0.0003	No	0.0395	395.0	25.0	395.0	11
								<u> </u>			
		!						i			

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

Duplicate De	eterminati	ons Differer	ice Sumii	iary	
Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801974-1	0.0256	0.0249	1.4%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

% Difference =
$$C \times 100$$

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

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

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

C = Average weight in (g).

Норе Т.

Reviewer Printed Name

Jenny T.

Analyst Printed Name



Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 06TDS12B
Date Analyzed: 6/11/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3		
				i		
801944-1	7450	0.55	4842.5	0.84		
801944-2	7720	0.58	5018	0.89		
801945-1	4960	0.57	3224	0.88		
801945-2	8260	0.58	5369	0.89		
801948-1	536	0.56	348.4	0.87		
801948-2	446	0.59	289.9	0.91		
801948-3	476	0.58	309.4	0.89		
801949-1	1550	0.58	1007.5	0.90		
801949-2	1017	0.55	661.05	0.85		
801974-1	454	0.56	295.1	0.87		
801974-1D	454	0.55	295.1	0.84		
LCS			1			
802014	3530	0.57	2294.5	0.88		
802015	228	1.73	148.2	2.67		
	228	#VALUE!	148.2	#VALUE!		
	228	#VALUE!	148.2	#VALUE!		
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	_	T				
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1						
]		

X.

M



Alkalinity by SM 2320B

EZ SC

Analytical Batch: 06ALK12A

Matrix: Water

Date of Analysis: 5/12/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as CaCO₃ (ppm)	CO3 Alkalinity as CaCO₃ (ppm)		Low Alkalinity as CaCO ₃ (<20ppm)
BĽÄNK	5.16	50	0.02		0.0	0.00		0.0	5	ND	ND	ND	ND	
801832-20	8.13	50	0.02		0.0	4.60		92.0	5	92.0	92.0	ND	ND	
801922-17	8.14	50	0.02		0.0	5.65		113.0	5	113.0	113.0	ND	ND	
801922-21	7:98	50	0.02		0.0	4:45		89.0	5	89.0	89.0	ND	ND	rom.
801944-2	7.78	50	0.02	- Contract C	0.0	6.75		135.0	5	135.0	135.0	ND	ND	
801944-2 DUP	7.83	50	0.02		0.0	6.90		138.0	5	138.0	138.0	ND	ND	
801949-1	7.74	50	0.02	The second secon	0.0	10.20		204.0	5	204.0	204.0	ND	ND	
801949-2	7.72	50	0.02	Compression of the contract of	0,0	7.00		140.0	5	140.0	140.0	ND	ND	
801949-2 MS	9.38	50	0.02		40.0	11.30		226.0	5	226.0	146.0	80	ND	
801949-2 MSD	9.36	T 50	0.02	J	40.0	11.45		229.0	5	229.0	149.0	80	ND	
802078-21	7.04	50	0.02	And the second second	0.0	4.35		87.0	5	87.0	87.0	ND	ND	
LCS	10.25	50	0.02	· Company of the contract of t	48.0	4.90		98.0	5	98.0	2.0	96	ND	
LCSD	10.45	50	0.02	مستورية تبديد والمتناسل	48.0	4.85		97.0	5	97.0	1.0	96	ND	
			1											
		-	+											
		-	#	1			-							
		+	+	+										

Calculations as follows:

Tor P=

Where:

 $\left(\begin{array}{c} A \times N \times 50000 \\ \hline mL \ sample \end{array}\right)$

T = Total Alkalinity, mg CaCO3/L

P = Phenolphthalein Alkalinity, mg CaCO3/L

A = mL standard acid used

N = normality of standard acid

Low Alkalinity: = as mg/L CaCO3

(2 x B - C) x N x 50000

mL sample

Where: B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Laboratory Control Sample (LCS/LCSD) Summary

Accept Limit

<5

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	%Recovery	Accetance Limit	QC Within Control?
LCS	98	100	98.0%	90-110	Yes
LCSD	97	100	97.0%	90-110	Yes

QC Within

Control?

Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
801944-2	135	138	2.2%	≤20%	Yes
			,		

Sample Matrix Spike (MS/MSD) Summary

Sample Mauri	V Oblive (IA	ON WOOD O	ullilliai y				T					2011/4
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?
	140	1	100	100	226	240.00	86%	75-125	Yes	0.7%	. ≤20%	Yes
801949-2	140	1	100	100	229	240.00	89%	75-120	Yes	0.1 70		

Melissa S.
Analyst Printed Name

Blank Summary

Measured

Value, ppm

0

Reporting

Limit, RL

5 ppm

Analyst Śignature

Hope T.
Reviewer Printed Name

Reviewer Signature



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

CHAIN OF CUSTODY RECORD

COC Number

[IM3Plant-WDR-364]	Dan	(A)	2121
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TURNAROUND TIME 10 Days
DATE 6/05/12 PAGE 1 OF

***************************************											Carl.			/	7 4						
COMPANY	CH2M HILL /E2	2					$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$	/	$\overline{}$		/	7	$\overline{}$	XXXXX	paga /	<u>Q</u> /	////	COMMENTS
PROJECT NAME	PG&E Topock I	M3											**				4		ပ္တဲ / ၁	////	COMMENTS
PHONE	530-229-33	303	FAX 530-	339-3303		,	/ ,	/ ,	/ ,	/ ,	/ ,	List Below	/ ,	/ ,	/ / /	/ ,		500	/ ,	/	
ADDRESS	155 Grand Ave	Ste 1000					$\rho_{\theta_{I_{i}}}$				- /	(2) /	- /		တ် /	/,	7/	,Ve (4		R OF CONTAINERS	
	Oakland, CA 94	1612											3/	/ 8	?/				\backslash	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
P.O. NUMBER	424973.01.DM) -	\02 \8'05	/ ,	/_,	/ ,	/80%	2005	/a/	16.	اری/	stals?	\ \frac{1}{2}	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	/ /	[5]	
SAMPLERS (SIGNA	ATURE				/	4/kalip.i.	EC (132 (2320.B)		7urb (2540 C)	ê/ [8]	Ammo, (200.7), S	Total F. (4500-NH2)	Anion2 (4500-P)	TOC/F. (300.0) F, NO.	Dissoluci	N p2	NOZ (A SIlica - Res.) Fe, Mn less &	ζοος -		0	
,					/ŝ		EC (13)	$\frac{1}{2} / \frac{3}{8}$											NUMBE		
SAMPLE I.D.		DATE	TIME	DESCRIPTION	15	<u> </u>	/ ¥	/ ²²	/~	<u> </u>	₹	/ 20	/ ₹	/ ~	/ هُرُ	/ %	/≥		<u> [≥</u>		
SC-700B-V	WDR-364	6/05/12	10:30		Х		Х	Х	Х	Х	Х		Х				Х		4	PU=2	2200.7
SC-100B-\	<i>N</i> DR-364	6/05/12	10:30		X	Х	X	Х	X	Х	X.	Х	X	Х	Х	Х	Х		9	puz /ph	
																				J" - 7 1	
			essa unionessa suomi saltyty. P																		
T L BANKS SHOWN	ALE				o dice.) TRE		is of the same	m Pl	2 E	er ga	£									
	lavol				1000 2000 2000 2000 2000 2000 2000 2000		enti (No.									
		AAA	San Land Mark Mark Visit Land	3.20	land (ac												
					A					-	Annual Control	<u> </u>							13	TOTAL NUMBE	R OF CONTAINERS

CHAIN OF CUSTODY	SIGNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished) Printed Name Name Name	Company/ As Agency OM/	Date/ 6-5-12 Time 1506	RECEIVED COOL ☑ WARM ☐ 4.2 °FC
Signature (Received) Printed Name H188/1/2	Company/ // Agency	Date/ ぴ 〜 5〜 1 化 Time ノジ 3 の	CUSTODY SEALED YES NO 🗹
Signature (Relinquished) Printed Name High // A	Company/ Agency	Date/ 6-5-1-7 Time 21おり	SPECIAL REQUIREMENTS:
(Received) Printed Name Shakeum	Company/ 72 A Agency	Date/6/5/12 2/:30	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Signature Printed (Relinquished) Name	Company/ Agency	Date/ Time ,	100, 111, 1 0, 211
Signature Printed (Received) Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Duffer Added (ml)	Final all	T:	Γ
	801907	4.5	Buffer Added (mL)	Final pH	Time Buffered	Initials
	801909-		N/A	MA	NA	1
0/3/12	001909	4.7	N/F	NIA	NA	G
						<u> </u>
					· .	
		}				<u> </u>
	-					
	-6					
1/1/1/2	V -7	4	4	1//	<u> </u>	_\du_
6/5/12	8018/83908 801944-1	9.5	N/A	NA	NIA	رسي)
6/6/12	801944-1		2 mL	9.5	8:55 Am	Br_
1/1/2	8=1944-2	7	<u> </u>	<u> </u>	9:00 Am	
6/6/12	8-1945-1	- ["	2 m	9.5	9:05 Am	Qu
1/1/2	801945-2	7	<u> </u>	<u> </u>	9:10 Am	
6/6/2	1879108	٥,5	NIA	NIA	NIA	Gw
	-2					
	-3					
	-5					
$ \psi$	₩ -6	_ \		4	1	
						V
					·	
			<u>L_</u>	<u></u>		

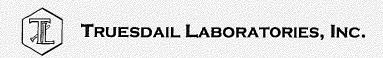
MVG 6/5/12

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

Gr 6/7/120

Turbidity/pH Check

		- I ui	bidity/pn C	TOOK		Adjusted to
Sample Number	Turbidity	pН	Date	Analyst	Need Digest	pH<2 (Y/N)
8 c 1916	>1	<i>ا</i> د	6-5-12	BE	X € 5	30 NA
801979	<u> </u>				NC	NO
		_				30 ten Ne
801918					×e5	30 lcA
801920	71	75			No	yes 16.00
801922(174)	<u> </u>	72			xes	30 kM
801930		<2 >2	+ +	- Y -	NO	XC216.40
80192611-3	<u>_</u>	72	4	BF	Xes	3cla A
T 80 1944(1-2)	<u> </u>	۲.2	6-6-12	- 50	1 767	Jeterr
D & < 1944 (-2)		72				<u> </u>
80 1945(1-2)		1				
8e 1944		12				
801948(1-3)						
801949 (1-2)					<u> </u>	J
801943		12 1	<u> </u>	k	No	NO
8019904-6	<\	〈2	6-7-12	BE	Xes	30 to A
801991-1	۲١	1 2				
801973	71	₹2				
G01978(10-12)		72			NO	yes 13:30
80 2003	71	>2			Xes	BeloA
8-1999	71	<2		J	ye5	30 10 A
80502	1-7	J	6-8-12	BI	1	1
	<u></u> ≺\	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	6-8-12	BE	No	₩c
802009	1-1'-	+ \	1	1		
802012		 	+ + + +			
802013		1	1 1			
8 6 2 0 20		-	 			
802033	¥	<u> </u>	6-11-12	BI	NC	No
80 2036	1 <1	1 74	8-11-12	100	<i>I</i>	+ /
80 20 37	-					1.
8.2038	2	 				
802039						
802040						
802041						
802042						
8.2043						
802044						
802045	Commercial Commercial					
802046		1		 		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
802047 L1-31	Y	>2				XC5 14.00
802048(1-51)	- Direction of the Control of the Co					
802049 (1-9)						
802050 L1-42)						
802051(1-60)						
80205261-9)						
60206c		12				Na
802061	-			1		
802c73	71	1/2	6-12-12	BE	Yes	30 10A
80 20 8 O	۲۱ کا	+ 1-	1	1	NO	Ne
802081	71	+			X < 5	30 bA
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	+-1	11	+ T	Ne	No
802082		<u> </u>		<u>'</u>		



Sample Integrity & Analysis Discrepancy Form

Clie	ont: E2	Lab # <u>801944</u>
Date	e Delivered:№ <u>6</u> / <u>©5</u> / 12 Time: <u>೩/:३०</u> By: □Mail ଔF	ield 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 ZIN/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)? <u>ช้ามะ C</u>	र्षYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ÆQYes □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 ☐Yes ☐No ☐N/A
10.	Did sample labels correspond with the client ID's?	⊠Yes □No □N/A
1 1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail ★Client	ØYes □No □N/A
12.	Were samples pH checked? pH = <u>See C</u> . ℘. ⅇ.	⊠Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Sives INO IN/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	adYes □No □N/A
1 5.	Sample Matrix: □Liquid □Drinking Water □Ground V □Sludge □Soil □Wipe □Paint □Solid 🗯	
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	L. Shabunny

EXCELLENCE IN INDEPENDENT TESTING



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

June 21, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-195, GROUNDWATER MONITORING

PROJECT, TLI NO.: 801945

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-195 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, pH, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on June 5, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Alledruel It

Michael Ngo

Quality Assurance/Quality Control Officer

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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801945

Date: June 21, 2012 **Collected:** June 5, 2012

Received: June 5, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 4500-H B	рН	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba
\$M 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn



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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Laboratory No.: 801945
Date Received: June 5, 2012

Analytical Results Summary

Lab Sample I	D Field ID	Analysis Method	Extraction Method	Sample Date	Sample Tim	ne Parameter	Result	Units	RL
801945-001	PE-01-195	E120.1	NONE	6/5/2012	10:00	EC	4960	umhos/cm	2.00
801945-001	PE-01-195	E200.8	LABFLT	6/5/2012	10:00	Chromium	6.8	ug/L	1.0
801945-001	PE-01-195	E218.6	LABFLT	6/5/2012	10:00	Chromium, hexavalent	6.5	ug/L	0.20
801945-001	PE-01-195	SM2540C	NONE	6/5/2012	10:00	Total Dissolved Solids	2840	mg/L	125
801945-001	PE-01-195	SM4500HB	NONE	6/5/2012	10:00	PH	7.36	pH	4.00
801945-002	TW-03D-195	E120.1	NONE	6/5/2012	10:00	EC	8370	umhos/cm	2.00
801945-002	TW-03D-195	E200.8	LABFLT	6/5/2012	10:00	Chromium	906	ug/L	2.0
801945-002	TW-03D-195	SM2540C	NONE	6/5/2012	10:00	Total Dissolved Solids	4760	mg/L	250
801945-002	TW-03D-195	SM3500-CrB	LABFLT	6/5/2012	10:00	Chromium, hexavalent	922	ug/L	262
801945-002	TW-03D-195	SM4500HB	NONE	6/5/2012	10:00	PH	7.18	pH	4.00

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results: Results below 0.01 will have two (2) significant figures.

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

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Page 1 of 7

Laboratory No. 801945

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 6/5/2012 9:30:00 PM

	Ū	ampies :							
Field ID					Lab ID	Col	lected	Matr	ix
PE-01-195 TW-03D-195	and the second s				801945-001 801945-002		/2012 10:00 /2012 10:00	Wat Wat	
Specific Conductivity - E	PA 120.1			Batch	06EC12A				
Parameter		Unit		Anal	yzed	DF	MDL	RL	Result
801945-001 Specific Conductivity 801945-002 Specific Conductivity		umhos/oumhos/o		06/07/ 06/07/		1.00 1.00	0.116 0.116	2.00	4960 8370
Method Blank									
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Re Ni	sult O				Lab ID =	801945-002
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00		sult 370	Expected 8370	F	RPD 0.00	Accepta 0 - 10	ance Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00		sult)9	Expected 706	Ī	Recovery 100.	90 - 11	
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00		sult 08	Expected 706	1	Recovery 100.	90 - 11	
Parameter Specific Conductivity	Unit umhos	DF 1.00		sult 31	Expected 998		Recovery 98.3	Accept 90 - 11	ance Range 0

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 2 of 7 Printed 6/21/2012

Chrome VI by EPA 218.6

Batch 06CrH12C

Parameter		Unit	Anal	lyzed	DF	MDL	RL	Result
801945-001 Chromium, Hexa	valent	ug/L		/2012 12:24	1.00	0.0250	0.20	6.5
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	801948-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 4.40	Expected 4.43		RPD 0.577	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.200	Expected 0.200		Recovery 100.0	Accepta 70 - 13	ance Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.90	Expected 5.00		Recovery 98.0	90 - 11	ance Range 0 801944-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.05	Expected/Add 1.12(1.00)	ded	Recovery 92.5	90 - 11	ance Range 0 801944-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 50.0	Result 1740	Expected/Add 1750(1000)	ded	Recovery 98.9	90 - 11	ance Range 0 801945-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 16.3	Expected/Add 16.5(10.0)	ded	Recovery 98.2	90 - 11	ance Range 0 : 801948-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 9.34	Expected/Add 9.43(5.00)	ded	Recovery 98.2	90 - 11	ance Range 0 : 801948-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 8.50	Expected/Add 8.68(5.00)	ded	Recovery 96.4	90 - 11	ance Range 0 : 801948-003
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 7.91	Expected/Add 8.06(5.00)	ded	Recovery 97.0	Accept 90 - 11	ance Range 0



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Chromium, Hexavalent b	y SM 350	0-Cr B	Batch	06CrH12A						
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result		
801945-002 Chromium, Hexa	valent	ug/L	06/11	/2012 18:43	26.2	39.3	262	922.		
Method Blank										
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND					801945-002		
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 26.2	Result 952.	Expected 922		RPD 3.25		ance Range		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 100.	Expected 100.		Recovery 100.	90 - 110	ance Range) 801945-002		
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 26.2	Result 3580	Expected/A 3540(2620)						
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 60.7	Expected 60.0		Recovery 101.		ance Range 0		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 60.7	Expected 60.0	- 10.00	Recovery 101.	Acceptance Ran 90 - 110			
pH by SM 4500-H B			Batch	06PH12E						
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result		
801945-001 pH 801945-002 pH		pH pH		6/2012 09:45 6/2012 09:48	1.00 1.00		4.00	7.36		
Duplicate								= 801945-002 -		
Parameter pH Lab Control Sample	Unit pH	DF 1.00	Result 7.19	Expected 7.18		RPD 0.139		ance Range		
Parameter pH MRCVS - Primary	Unit pH	DF 1.00	Result 7.01	Expected 7.00		Recovery 100.		ance Range 0		
Parameter pH	Unit pH	DF 1.00	Result 7.03	Expected 7.00		Recovery 100.	Acceptance Rang 90 - 110			

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Total Dissolved Solids by SM 2540 C

Batch 06TDS12B

Total Dissolved Solids (0 0	Duton						
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
801945-001 Total Dissolved	Solids	mg/L	06/06	/2012	1.00	0.400	00 125 2840	
801945-002 Total Dissolved		mg/L	06/06	3/2012	1.00	1.00 0.400 250. 476		4760
Method Blank							•	
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	801974-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 249	Expected 256	F	RPD 2.77	Accepta 0 - 5	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 491	Expected 500.	F	Recovery 98.2	Accepta 90 - 11	ance Range 0



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Metals by EPA 200.8, Dissolved

Batch 061412A

Wetars by EFA 200.0, Di		11-4	Anal	vzed	DF	MDL	RL	Result
Parameter		Unit	Anal			****		
801945-001 Chromium		ug/L		2012 21:13	5.00	0.195	1.0	6.8
801945-002 Chromium	······································	ug/L	06/14/	2012 21:20	10.0	0.390	2.0	906.
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Low Level Calibration	Nerification							
Parameter	Unit	DF	Result	Expected		Recovery		ance Rang
Chromium	ug/L	1.00	0.220	0.200		110.	70 - 13	J
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery		ance Rang
Chromium	ug/L	5.00	98.5	100.		98.5	85 - 11	
Matrix Spike							Lab ID =	801990-00
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	•	ance Rang
Chromium	ug/L	5.00	98.2	100.(100.)		98.2	75 - 12	
Matrix Spike Duplica	te						Lab ID =	: 801990-00
Parameter	Unit	DF	Result	Expected/A	dded	Recovery	•	ance Rang
Chromium	ug/L	5.00	100.	100.(100.)		100.	75 - 12	5
MRCCS - Secondary	1							
Parameter	Unit	DF	Result	Expected		Recovery		ance Rang
Chromium	ug/L	1.00	9.50	10.0		95.0	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery		ance Rang
Chromium	ug/L	1.00	9.59	10.0		95.9	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Ran
Chromium	ug/L	1.00	9.49	10.0		94.9	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Ran
Chromium	ug/L	1.00	9.72	10.0		97.2	90 - 11	U
Interference Check	Standard A							
Parameter	Unit	DF	Result	Expected		Recovery	Accep	tance Ran
Chromium	ug/L	1.00	ND	0.00				

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Client: E2 Consulting Engineers, Inc.		Project Name:		PG&E Topock Project		Page 7 of 7	
		Project Number:		: 424973.01.DM		Printed 6/21/2012	
Interference Check Sta	indard A						
Parameter Chromium Interference Check Sta	Unit ug/L andard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interference Check Sta	Unit	DF	Result	Expected	Recovery	Acceptance Range	
	ug/L	1.00	9.23	10.0	92.3	80 - 120	
Parameter Chromium Serial Dilution	Unit ug/L	DF 1.00	Result 9.76	Expected 10.0	Recovery 97.6	Acceptance Range 80 - 120 Lab ID = 801752-007	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range	
Chromium	ug/L	25.0	75.2	77.0	2.32	0 - 10	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

L. Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 06TDS12B

Date Analyzed: 6/11/12

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL,	Reported Value, ppm	DF
Blank	100	72.4956	72.4958	72.4956	0.0002	No	0.0000	0,0	25.0	ND	1
801944-1	10	50.3793	50.4202	50.4202	0.0000	No	0.0409	4090.0	250.0	4090.0	11_
801944-2	10	49.5176	49.5628	49.5625	0.0003	No	0.0449	4490.0	250.0	4490.0	1
801945-1	20	51.4248	51.4821	51.4817	0.0004	No	0.0569	2845.0	125.0	2845.0	1
801945-2	10	48.0104	48.0581	48.0580	0.0001	No	0.0476	4760.0	250.0	4760.0	1
801948-1	100	68.3860	68.4164	68.4162	0.0002	No	0.0302	302.0	25.0	302.0	1
801948-2	100	74.7091	74.7358	74.7356	0.0002	No	0.0265	265.0	25.0	265.0	1
801948-3	100	72.8484	72.8764	72.876	0.0004	No	0.0276	276.0	25.0	276.0	1
801949-1	50	78.3992	78.4447	78.4444	0.0003	No	0.0452	904.0	50.0	904.0	1
801949-2	50	76.5132	76.5416	76.5413	0.0003	No	0.0281	562.0	50.0	562.0	1
801974-1	100	74.7312	74.7568	74.7568	0.0000	No	0.0256	256.0	25.0	256.0	1
801974-1D	100	71.3105	71.3358	71.3354	0.0004	No	_0.0249	249.0	25.0	249.0	1
LCS	100	73.1365	73.1859	73.1856	0.0003	No	0.0491	491.0	25.0	491.0	1
802014	50	76.5457	76.6465	76.6464	0.0001	No	0.1007	2014.0	50.0	2014.0	1
802015	100	74.5369	74.5767	74.5764	0.0003	No	0.0395	395.0	25.0	395.0	1
				1							
							i				

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	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	1 491		98.2%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801974-1	0.0256	0.0249	1.4%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

$$\% Difference = \frac{\left| \frac{1}{A \text{ or } B - C} \right|}{C} \times 1000$$

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Reviewer Signature

Jenny 7

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 06TDS12B Date Analyzed: 6/11/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3	
			ļ		
801944-1	7450	0.55	4842.5	0.84	
801944-2	7720	0.58	5018	0.89	
801945-1	4960	0.57	3224	0.88	
801945-2	8260	0.58	5369	0.89	
801948-1	536	0.56	348.4	0.87	
801948-2	446	0.59	289.9	0.91	
801948-3	476	0.58	309.4	0.89	
801949-1	1550	0.58	1007.5	0.90	
801949-2	1017	0.55	661.05	0.85	
801974-1	454	0.56	295.1	0.87	
801974-1D	454	0.55	295.1	0.84	
LCS					
802014	3530	0.57	2294.5	0.88	
802015	228	1.73	148.2	2.67	
	-228	#VALUE!	148.2	-#VALUE!-	
	228	#VALUE!	148.2	-#VALUE!	
		· ·			
		<u></u>			
			<u> </u>		
		·			
		. 			

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

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-195] 801945

COC Number

	ROUND TIME	10 Days		
DATE	06/05/12	PAGE 1	OF	1
-				***************************************

COMPANY CH2M HILL /E2 PROJECT NAME PG&E Topock IM3Plant-EW	COMMENTS
PHONE 530-229-3303 FAX 530-339-3303	/
530-229-3303 FAX 530-339-3303 / Ø / / / / / / / /	
	/ / &/
ADDRESS 155 Grand Ave Ste 1000 /8 / / / / / / / / / / / / / / / / /	
Oakland, CA 94612	
P.O. NUMBER 424973.01.DM	R OF CONTAINERS
Oakland, CA 94612 P.O. NUMBER 424973.01.DM SAMPLERS (SIGNATURE AUTE TIME DESCRIPTION	
	NUMBER
SAMPLE I.D. DATE TIME DESCRIPTION O S S S S S S S S S S S S S S S S S S	
PE-01-195 06/05/12 10:00 Ground water X X X X X	4 DH=7 37,008/
TW-03D-195 06/05/12 10:00 Ground water X X X X X	4 121=7 200.7
The same Conditions	
	-
	TOTAL NUMBER OF CONTAINERS

	HAIN OF CUSTODY S	SAMPLE CONDITIONS		
Signature (Relinquished)	Printed Name Fond HEC	Company/ Agency	Date/ 6-5-12 Time 1500	RECEIVED COOL □ WARM □ 4.2 °C
Signature (Received)	Printed // po// o	Company/ Agency	Date/ 6-5-12 Time 15:06	CUSTODY SEALED YES NO 🗗
Signature (Relinquished)	Printed HIPS/170	Company/ Agency	Date/ 6-5-67 Time	SPECIAL REQUIREMENTS:
Signature (Received)	Printed Shakucina	Company/ Agency	Date/ 6/5/12 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

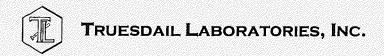
Date	Lab Number	Initial all	Duffer Add 14 (2)		I	Т
	801907	Initial pH	Buffer Added (mL)		Time Buffered	Initials
			<u> </u>	NA	MA	1
6/5/12	801909-1	9.5	NIA	NIA	NIA	6
	2					
					·	
						. /
	-9					
	-6					
1 1	V -7	<u> </u>	<u> </u>	4, 1		
6/5/12	801888908	9.5	MIA	NA	NIA	Cul
6/6/12	801944-11		2 ml	9.5	8:55 Am	R
<u>\</u>	8=1944-2	1	4		9:00 Am	J
6/6/12	8=1945-1	Γ.	2 m	9.5	9:05 AM	Qu
	801945-2	7	L l	L ·	9:10 Am	<u></u>
6/6/2	8-19484	۹,5	NIA	NIA	NIA	(Tw
	-2				1	
	-3					
	-1					
	-5					
	-6			1		
				4		
					-	
						

MV4 6/5/12

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

Gu 6/7/12 042 Turbidity/pH Check

			Didity/pii C			Adjusted to
Sample Number	Turbidity	pН	Date	Analyst	Need Digest	pH<2 (Y/N)
80 1916	71	<2°	6-5-12	BE	× e 5	.30 \n A
801979	て i	ì	١		NC	NO
801918						30 teA No
801920	71				xes	30 lcA
		72	~-		No	yes 16.00
801922(174)	<u> </u>	12			Xes	30 lcA
801930		72	+	- <u>*</u>	No	xe516.00
80192611-3	<u>.</u>		6-6-12	BE	Xe5	3010A
T 80 19441-2)	<u> </u>	< Z	8-6-12		1	
D & < 1944 (-2)		72				
80 1945(1-2)		1				
80 1944		12	 			
801948(1-3)		<u> </u>			<u> </u>	
801949 (1-2)		<u> </u>			<u> </u>	*
801943		12 1	<u> </u>	- J	No	N C
8019904-6	<\	1 2	6-7-12	BE	Xes	30 \0 A
801991-1	۲۱	< Z				
801973	>1	イ 2				
GO19 78(10-12)	. < 1	72	-		NO	yes 13:30
80 2003	71	>2			Xes	3eloA
8-1949	71	<2		1	ye5	30 10 A
80200\$	1	J	6-8-12	BZ	1	
802009	₹\	<2	6-8-12	BE	No	₩¢
802012	+ , , -	T T		1		
802013						
8 = 2 = 20						
802033	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	42	6-11-12	BZ	NC	No
80 2036	1 <1	+	8			
80 20 37	 	_	+			
8-2038						
802039				+		
802040		 				
8.2041			 			
802042		 				
8-2043						
802044						
802045						
802046						XC5 14.00
802047 L1-31	į	>2				725 14.00
802048(1-51)	ne (commente				· ·	
802049 (1-9)						
802050 L1-42)					
802051 (1-60)						
802052L1-9)						_ V
80206c		1 2				No
805081				V		l
802c73	71	1 1/2	6-12-12	- BE	¥e3	30 10A
80 20 80	<u>ا</u>	1 1	1	\	No	Ne
802081	71				X < 5	30 bA
802082	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1		1	No	No.
806080	1 1					



Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E</u> 2	Lab # <u>801945</u>
Date	e Delivered:₽ <u>6 ₽5 12 Time:2/:30</u> By: □Mail 💆	Field Service
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
<i>3</i> .	Are there any special requirements or notes on the COC?	□Yes □No ⊠N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No AN/A
<i>5</i> .	Were all requested analyses understood and acceptable?	Ø√yes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? <u>Y 必 C</u>	Ø Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	A Yes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ⊄⊠N/A
9.	Does the number of samples received agree with COC?	Ø√Yes □No □N/A
10.	Did sample labels correspond with the client ID's?	⊈Yes □No □N/A
1 1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No æN/A
12.	Were samples pH checked? pH = <u>See C. O. C.</u>	⊠Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	√ZYes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH 🙇 Std	o⊈Yes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water ☐Ground	l Water □ Waste Water
	□Sludge □Soil □Wipe □Paint □Solid □	□Other
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	L. Strabuniue



EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 25, 2012

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

Dear Mr. Duffy:

SUBJECT:

CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-365 PROJECT, GROUNDWATER

MONITORING, TLI No.: 802097

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-365 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 June 12, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

No other violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 802097

Date: June 25, 2012

Collected: June 12, 2012 Received: June 12, 2012

<u>ANALYST LIST</u>

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



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Laboratory No.: 802097

Date Received: June 12, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
802097-001	SC-700B-WDR-365	E120.1	NONE	6/12/2012	10:00	EC	7310	umhos/cm	2.00
802097-001	SC-700B-WDR-365	E200.8	NONE	6/12/2012	10:00	Chromium	ND	ug/L	1.0
802097-001	SC-700B-WDR-365	E200.8	NONE	6/12/2012	10:00	Manganese	1.2	ug/L	1.0
802097-001	SC-700B-WDR-365	E218.6	LABFLT	6/12/2012	10:00	Chromium, hexavalent	ND	ug/L	0.20
802097-001	SC-700B-WDR-365	SM2130B	NONE	6/12/2012	10:00	Turbidity	ND	NTU	0.100
802097-001	SC-700B-WDR-365	SM2540C	NONE	6/12/2012	10:00	Total Dissolved Solids	4080	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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Printed 6/25/2012

Laboratory No. 802097

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 6/12/2012 9:30:00 PM

Field ID			Lab ID		Collected		Matrix	
SC-700B-WDR-365				802097-001	06/12/2012 10:00		Water	
Specific Conductivity - EPA 120.1			Batch	n 06EC12B				
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
802097-001 Specific Conduct	rivity	umhos/	cm 06/15	5/2012	1.00	0.116	2.00	7310
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID = 802097-001	
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7310	Expected 7310	F	RPD 0.00		nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 702	Expected 706	F	Recovery 99.4		nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 705	Expected 706	F	Recovery 99.8	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 992	Expected 998	F	Recovery 99.4	Accepta 90 - 110	nce Range

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories. 008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch 06CrH	12G	
-------------	-----	--

Parameter		Unit	Ana	llyzed)F	MDL	RL	Result
802097-001 Chromium, Hexa	valent	ug/L	06/18	3/2012 14:39 1	.00	0.0250	0.20	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	802154-002
Parameter Chromium, Hexavalent Low Level Calibration \	Unit ug/L /erification	DF 1.00	Result 7.83	Expected 7.83	RF (PD 0.00766	Accepta 0 - 20	ince Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.181	Expected 0.200		ecovery 90.5	Accepta 70 - 130	ince Range)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.92	Expected 5.00		ecovery 98.5	90 - 110	nce Range) 802097-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.06	Expected/Adde 1.12(1.00)		ecovery 94.1	90 - 110	nce Range 802154-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.16	Expected/Adde 1.17(1.00)		ecovery 99.8	90 - 110	nce Range 802154-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 17.6	Expected/Adde 17.8(10.0)		covery 97.4	Accepta 90 - 110	nce Range
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.91	Expected 5.00		covery 98.3	Accepta 90 - 110	nce Range
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.96	Expected 10.0		covery 19.6	Accepta 95 - 105	nce Range
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0		covery 02.	Accepta 95 - 105	nce Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
802097-001 Chromium		ug/L	06/16	5/2012 03:26 5	00	0.195	1.0	ND
Manganese		ug/L	06/16	5/2012 03:26 5	00	0.270	1.0	1.2
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	802097-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Manganese	ug/L	5.00	1.19	1.20		0.669	0 - 20	
Low Level Calibration	Verification	l						
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.190	0.200		95.1	70 - 130)
Manganese	ug/L	1.00	0.155	0.200		77.6	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	98.3	100.		98.3	85 - 118	5
Manganese	ug/L	5.00	92.5	100.		92.5	85 - 115	5
Matrix Spike							Lab ID =	802097-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	101.	100.(100.)		101.	75 - 125	5
Manganese	ug/L	5.00	95.3	101.(100.)		94.1	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	10.0	10.0		100.	90 - 110)
Manganese	ug/L	1.00	9.56	10.0		95.6	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.68	10.0		96.8	90 - 110	•
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.72	10.0		97.2	90 - 110	•

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Total Dissolved Solids Parameter		Unit	Δna	lyzed	DF	MDL	RL	Result
			·					
802097-001 Total Dissolved	Solids	mg/L	06/15	5/2012	1.00	0.400	250.	4080
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	802097-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	4130	4080		1.22	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	502	500.		100.	90 - 110)
Turbidity by SM 2130 B Parameter		Unit		06TUC12G llyzed	DF	MDL	RL	Result
Parameter		Unit NTU	Ana		DF 1.00	MDL 0.00	RL 0.100	Result ND
Parameter			Ana	lyzed				
Parameter 802097-001 Turbidity	Unit		Ana	lyzed				
Parameter 802097-001 Turbidity Method Blank		NTU	Ana 06/13	lyzed				
Parameter 802097-001 Turbidity Method Blank Parameter	Unit	NTU DF	Ana 06/13 Result	lyzed			0.100	
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity	Unit	NTU DF	Ana 06/13 Result	lyzed	1.00		0.100 Lab ID =	ND
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity Duplicate	Unit NTU	DF 1.00	Ana 06/13 Result ND	llyzed 3/2012	1.00	0.00	0.100 Lab ID =	ND 802097-001
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter	Unit NTU Unit	DF 1.00	Ana 06/13 Result ND Result	llyzed 8/2012 Expected	1.00	0.00 RPD	0.100 Lab ID = Accepta	ND 802097-001
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity	Unit NTU Unit	DF 1.00	Ana 06/13 Result ND Result	llyzed 8/2012 Expected	1.00 F	0.00 RPD	0.100 Lab ID = Accepta 0 - 20 Accepta	ND 802097-001 ance Range
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample	Unit NTU Unit NTU	DF 1.00 DF 1.00	Ana 06/13 Result ND Result ND	Expected 0.00	1.00 F	0.00 RPD 0	0.100 Lab ID = Accepta 0 - 20	ND 802097-001 ance Range
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter	Unit NTU Unit NTU Unit NTU	DF 1.00 DF 1.00	Ana 06/13 Result ND Result ND Result	Expected 0.00 Expected	1.00 F	0.00 RPD 0 Recovery	0.100 Lab ID = Accepta 0 - 20 Accepta	ND 802097-001 ance Range
Parameter 802097-001 Turbidity Method Blank Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter Turbidity	Unit NTU Unit NTU Unit NTU	DF 1.00 DF 1.00	Ana 06/13 Result ND Result ND Result	Expected 0.00 Expected	1.00 F	0.00 RPD 0 Recovery	0.100 Lab ID = Accepta 0 - 20 Accepta 90 - 110	ND 802097-001 ance Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

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Printed 6/25/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

/> Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 06TDS12C Date Analyzed: 6/19/12

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL,	Reported ² Value, ppm	DF
Blank	100	72.3864	72.3865	72.3864	0.0001	No	0.0000	0.0	25.0	ND	1
802073	50	49.0170	49.1302	49.1301	0.0001	No	0.1131	2262.0	50.0	2262.0	1
802097	10	50.9445	50.9856	50.9853	0.0003	No	0.0408	4080.0	250.0	4080.0	1
802116-5	100	74.9389	74.9823	74.9822	0.0001	No	0.0433	433.0	25.0	433.0	1
802127	100	72.9629	73.0208	73.0204	0.0004	No	0.0575	575.0	25.0	575.0	1
802139	100	67.1025	67.1551	67.1548	0.0003	No	0.0523	523.0	25.0	523.0	1
802152	50	75.9657	76.0179	76.0177	0.0002	No	0.0520	1040.0	50.0	1040.0	1
802154-1	50	65.4602	65.5251	65.5251	0.0000	No	0.0649	1298.0	50.0	1298.0	1
802154-2	50	72.0948	72.1662	72.1658	0.0004	No	0.0710	1420.0	50.0	1420.0	1
802154-3	50	71.3288	71.3897	71.3893	0.0004	No	0.0605	1210.0	50.0	1210.0	1
802154-4	50	68.5116	68.564	68.5636	0.0004	No	0.0520	1040.0	50.0	1040.0	1
802097D	10	51.0843	51.1258	51.1256	0.0002	No	0.0413	4130.0	250.0	4130.0	1
LCS	100	73.4941	73.5443	73.5443	0.0000	No	0.0502	502.0	25.0	502.0	1
802162-1	100	74.2305	74.2539	74.2537	0.0002	No	0.0232	232.0	25.0	232.0	1
802162-2	100	75.7634	75,786	75.7858	0.0002	No	0.0224	224.0	25.0	224.0	1
802162-3	100	67.1975	67.2491	67.249	0.0001	No	0.0515	515.0	25.0	515.0	1
802162-4	100	78.3796	78.4084	78.4081	0.0003	No	0.0285	285.0	25.0	285.0	1
802162-5	100	74.8668	74.8888	74.8885	0.0003	No	0.0217	217.0	25.0	217.0	1
802162-6	100	76.3421	76.3656	76.3655	0.0001	No	0.0234	234.0	25.0	234.0	1
802184-2	100	66.7140	66.7292	66.7292	0.0000	No	0.0152	152.0	25.0	152.0	1
802184-4	100	69.2099	69.2255	69.2255	0.0000	No	0.0156	156.0	25.0	156.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

A = weight of dish + residue in grams.

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

(A-B)	١.	1	n٥
(\overline{c})	1	1	U

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

Laboratory Control Sample (LCS) Summary

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

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802097	0,0408	0.0413	0.6%	≤5%	Yes
	14.0				

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

$$\% Difference = \frac{\frac{1}{2} m B - C}{C} \times 100$$

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

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

C = Average weight in (g).

Норе Т.

Reviewer Printed Name

Reviewer Signature

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 06TDS12C Date Analyzed: 6/19/12

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
802073	2980	0.76	1937	1.17
802097	7320	0.56	4758	0.86
802116-5	737	0.59	479.05	0.90
802127	929	0.62	603.85	0.95
802139	938	0.56	609.7	0.86
802152	1587	0.66	1031.55	1.01
802154-1	1940	0.67	1261	1.03
802154-2	2040	0.70	1326	1.07
802154-3	1820	0.66	1183	1.02
802154-4	1609	0.65	1045.85	0.99
802097D	7320	0.56	4758	0.87
LCS				
802162-1	369	0.63	239.85	0.97
802162-2	364	0.62	236.6	0.95
802162-3	834	0.62	542.1	0.95
802162-4	458	0.62	297.7	0.96
802162-5	341	0.64	221.65	0.98
802162-6	345	0.68	224.25	1.04
802184-2	275	0.55	178.75	0.85
802184-4	285	0.55	185.25	0.84
<u> </u>		† · · · · · · · · · · · · · · · · · · ·		·



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1420° (714)	ESDAIL LABORATOR 1 Franklin Avenue, T 730-6239 FAX: (714) truesdail.com	ustin, CA 92	dh	0209	CHA		F CU				ORD				-	COC N TURNAI DATE	ROUNE		1 PAGI	0 Days	OF 1
COMPANY	E2						7	7	$\overline{}$	7	7 /	7	7	7	$\overline{}$	7	/ /	7	77		
PROJECT NAME	PG&E Topock								/		/ /				/ ,	/ /			/ /	COMM	ENTS
PHONE	(530) 229-3303		fax <u>(530</u>	339-3303		/	/ /	/	/	/ /		/ ,	/ /	/ /	$^{\prime}$ $/$			$/ /_{\alpha}$			
ADDRESS	155 Grand Ave	Ste 1000	sintekina.				/_	1	\mathcal{L}		//	' /				/ /	/ /	WER.	7		
	Oakland, CA 94	612	no-no-ir			/2	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	/ 👯		/ /	/ /				/ /	/ /			/		
P.O. NUMBER	424973.01.DM		TEAM			Fillered		tance /	' ~ /	/ /;	ş /	/ ,	/ /	/ /	' /			CONTAINERS			
SAMPLERS (SIGNA	ATURE CON				270	1 997 (9:0) 1 4P / 1	Specific Condition	TDS (SM2540)	\$ / S	dily (SM212		' /				/ /	NUMBE	o /			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	185	70tB)	/👸 /	[SQ /	/	Turbidrity (/		N.C.				
SC-700B-WDF	₹-365	06/12/12	1000	Water	Х	х	х	х		х							3		pH:	60	20.7

Rec'd 06/12/12 s14a 8 0 2 0 9 7



For Sample Conditions See Form Attached

TOTAL NUMBER OF CONTAINERS

СН	IAIN OF CUSTODY SIG	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name Kon HECPS	Company/ Agency OM/	Date/ 4-12-12 Time /5-00	RECEIVED COOL 🗹 WARM 🗆 4.3 °C
Signature (Received)	Printed APOILS	Company/ Agency	Date/ 6-12-12 Time 15:00	CUSTODY SEALED YES NO 🗹
Signature (Relinquished)	Printed Name #/pol/fo	Company/ Agency +C/	Date/ 6-12-12 Time 6-12-56	SPECIAL REQUIREMENTS:
Signature Shalen when	Printed Lindler	Company/ 72]	Date/ JUN 1 2 2012	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

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
	801907	٩.5	N/A	NA	N/A	niliais
, , ,			NIA	MA		1
6/3/14	801909-1	1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	NIN	NA	16
	-3					
	-4			_		
						Ĭ-/
	-9					<u> </u>
	-6					
4	V -7	<u> </u>	· •	V,		<u> </u>
6/5/12	 	9.5	NIA	NA	~/A	کسکی
6/6/12	801944-1	7	2 ml	9,5	8:55 Am	B
<u>\</u>	8-1944-2	7	<u> </u>	<u> </u>	9:00 Am	T
6/6/12.	801945-1	Γ	2 11	9,5	9,05 Am	Qu
<u> </u>	801945-2	7	J.	1	9:10 Am	1,
6/6/2	8019484	۹,5	NIA	NIA	NIA	Gu
	-2			1		ì
	-3		·			
	-4					
·	-5					
	√ -6		Į l	1	1	
6/2/12	80191-1	9.5	NIA	N/A	WIA	(7.)
7	7 -5	7	7	2	1	7.
6/13/12	802097	7	2 ml/100	9.5	8-30Am	(2)
	802135-1	9.5	NIA	NIA	NIA	MAN
	1 -2	4	<u> </u>		1	1
	-3				1	7.
4	4 -4	7		1	<i>J</i>	HAV
6/14/12	802152	9.5	N/A	N/A	N/A	144
	802157-1					
	-2					
	-3					
↓	V -4	1	+	1	1	

MV9 6/5/12 Turbidity/pH Check

		141	biaity/pH C	HICCK		
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 5083	>1	12	6-12-12	BE	× < 5	3010A
89 2097	<\	72	6-13-12	BE	Xes	3010A xes150
89211617-91	J	J			No	7
80 21 35 (1-3)	<١	< 2	6-14-12	BE	Yes	3010.4
EOZIZI (10-12)		>2			No	xe5: 16!0 c
802122(1-7)						
802126(1-6)		•				1 4
80 212g		<2		J.	No	NO
802142(1-34		72			N°	XC5: 16:00
802148	71	42			xes	3010 A
802149	J	J	-	V	1	<i>Y</i>
302152	< 1	<2	6-15-12	BZ	x 25	3-1.4
802153						
80215441-4)		\$				
701268(1-10)					No	No
801269 (1-10)	11	\\				l l
801270	/ 71				x 25	30 la 4
801271	<u> </u>		· \		<u> </u>	de de
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Sample Integrity & Analysis Discrepancy Form

Clie	ent: <u>E 2</u>	Lab # 802097
Dat	e Delivered:Û <u>6 / l&</u> ∤12 Time: <u>Ů∶8</u> 0 By: □Mail 蛟l	Field Service
1.	Was a Chain of Custody received and signed?	Ø(Yes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No AN/A
}.	Are there any special requirements or notes on the COC?	□Yes □No ⊅N/A
•	If a letter was sent with the COC, does it match the COC?	□Yes □No □N/A
	Were all requested analyses understood and acceptable?	odYes □No □N/A
	Were samples received in a chilled condition? Temperature (if yes)? <u>४.३° C</u>	र्खYes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	rd(Yes □No □N/A
	Were sample custody seals intact?	✓ □Yes □No ÆN/A
	Does the number of samples received agree with COC?	ZYes □No □N/A
•	Did sample labels correspond with the client ID's?	⊠Yes □No □N/A
•	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No \⊠\n/A
	Were samples pH checked? pH = <u>S@</u> C. O. C	ØQYes □No □N/A
	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Æ(Yes □No □N/A
	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH	QYes □No □N/A
	Sample Matrix: □Liquid □Drinking Water □Ground W □Sludge □Soil □Wipe □Paint □Solid Ø	111 _ 1
	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	d. Stalener

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 28, 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-366 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 802226

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-366 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 June 19, 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

Milwel To

Michael Ngo

Quality Assurance/Quality Control Officer

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 802226

Date: June 28, 2012

Collected: June 19, 2012 Received: June 19, 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 / Maksim Gorbunov

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Laboratory No.: 802226

Date Received: June 19, 2012

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802226-001	SC-700B-WDR-366	F120.1	NONE	6/19/2012	13:00	EC	7350	umhos/cm	2.00
802226-001	SC-700B-WDR-366		NONE	6/19/2012	13:00	Chromium	ND	ug/L	1.0
802226-001	SC-700B-WDR-366		NONE	6/19/2012	13:00	Manganese	4.2	ug/L	1.0
802226-001	SC-700B-WDR-366		LABFLT	6/19/2012	13:00	Chromium, hexavalent	ND	ug/L	0.20
802226-001	SC-700B-WDR-366		NONE	6/19/2012	13:00	Turbidity	ND	NTU	0.100
802226-001	SC-700B-WDR-366		NONE	6/19/2012	13:00	Total Dissolved Solids	4050	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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Printed 6/28/2012

Acceptance Range

90 - 110

Page 1 of 6

Laboratory No. 802226

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Unit

umhos

DF

1.00

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Parameter

Specific Conductivity

Samples Received on 6/19/2012 8:00:00 PM

Collected Matrix Field ID Lab ID 802226-001 SC-700B-WDR-366 06/19/2012 13:00 Water Batch 06EC12C Specific Conductivity - EPA 120.1 DF RL Unit Analyzed MDL Result Parameter 7350 06/21/2012 1.00 0.116 2.00 802226-001 Specific Conductivity umhos/cm Method Blank Unit DF Result Parameter 1.00 ND umhos Specific Conductivity Lab ID = 802226-001 Duplicate **RPD** Unit DF Result Expected Acceptance Range Parameter 7340 7350 0.136 0 - 10Specific Conductivity umhos 1.00 Lab Control Sample DF Expected Recovery Acceptance Range Parameter Unit Result 90 - 110 708 706 100. Specific Conductivity umhos 1.00 MRCCS - Secondary DF Result Expected Recovery Acceptance Range Unit Parameter 1.00 709 706 100. 90 - 110 Specific Conductivity umhos MRCVS - Primary

Result

980.

Expected

998

Recovery

98.2

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 prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Page 2 of 6 Printed 6/28/2012

Chrome VI by EPA 218.6

Batch 06CrH12H

CHICHIE ALDA ELW TION			50.0.,	000					
Parameter		Unit	Analyzed		DF	MDL	RL	Result	
802226-001 Chromium, Hexa	ug/L	06/20/2012 13:19		1.00	0.0250	0.20	ND		
Method Blank									
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND						
Duplicate							Lab ID =	802228-002	
Parameter Unit Chromium, Hexavalent ug/L		DF 1.00	Result 1.20	Expected 1.21	F	RPD 0.397	Accepta 0 - 20	ince Range	
Low Level Calibration	Verification								
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.223	Expected 0.200	ĺ	Recovery 112.	Accepta 70 - 130	ince Range)	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.86	Expected 5.00	ſ	Recovery 97.1	Acceptance Range 90 - 110 Lab ID = 802226-001		
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.02	Expected/Add 1.08(1.00)	ed I	Recovery 94.6	Accepta 90 - 110	ince Range)	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.86	Expected 5.00	I	Recovery 97.3	Accepta 90 - 110	nce Range)	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.53	Expected 10.0		Recovery 95.3	Accepta 95 - 105	ince Range	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

Printed 6/28/2012

Page 3 of 6

Parameter		Unit	Ana	lyzed D	F N	MDL RL	Result
802226-001 Chromium		ug/L		0/2012 20:56 5.0	***************************************	***************************************	
		_					ND
Manganese		ug/L	06/20	0/2012 20:56 5.0	00 0.27	0 1.0	4.2
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected	RPD	Accept	ance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20	
Manganese	ug/L	5.00	3.92	4.19	6.78	0 - 20	
Low Level Calibratio	n Verificatior	1					
Parameter	Unit	DF	Result	Expected	Recove	ry Accept	ance Range
Chromium	ug/L	1.00	0.222	0.200	111.	70 - 13	0
Manganese	ug/L	1.00	0.206	0.200	103.	70 - 13	0
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recove	ry Accept	ance Range
Chromium	ug/L	5.00	100.0	100.	100.0	-	_
Manganese	ug/L	5.00	104.	100.	104.	85 - 11	5
Matrix Spike						Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected/Added	Recove	ry Accept	ance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 12	_
Manganese	ug/L	5.00	106.	104.(100.)	102.	75 - 12	5
Matrix Spike Duplica	te					Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected/Added	Recove	ry Accept	ance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 12	_
Manganese	ug/L	5.00	106.	104.(100.)	101.	75 - 12	5
MRCCS - Secondary	/						
Parameter	Unit	DF	Result	Expected	Recove	ry Accepta	ance Range
Chromium	ug/L	1.00	10.3	10.0	103.	90 - 11	_
Manganese	ug/L	1.00	10.4	10.0	104.	90 - 11	כ
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recove	ry Accepta	ance Range
Chromium	ug/L	1.00	9.93	10.0	99.3	90 - 110	_

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Client: E2 Consulting En	gineers, Ind		roject Name: roject Numbe	PG&E Topo r: 424973.01.E	-		Printed 6	age 5 of 6 /28/2012
Interference Check S	tandard A							
Parameter	Unit	DF	Result	Expected	Re	covery	Accepta	ince Range
Manganese	ug/L	1.00	ND	0.00				
Interference Check S	tandard AB							
Parameter	Unit	DF	Result	Expected		covery	•	ince Range
Chromium	ug/L	1.00	9.97	10.0	9	9.7	80 - 120)
Interference Check S	tandard AB							
Parameter	Unit	DF	Result	Expected		covery	•	ince Range
Chromium	ug/L	1.00	9.94	10.0	9	9.4	80 - 120)
Interference Check S	tandard AB							
Parameter	Unit	DF	Result	Expected		covery	•	ince Range
Manganese	ug/L	1.00	10.2	10.0	1	02.	80 - 120)
Interference Check S	tandard AB							
Parameter	Unit	DF	Result	Expected		covery	-	ince Range
Manganese	ug/L	1.00	10.1	10.0	1	01.	80 - 120)
Total Dissolved Solids b	w SM 2540) C	Batch	06TDS12D				
Parameter	, OIII 20-1	Unit		lyzed	DF	MDL	RL	Result
802226-001 Total Dissolved	Solids	mg/L		/2012		0.757	250.	4050
Method Blank				• • •				***************************************
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate	J						Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected	RP	D	Accepta	ince Range
Total Dissolved Solids	mg/L	1.00	4200	4050	3	3.64	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Re	covery	Accepta	ince Range
Total Dissolved Solids	mg/L	1.00	491	500.	9	8.2	90 - 110)



Client: E2 Consulting Engineers, Inc.

Project Name:

PG&E Topock Project

Page 6 of 6

Project Number: 424973.01.DM

Printed 6/28/2012

Turbidity by SM 2130 B

Batch 06TUC12M

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802226-001 Turbidity		NTU	06/20	06/20/2012		0.100	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	802226-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.05	8.00		101.	90 - 110	
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	7.95	8.00		99.4	90 - 110	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12D Date Analyzed: 6/22/12

100		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
100	73.1398	73.1402	73.1399	0.0003	No	0.0001	1.0	25.0	ND	1
100	103.4167	103.4401	103.4401	0.0000	No	0.0234	234.0	25.0	234.0	1
100	112.8928	112.9165	112.9163	0.0002	No	0.0235	235.0	25.0	235.0	1
10	51.2514	51.2921	51.2919	0.0002	No	0.0405	4050.0	250.0	4050.0	1
50	50.7012	50.7461	50.7457	0.0004	No	0.0445	890.0	50.0	890.0	1
100	68.8392	68.8650	68.8648	0.0002	No	0.0256	256.0	25.0	256.0	1
100	72.4177	72.4439	72.4439	0.0000	No	0.0262	262.0	25.0	262.0	1
100	67.7736	67.8052	67.8049	0.0003	No	0.0313	313.0	25.0	313.0	1
10	75.3045	75.3467	75.3465	0.0002	No	0.0420	4200.0	250.0	4200.0	1
100	78.4005	78.4497	78.4496	0.0001	No	0.0491	491.0	25.0	491.0	1
<u>-</u> - <u>1</u>						; · ·				
	10 50 100 100 100	10 51.2514 50 50.7012 100 68.8392 100 72.4177 100 67.7736 10 75.3045	10 51.2514 51.2921 50 50.7012 50.7461 100 68.8392 68.8650 100 72.4177 72.4439 100 67.7736 67.8052 10 75.3045 75.3467	10 51.2514 51.2921 51.2919 50 50.7012 50.7461 50.7457 100 68.8392 68.8650 68.8648 100 72.4177 72.4439 72.4439 100 67.7736 67.8052 67.8049 10 75.3045 75.3467 75.3465	10 51.2514 51.2921 51.2919 0.0002 50 50.7012 50.7461 50.7457 0.0004 100 68.8392 68.8650 68.8648 0.0002 100 72.4177 72.4439 72.4439 0.0000 100 67.7736 67.8052 67.8049 0.0003 10 75.3045 75.3467 75.3465 0.0002	10 51.2514 51.2921 51.2919 0.0002 No 50 50.7012 50.7461 50.7457 0.0004 No 100 68.8392 68.8650 68.8648 0.0002 No 100 72.4177 72.4439 72.4439 0.0000 No 100 67.7736 67.8052 67.8049 0.0003 No 10 75.3045 75.3467 75.3465 0.0002 No	10 51.2514 51.2921 51.2919 0.0002 No 0.0405 50 50.7012 50.7461 50.7457 0.0004 No 0.0445 100 68.8392 68.8650 68.8648 0.0002 No 0.0256 100 72.4177 72.4439 72.4439 0.0000 No 0.0262 100 67.7736 67.8052 67.8049 0.0003 No 0.0313 10 75.3045 75.3467 75.3465 0.0002 No 0.0420	10 51.2514 51.2921 51.2919 0.0002 No 0.0405 4050.0 50 50.7012 50.7461 50.7457 0.0004 No 0.0445 890.0 100 68.8392 68.8650 68.8648 0.0002 No 0.0256 256.0 100 72.4177 72.4439 72.4439 0.0000 No 0.0262 262.0 100 67.7736 67.8052 67.8049 0.0003 No 0.0313 313.0 10 75.3045 75.3467 75.3465 0.0002 No 0.0420 4200.0	10 51.2514 51.2921 51.2919 0.0002 No 0.0405 4050.0 250.0 50 50.7012 50.7461 50.7457 0.0004 No 0.0445 890.0 50.0 100 68.8392 68.8650 68.8648 0.0002 No 0.0256 256.0 25.0 100 72.4177 72.4439 72.4439 0.0000 No 0.0262 262.0 25.0 100 67.7736 67.8052 67.8049 0.0003 No 0.0313 313.0 25.0 10 75.3045 75.3467 75.3465 0.0002 No 0.0420 4200.0 250.0	10 51.2514 51.2921 51.2919 0.0002 No 0.0405 4050.0 250.0 4050.0 50 50.7012 50.7461 50.7457 0.0004 No 0.0445 890.0 50.0 890.0 100 68.8392 68.8650 68.8648 0.0002 No 0.0256 256.0 25.0 256.0 100 72.4177 72.4439 72.4439 0.0000 No 0.0262 262.0 25.0 262.0 100 67.7736 67.8052 67.8049 0.0003 No 0.0313 313.0 25.0 313.0 10 75.3045 75.3467 75.3465 0.0002 No 0.0420 4200.0 250.0 4200.0

Calculation as follows:

Filterable residue (TDS). mg/L =

Where:

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

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

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

Laboratory Control Sample (LCS) Summary

mano					
QC Std	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	98.2%	90-110%	Yes
LCSD	43.5				

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802226	0.0405	0.042	1.8%	≤5%	Yes
weeks testined					

Jenny T.

Analyst Printed Name

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

P =Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

% Difference =
$$\frac{A \cdot or B - C}{C} \times 10^{\circ}$$

where

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

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

C = Average weight in (g).

Hope T.

Reviewer Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12D Date Analyzed: 6/22/12

EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
427	0.55	277.55	0.84
428	0.55	278.2	0.84
7430	0.55	4829.5	0.84
1462	0.61	950.3	0.94
385	0.66	250.25	1.02
393	0.67	255.45	1.03
407	0.77	264.55	1.18
7430	0.57	4829.5	0.87
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	428 7430 1462 385 393 407	427 0.55 428 0.55 7430 0.55 1462 0.61 385 0.66 393 0.67 407 0.77	427 0.55 277.55 428 0.55 278.2 7430 0.55 4829.5 1462 0.61 950.3 385 0.66 250.25 393 0.67 255.45 407 0.77 264.55



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Particular of the second

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-366]

COC Number

TURNAROUND TIME

10 Days

DATE 06/19/12 PAGE 1 OF 1

											a a .	a co	a 2 0									
COMPANY	E2					***************************************	$\overline{}$	$\overline{}$	7	7	7	7	7 7	7	7	7	7	7	\overline{T}	7	7	
PROJECT NAME	PG&E Topock											. ,	,	/	/	/	/			/ /	СО	MMENTS
PHONE	(530) 229-3303		FAX (530)	339-3303			/ .	/ /	/ /	/	/ /	Rec'	^ ^	5/1 9 /1		6			/ /	′ /		
ADDRESS	155 Grand Ave	Ste 1000	***************************************								/S	15b	80	22		0						
	Oakland, CA 94					/~		1204			//									7		
P.O. NUMBER	424973.01.DM	and the second s	TEAM	_1_		Lab Filtered	200.7) C	/ ₁₁ Ce/	/ /	/ /	2130)		/ /	/ /	/ /	/ /	/	/	OF CONTAINERS	•		
SAMPLERS (SIGNA	TURE		رندر		Cr6 (218 6)) (Met.)	Specific (200.7)	TDS (SM2E.)	Turbidity (5.		/ /						NUMBE	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	18	10,0	\2005 2005	[§		/m/		\bot	_/_				/		/			
SC-700B-WDF	₹-366	06/19/12	1300	Water	х	х	х	х		х								3		h	U=6	(700.7
																<u> </u>		3	TOT.	4		NTAINERS
																	-				***************************************	



See Form Attached

€ H	IAIN OF CUSTODY SIG		SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name SON THELPS	Company/ Agency	Date/ 6 - 19 - 12 Time 15 - 00	RECEIVED COOL WARM 5.2°C
Signature (Received) 13 Daya G	Printed Name /B OHYAG	Company/ Agency TZ/	Date/6 -/ 5 -/ 2 Time /500	CUSTODY SEALED YES NO 1/2
Signature (Relinquished) /B - D aug acg	Printed B. DAYAG	Company/ Agency /L/	Date/ 6-/9-/2 Time 2000	SPECIAL REQUIREMENTS:
Signature (Received) Shabu www.	Printed Luda Name Luda	Company/ 747	Date/ 6/19/12 2014	ro
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

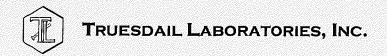
Date	Lab Number	Initial pH	Buffer Added (mL)	Fine! =!!	Time B es	T
(1)	801867-1	9.5		T	Time Buffered	
	80 2226		N/A	N/A	N/A	MG
100120112	80 2226	7	2 m1	9.5	10:45 AM	HAV
6/20112	80 9228-1	9.5	NIA	9.5	NIA	HAY
<u> </u>	-2	9.3		 		
		9.5	4			
			,			
						
	·					
			<u> </u>			

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

Q 6/2036~

Turbidity/pH Check

			-,	Cneck		
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
80 2083	>1	<2	6-12-12	BE	¥ < 5	30104
89 2097	<1	72	6-13-12	BE	Xes	BalcA Yes 15 or
80211617-91		J			Ne	1
802(35(1-3)	<١	<2	6-14-12	BE	yes	3010.4
802121(10-12)		>2_	-		No	xe5: 1619 c
"802122(1-7)						
802126(1-6)						
8c 2128		<2			No	NO
802142(1-34		72			No	XC5 \ 16:00
802148	71	<u> </u>		- -	×es	BalaA
8-2149	,[`				1	34/47/
502152	<1	<2	6-15-12	BZ	4	<u> </u>
802153	1		1 1 12	1	yes	3-1.4
802154(1-4)						
301268(1-10)			 	 	<u> </u>	4
801269 (1-10)			+		,√°0	No
801270	>1			 		<u> </u>
801271	-, {		 		X45	36 la 4
30 21 84 (23)	<1	> z	+ <u>*</u>	4-2	i	J.
902226			6-18-12	BE		yes a soo Am
802194	<u> </u>	<u> </u>	6-20-12	BE	xes	301A XCS 7:34 A
802195		1	-		Yes	NO 30/0A
80 2211						
8022 18			-		- 4	
	\V_	>2			NO	Yes thoo AM
802212	71	< 2			Yes	30 le A
892213						
802214						
802215						
802216					J	
802255(1-2)	>1	>2	- ,	<u> </u>	ye5	3010A Xes 11:00
802235/10-12)	<1	>2	6-21-12	B 5-	j√ ¢	Xes ELOO AM
80223661-3)						
802237(1-3)						
802245(1-2)	1		1	1	1	
802256	<1	<u> </u>	6-22-12	BE	No	Na
802262	71				Yes	30 10A
80226E	Ž.				1	
802265						
802268						
802267						
802277(1-51				1.	Na	MOBE XES = 14100
808274L (+)	<1	₹2	6-25-12	BL	No	No.
80227511-5)	<\	<u> </u>	6-26-12	BF	No	No
8022956-10)	<1	>2	1	1	-	YC5 9:00 AM
80 2291		7 2	 	1	× c-5	Delate
802292		₹2	1	1		7-197-
802285(1,2-4)		7.2		1	No	xes 11:00 AM
00 46 85 L. ''		,		1 P	14.5	スとつ いしのへんじり
8023 09	>1	12	6-27-12	BE		301,7



Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E 2</u>	Lab # <u> </u>
Date	e Delivered:௴6/1 <u>9</u> / 12 Time: <u>ఽఄఄ0:௴</u> By: □Mail ଔFi	ield Service
1.	Was a Chain of Custody received and signed?	ØYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ¤¶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 ZN/A
5.	Were all requested analyses understood and acceptable?	æYes □No □N/A
3 .	Were samples received in a chilled condition? Temperature (if yes)? <u>S. ルC</u>	Æ(Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	A(Yes □No □N/A
3.	Were sample custody seals intact?	□Yes □No ÂN/A
).	Does the number of samples received agree with COC2	ДYes □No □N/A
0.	Did sample labels correspond with the client ID's?	ZYes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ŽÍN/A
2.	Were samples pH checked? pH = \underline{Seec} . O. e .	ØYes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Hes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH	⊠Yes □No □N/A
<i>5</i> .	Sample Matrix: □Liquid □Drinking Water □Ground W □Sludge □Soil □Wipe □Paint □Solid ☎C	
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	d. Stighuin

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 29, 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-367 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 802320

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-367 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 June 26, 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.

tar Mona Nassimi

Manager, Analytical Services

Michael A

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

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

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 424973.01.DM

Laboratory No.: 802320

Date: June 29, 2012 **Collected:** June 26, 2012 **Received:** June 26, 2012

ANALYST LIST

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



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Laboratory No.: 802320

Date Received: June 26, 2012

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time Parameter		Result	Units	RL
802320-001	SC-700B-WDR-367	E120.1	NONE	6/26/2012	10:00	EC	7320	umhos/cm	2.00
802320-001	SC-700B-WDR-367	E200.8	NONE	6/26/2012	10:00	Chromium	ND	ug/L	1.0
802320-001	SC-700B-WDR-367	E200.8	NONE	6/26/2012	10:00	Manganese	1.2	ug/L	1.0
802320-001	SC-700B-WDR-367	E218.6	LABFLT	6/26/2012	10:00	Chromium, hexavalent	ND	ug/L	0.20
802320-001	SC-700B-WDR-367	SM2130B	NONE	6/26/2012	10:00	Turbidity	ND	NŤU	0.100
802320-001	SC-700B-WDR-367	SM2540C	NONE	6/26/2012	10:00	Total Dissolved Solids	4200	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



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Page 1 of 6

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Printed 6/29/2012

Laboratory No. 802320

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM P.O. Number: 424973.01.DM

Release Number:

Samples Received on 6/26/2012 9:30:00 PM

Field ID					Lab ID	Col	llected	Matrix		
SC-700B-WDR-367					802320-001	06/26	/2012 10:00	Wat	er	
Specific Conductivity - E	PA 120.1			Batch	06EC12D					
Parameter		Unit		Ana	llyzed	DF	MDL	RL	Result	
802320-001 Specific Conduct	ivity	umhos/cm 06/27/2012			1.00	0.116	2.00	7320		
Method Blank						····	****			
Parameter Specific Conductivity	Unit umhos	DF 1.00	. ,	esult ID						
Duplicate								Lab ID = 802320-00		
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00		esult 310	Expected 7320	R	RPD 0.137	Accepta 0 - 10	nce Range	
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00		Result Expected 712 706		Recovery 101.		Accepta 90 - 110	nce Range	
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00		Result Expecte 710. 706		Recovery 100.		Acceptar 90 - 110	nce Range	
Parameter Specific Conductivity	Unit umhos	DF 1.00		esult 32	Expected 998		ecovery 98.4	Acceptance Ra 90 - 110		

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality of condition of apparently identical of 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. 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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Page 2 of 6

Project Number: 424973.01.DM

Printed 6/29/2012

Chrome VI by EPA 218.6

Batch 06Crl-	112K	
--------------	------	--

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802320-001 Chromium, Hexa	valent	ug/L	06/27	7/2012 13:07	1.00	0.0250	0.20	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND	Lab ID = 802320-001				
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.00	Result 0.100	Expected 0.0975	F	RPD 2.73	Accepta 0 - 20	ince Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.198	Expected 0.200	F	Recovery 98.9	Accepta 70 - 130	ince Range)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.07	Expected 5.00	Recovery 101.		90 - 110	nce Range) 802320-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.13	Expected/Adde 1.10(1.00)	ed F	Recovery 103.	Accepta 90 - 110	ince Range)
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.07	Expected 5.00	F	Recovery 101.	Accepta 90 - 110	ince Range)
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.4	Expected 10.0	Recovery 104.		Accepta 95 - 105	ince Range



Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 3 of 6

Project Number: 424973.01.DM Printed 6/29/2012

Metals by EPA 200.8, To	otal		Batch	062712A							
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result			
802320-001 Chromium		ug/L	06/27	7/2012 13:06	5.00	0.195	1.0	ND			
Manganese		ug/L	06/27	7/2012 13:06	5.00	0.270	1.0	1.2			
Method Blank											
Parameter	Unit	DF	Result								
Chromium	ug/L	1.00	ND								
Manganese	ug/L	1.00	ND								
Duplicate							Lab ID =	802320-001			
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range			
Chromium	ug/L	5.00	ND	0.00		0	0 - 20				
Manganese	ug/L	5.00	1.19	1.17		2.03	0 - 20				
Low Level Calibration	Verification	1									
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptance Rar				
Chromium	ug/L	1.00	0.220	0.200		110.	70 - 130				
Manganese	ug/L	1.00	0.207	0.200		103.	70 - 130)			
Lab Control Sample											
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range			
Chromium	ug/L	5.00	104.	100.		104.	85 - 118	5			
Manganese	ug/L	5.00	104.	100.		104.	85 - 118	5			
Matrix Spike							Lab ID =	802320-001			
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range			
Chromium	ug/L	5.00	107.	100.(100.)		107.	75 - 128	5			
Manganese	ug/L	5.00	105.	101.(100.)		104.	75 - 125	5			
Matrix Spike Duplicat	е						Lab ID =	802320-001			
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range			
Chromium	ug/L	5.00	106.	100.(100.)		106.	75 - 125	5			
Manganese	ug/L	5.00	104.	101.(100.)		103.	75 - 125	5			
MRCCS - Secondary											
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range			
Chromium	ug/L	1.00	10.1	10.0		101	90 - 110)			
Manganese MRCVS - Primary	ug/L	1.00	10.1	10.0	101.		90 - 110)			
WINGVO - Fillilary											

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.

Expected

10.0

10.0

Recovery

101.

101.

Acceptance Range

90 - 110 90 - 110

Result

10.1

10.1

Unit

ug/L

ug/L

Parameter

Chromium

Manganese

DF

1.00

1.00



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6 Printed 6/29/2012

Project Number: 424973.01.DM

Total Dissolved Solids by SM 2540 C

Batch 06TDS12E

Total Dissolved Solids b	U	Daton	00103120					
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
802320-001 Total Dissolved	Solids	mg/L	06/27	7/2012	1.00	0.757	250.	4200
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate	Duplicate						Lab ID =	802320-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	4250	4200		1.18	0 - 5	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	495	500.		99.0	90 - 110)
Turbidity by SM 2130 B Parameter		Unit		06TUC12P lyzed	DF	MDL	RL	Result
802320-001 Turbidity		NTU		., 7/2012	1.00	0.100	0.100	ND
Method Blank			 		. ,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	802320-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.02	8.00		100.	90 - 110)
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	F	Recovery	Acceptance Range		
Turbidity	NTU	1.00	8.27	8.00		103.	90 - 110	1



Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 6 of 6

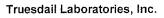
Project Number: 424973.01.DM Printed 6/29/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services





Total Dissolved Solids by SM 2540 C

Calculations

Batch: 06TDS12E Date Analyzed: 6/28/12

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	111.4219	111.4221	111.4219	0.0002	No	0.0000	0.0	25.0	ND	1
802285-2	100	71.8161	71.8289	71.8288	0.0001	No	0.0127	127.0	25.0	127.0	1
802285-4	100	74.7285	74.7616	74.7614	0.0002	No	0.0329	329.0	25.0	329.0	1
802320	10	50.3585	50.4009	50.4005	0.0004	No	0.0420	4200.0	250.0	4200.0	1
802320D	10	47.5296	47.5722	47.5721	0.0001	No	0.0425	4250.0	250.0	4250.0	1
LCS	100	68.1005	68.1502	68.15	0.0002	No	0.0495	495.0	25.0	495.0	1
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				:		:					
	. <u> </u>		1								
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			ļ	<u> </u>			1				

Calculation as follows:

Filterable residue (TDS), ma/L =

Where:

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

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

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	495	500	99.0%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802320	0.42	0.0425	81.6%	≤5%	No

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g)

Hope T.

Reviewer Printed Name

Reviewer Signature

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 06TDS12E
Date Analyzed: 6/28/12

aboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3	
000005 0	204	0.49	169.65	0.75	
802285-2	261	and the second second second second	381.55	0.75	2 P.F
802285-4	587	0.56		! !	' pi
802320	7330	0.57	4764.5	0.88	
802320D	7330	0.58	4764.5	0.89	
LCS					
		*	:		
				1	
			• (
*					
	10 1 21 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
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TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-367]

COC Number

TURNAROUND TIME 5 Days
DATE 06/26/12 PAGE 1 0

~~										•		45 40	a (b)	. All . All .	*								
COMPANY	<u>E2</u>						7	7	7	7	7 /	$\overline{}$	$\overline{}$	\overline{I}	\overline{T}	7	7	7	$\overline{}$	\mathcal{T}	7		UTO
PROJECT NAME	PG&E Topock						/		/ /	/	/ /					/ ,	/	/	/ .	/ /	/	COMME	NIS
PHONE	(530) 229-3303		fax (530)	339-3303		/	/	/ /	′ /	/		,	D .				/	_/	/ I				
ADDRESS	155 Grand Ave	Ste 1000	namenariana.					~ / <u>~</u>			/ /	S	Rec'o	1 0 8 0	6/26 2	§12	O'		CONTAINERS				
	Oakland, CA 94	1612	native in the latest and the latest			/29	\\ \display \\ \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \display \qu	· / ×	/ /	/	' /	/ *	#15a	/	/	/ /		/	TE.	/			
P.O. NUMBER	424973.01.DM		TEAM	_1_	,	5 Fillered	1 /2 / 1 /2 /	$\frac{ctan_{ca}}{\sqrt{2}}$		18	?//	/ /	/ /	/ /									
SAMPLERS (SIGNA	ATURE Son			<u>_</u>		Tob Metals	₹/.	TDS (SM25402	ž / ,	unidity (SM2130)	/ /								40 %				
					Cr6 (218 E.	B/M ₆	Sciff,	18/58	/ /:						/ ,	/ /	/	NUMBER	7				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/ ਨੂੰ	12/	\ \cdot \cdo	[] [/ /	? /				/ /				<i>></i>					
SC-700B-WDI	R-367	06/26/12	10:00	Water	х	х	х	Х	х									3		I	M =	6(2	·w.7)
																	j	3	TOT	AL NUI	MBER O	F CONTA	INERS
																	*						

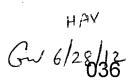


For Sample Conditions See Form Attached

CHAIN OF CUS	SAMPLE CONDITIONS				
Signature (Relinquished) Name Rous	Company/ HELDS Agency OM/	Date/ G-2G-12 Time /520	RECEIVED COOL ☑ WARM □ 48°€		
Signature // Printed //	Company/ +L(, Date/ 6-26-12 Time /5元の	CUSTODY SEALED YES NO D		
Signature // A / Printed	Company/ Agency H	Date/ 6 - そ81 セ Time とん3 O	SPECIAL REQUIREMENTS:		
Signature Printed & Printed & Name Studies	Company/ TV	Time 6/26/12 24:	3 0		
Signature Printed (Relinquished) Name	Company/ Agency	Date/ Time			
Signature Printed (Received) Name	Company/ Agency	Date/ Time			

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	I oh Ni mhan]	TB 65 A 14 A 4	T =		
F - F	Lab Number	· · · · · · · · · · · · · · · · · · ·			Time Buffered	Initials
	801867-2		2 m L/100m		12 pm	6.
6 (8/12	8-1867-3	1	2m / 100m	9.5	10 Am	ملی
 	801901-1				mAckel	
1/1	801901-2			7	10115Am	
6/18/12	2802163-1	1	2mL/100mL	9.5	11 Am	Ci
4	1 -2	7		1	11:15 Am	J
6/24/12	G02320	7	2ml/100ml	9.5	8:45 Am	HAV
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Turbidity/pH Check

		7	biaity/pn t	JIICOK			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjuste pH<2 (ed to
80 2320	<1	>2	6-27-12	BE	Yes		YC2 & 520 V
80 23 19 (1-11)	<1	>2	1		No	1	10:00 AM
002333	71	₹2	.).		1/25	30 lo A	
80 Z3 Z9(10-12)		> Z	6-28-12	BC-	No		8:an AM
802331 (5-6)	 		1	0.6	1	767	8.00 7101
802335		4		1	- J	J	
802345		<2			xe5	3010A	
2 - 23551	>1	72	Ψ	4	1		xes 14:30
80 2355(1,2)	<1	<2	6-29-12	BE	Xe2	3010A	
8 0 2358(1,2)							
802357				\ -			
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Sample Integrity & Analysis Discrepancy Form

Clier	nt: <u>E 2</u>	Lab#_802321
Date	Delivered <u>₽6</u> / <u>26</u> /12 Time: <u>2/:30</u> By: □Mail ⊠	Field Service
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 ゑ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)? <u>ฯ๋-& C</u>	ਕੇYes □No □N/A
' .	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Æ(Yes □No □N/A
<u>.</u>	Were sample custody seals intact?	□Yes □No æN/A
	Does the number of samples received agree with COC?	ØYes □No □N/A
0.	Did sample labels correspond with the client Ds?	AYes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail Client	□Yes □No de AN/A
2.	Were samples pH checked? pH = <u>See</u> C. co. E.	ਅੱYes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ÆYes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ⚠ RUSH □ Std	⊿dYes □No □N/A
5.	Sample Matrix: □Liquid □Drinking Water □Ground \□Sludge □Soil □Wipe □Paint □Solid 🖄	Water □Waste Water Other Waste R
6.	Comments:	
6. 7.	Comments: Sample Check-In completed by Truesdail Log-In/Receiving:	Seeda J

Analytical Bench Log Book

WDR pH Results

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
5C-100B	6-5-17	10:30	6-5-12	1035	METER*1	6-5-12	0200	55.5		7/20
es:				,				.	10	r s
5C-100B	65-12	10:30	6-5-12	1037	MELER#1	6-5-12	0200	-55.5	102 11400	
es:	·								11	
6C-700B	6-12-12	10:00	6-12-12	10:05	METER#1	6-12-12	100	-55.7	NOW PHELPS	7.1
es: SC-700B	6946-19	12 1300	619-12	1305	METERA I	6-19-12	100	-55:9	how the 10x	7.1
es:									11	, , , ,
5C-700B	6-26-17	1000	6-26-12	1005	METEL#1	6-26-12	1:00	-56.0	HONTHELPS	2.1
				~		\				
									1	
es:								-		
.s:										
		_	$\overline{}$							